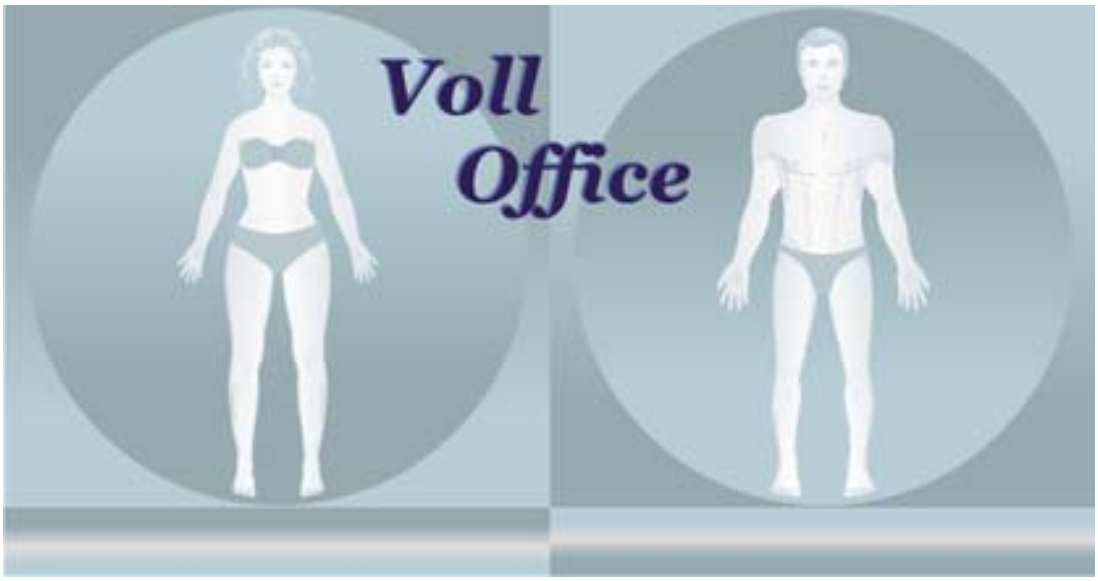
USER MANUAL



Hardware-software complex for acupuncture diagnostics on BAP and BAZ, testing of medicines, electric treatment and bioresonance therapy

ТУ 9444-001-0116473274-2009

The device is certificated.

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INTRODUCTION

Voll Office, hardware-software complex for acupuncture diagnostics on BAP and BAZ, testing of medicines, electric treatment and bioresonance therapy (henceforth referred as ***HSC Voll Office*** or **complex**) consists of Voll Office software (henceforth referred as ***Voll Office*** or **program**) and medical device of ***Master*** version (henceforth referred as ***Master*** or **device**). The complex is intended for estimation of the functional status of the human body by testing of biologically active points (BAP) and biologically active zones (BAZ) using electropuncture diagnostics; for testing of medicines, electric and bioresonance therapy for treatment of diseases of various etiology as well as for normalization of the disordered body functions. The complex consists of a hardware component (the device connected to PC) and the program. Read the operating instructions thoroughly before you start working with the unit. Accuracy of the results obtained, treatment efficiency as well as convenience in work depend on if the device is properly connected and set up.

GENERAL INFORMATION

HSC Voll Office has several modules for diagnostics (Voll, Ryodoraku, Su-Jok, Vega Test, Aurametry, Auriculodiagnostics) and treatment (Bioresonance, Antiparasitic and Frequency therapy, Electric treatment, Physical and Reflex therapy, Acupuncture), as well as embedded database with more than 17 000 electronic drug copies for testing of medicines.

The complex is intended for use in healthcare facilities, medical treatment and preventive care institutions.

Personal computer and printer should not be located near a patient (the distance must be at least 1.5 m).

Mean time between failures is not less than 2200 hours.

An average lifetime of the device is at least 5 years.

Criterion of limit state should be an economic inexpediency of restoration of serviceability.

The continuous work time of the device is not permitted to exceed 8 hours.

Specifications

Power supply from USB port, V	5
AC external power supply, V	220
Isolation operating voltage (for patient protection), V	4 000
Maximum power consumption, VA	80
Speed, measurements per second, s	35 000
Voltage on electrodes in the VoII diagnostics mode, V	+1.28
Current in the VoII diagnostics mode, μA	12
Voltage on electrodes in the Nakatani diagnosis mode, V	12
Current in the Nakatani diagnosis mode, μA	200
Voltage on electrodes in the Su-Jok diagnosis mode, V	5
Current in the Su-Jok diagnosis mode, μA	10
Maximum voltage on electrodes in the electrotherapy mode, V	+/–24
Maximum current in the electrotherapy mode, mA	20
Conventional operating current of a protective device in the electrotherapy mode, mA	40
Current measurement accuracy in the electrotherapy mode, mA	0.004
Frequency range in the electrotherapy mode Hz	0…10
Maximum modulating frequency in the electrophysiotherapy mode, Hz	250
Maximum carrier frequency in the electrophysiotherapy mode, Hz	1 000 000
Frequency range in the mode of antiparasitic bioresonance therapy, Hz	0.1 – 5 000 000
Frequency adjustment accuracy, Hz	0.1
Polarity of impulses in the electrotherapy mode	+/–/bipolar
Impulse shape in the electrotherapy mode	meander/sinus/triangle/ special
Impulse shape in the mode of antiparasitic bioresonance therapy	meander
Quantity of modes of electrophysiotherapy, pcs	23
Frequency range in the mode of analog bioresonance therapy, Hz	0 – 20 000 000
Amplification in the mode of analog bioresonance therapy, unit	1 – 32
Maximum amount of cells in the medicine selector, pcs	32 000
Gross weight of the device, kg	1.5
Dimensions, mm	156 × 180 × 44

Labeling

There are symbols of sockets and indicators on the front panel of Master device:

Electrodes — a socket for the connection of the patient cable;

Test — a socket for the connection of the cable for testing;

V (**V**oll) — indication of the Voll diagnostics mode, vegetoresonance testing and auricular diagnostics;

R (**R**yodoraku) — indication of the Ryodoraku diagnostics mode (Nakatani's technique) and Su-Jok diagnostics mode;

T (**T**herapy) — indication of any type of electrical therapy in progress;

N (**N**ozod) — indication of recording of electronic drug copies.

Delivery set:

Cylindrical electrodes (2 pcs.)

Electrode probe (with replaceable tip)

Containers for testing (2 pcs.)

Electrodes for electrotherapy
(2 pcs.)

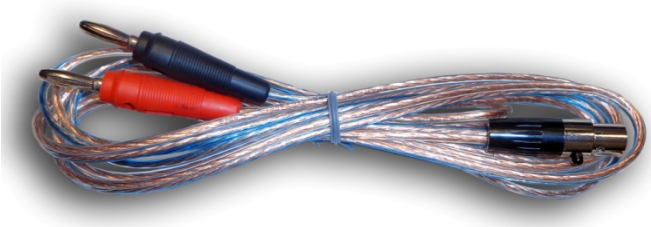
Plug-snap connectors to connect
the electrodes for physiotherapy
produced by outside manufacturers
(2 pcs.)

Replaceable tip for the electrode
probe to carry out Nakatani
diagnostics

Replaceable tip for the electrode
probe to carry out Su-Jok and
auricular diagnostics, as well as
for the child health assessments

Adhesive soft cloth tape for fixation of electrodes for electric physiotherapy on the patient's body

Patient cable



Cable for testing

Cable for connecting device to PC, USB 2.0 A (male) — B (male)

Device power cable
It is not advised connection the device to 220 V mains supply during diagnostics.

Compact Disc with installation files, drivers, utilities and extensive documentation.

Computer system requirements

Operating system: Windows XP/VISTA/7/8/10
Processor: not less than Celeron 1000
Video adapter: any model supporting version DirectX 6.1 or higher (i. e. released in 2000 or later)
Random access memory: 256 Mbytes
Hard disc free space: at least 25 Mbytes
At least 1 serial USB port
If the CD with software is intended to use, CD-ROM is required.
For reproduction of sound, an audio card and speakers are required.

Preferable screen resolution is at least 1280x1024 for the most comfortable conditions of work.

INSTALLATION OF THE COMPLEX

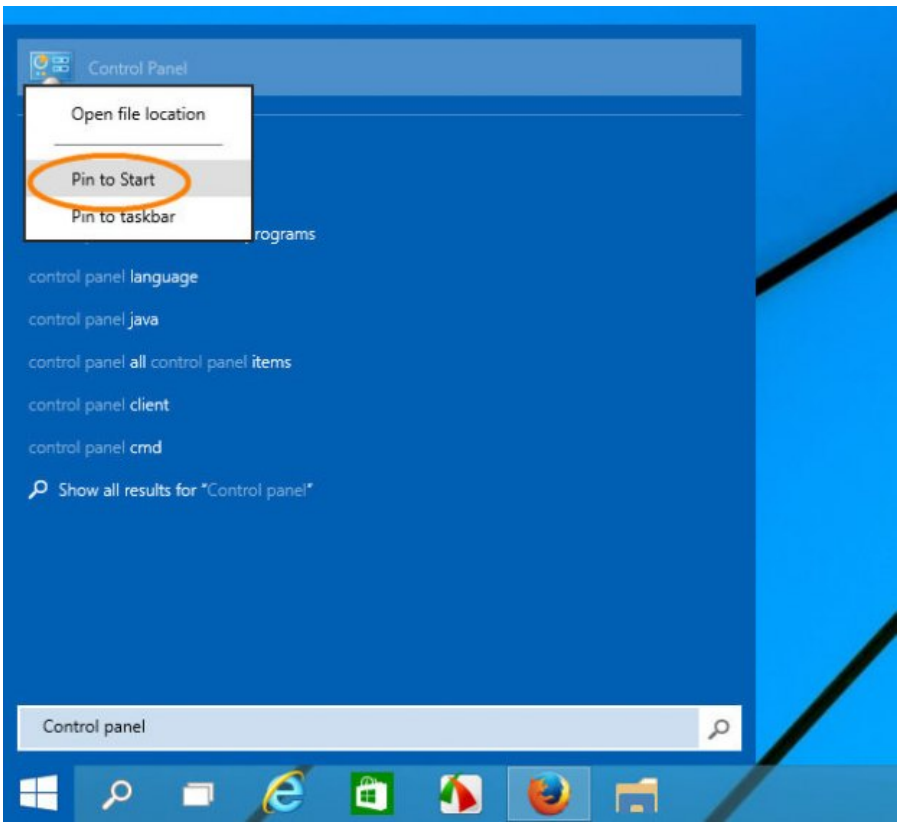
Log in as an administrator. **Do not connect *Master* to your computer!**

Turn off User Account Control in Windows Vista/7/8.1/10

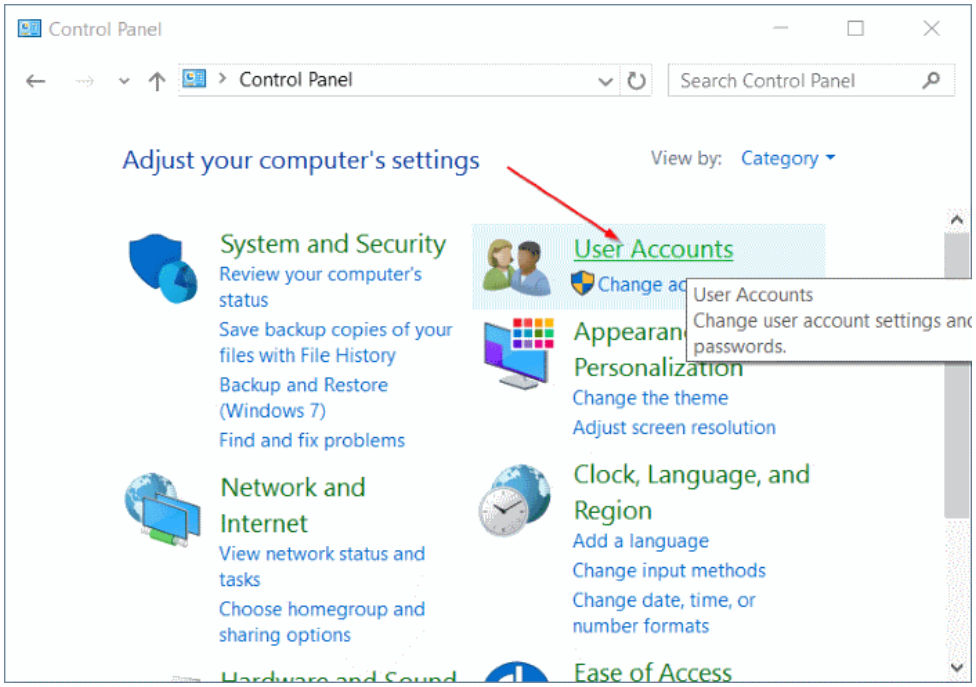
It is advised to turn off User Account Control in order to ensure that Windows system facilities do not adversely affect such functions as addition of clients to the ***Voll Office*** program, report generation, etc.

If METRO interface in **Windows** is active, navigate to **Desktop**.

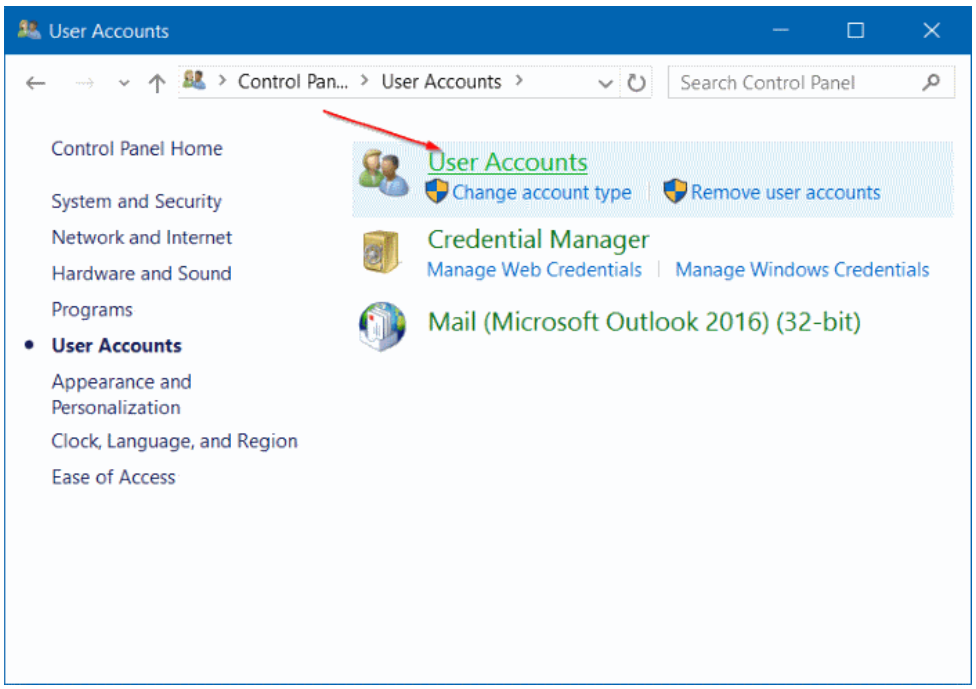
Click the **Start** button in the left bottom corner of **Desktop** Windows, open **Control Panel** using search box.



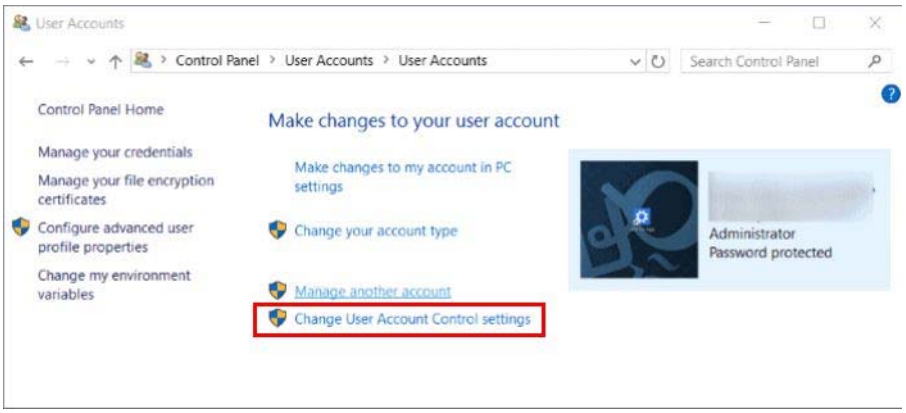
Click the User Accounts link in Control Panel.



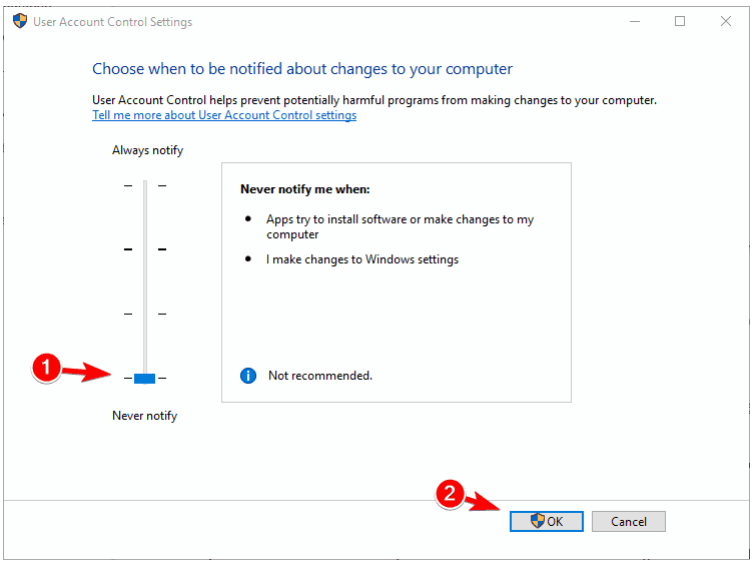
Click the User Accounts link one more time.



In the opened **Make changes to your User Account** window click the bottom **Change User Account Control settings** link:



In the **Choose when to be notified about changes to your computer** window drag the slider to the lowermost position *Never notify* and click the **OK** button.

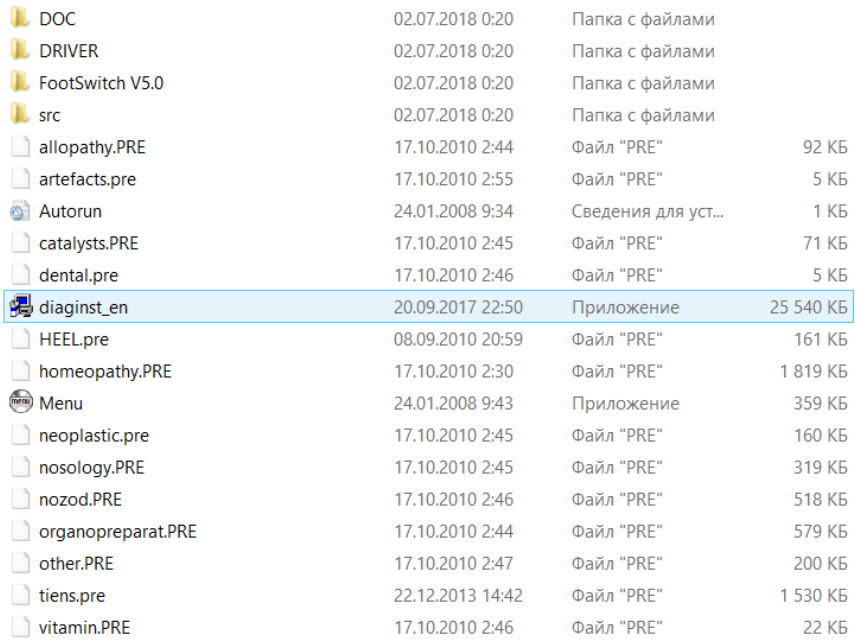


Then confirm selected action by clicking **Yes** in the relevant window:

Installation of the *Voll Office* program

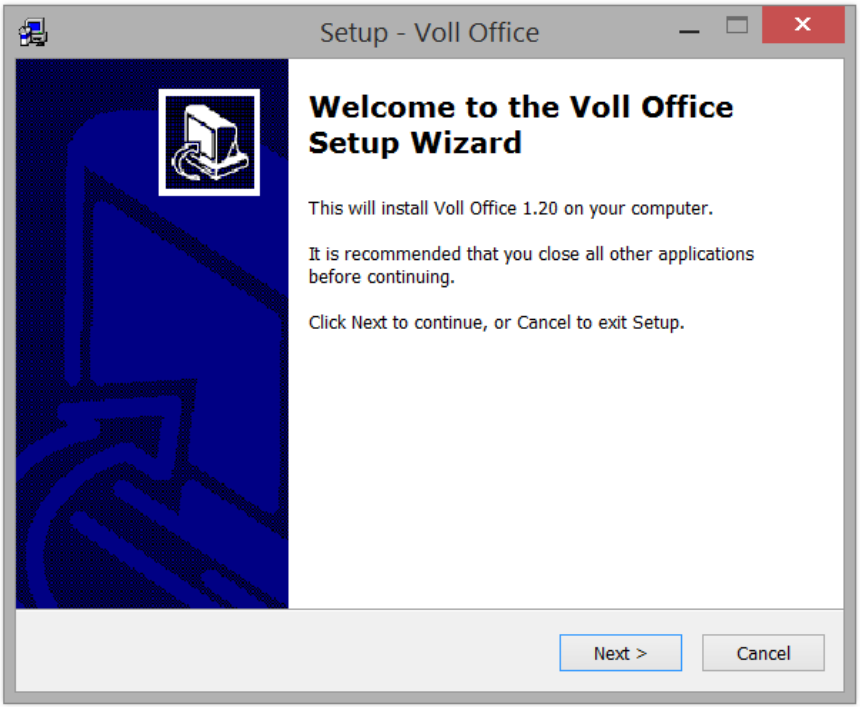
Insert the Installation CD into CD-ROM drive.

Run the setup program **diaginst_en.exe**

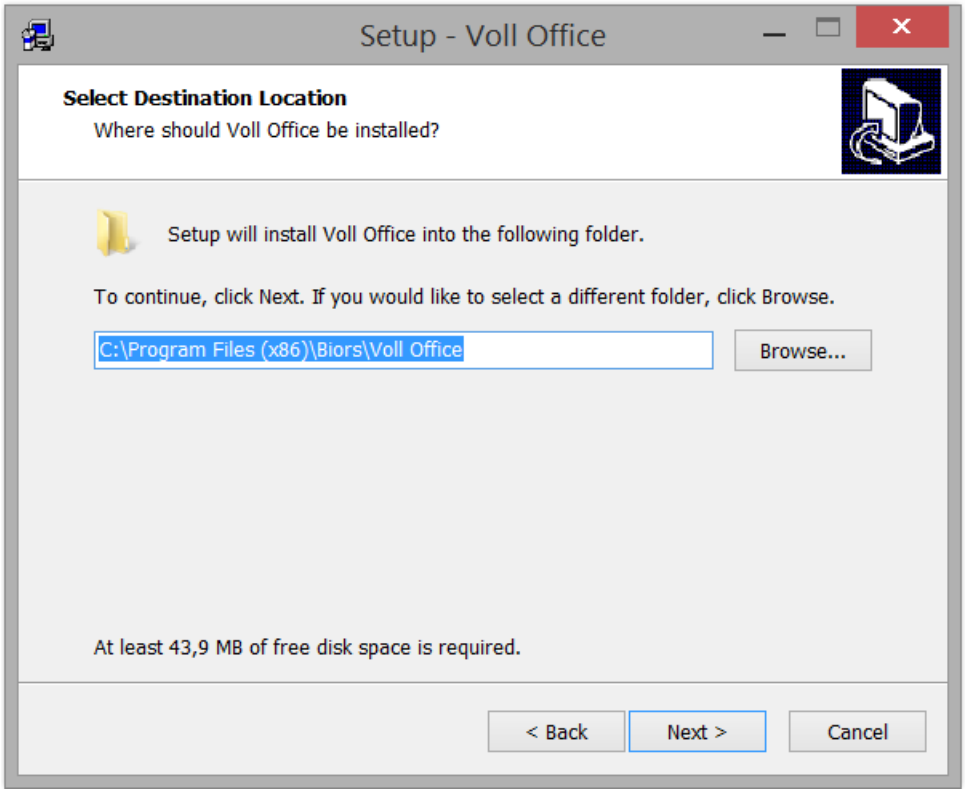


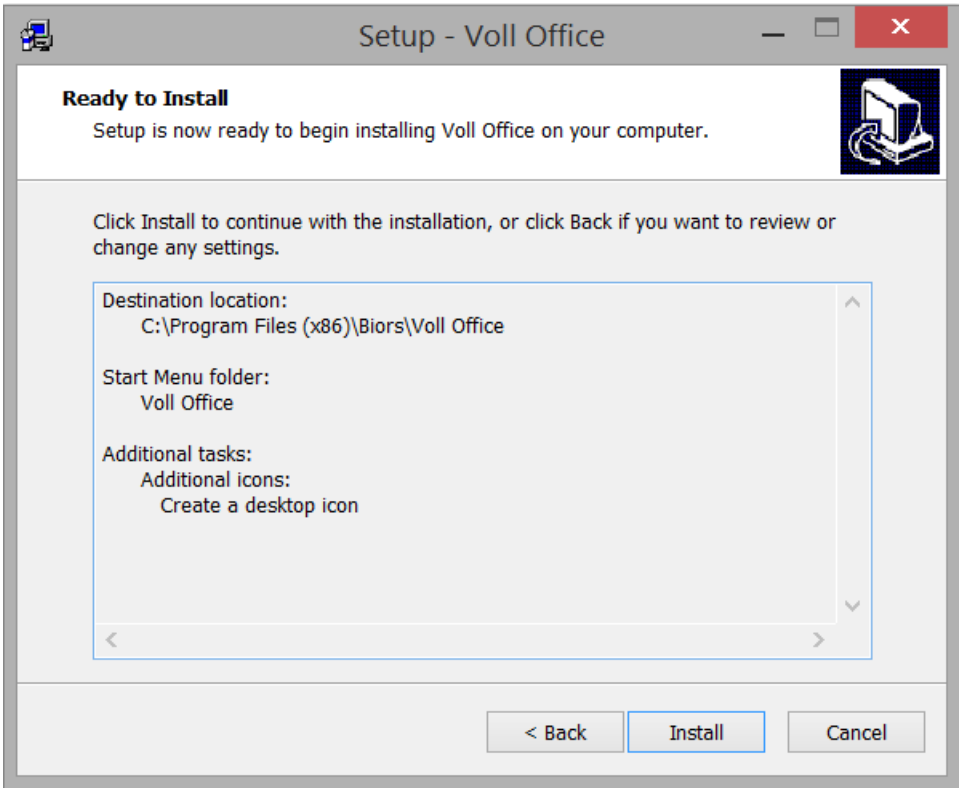
The Windows Security message will appear during the driver installation process. Tick the **Always trust software from** box and click the **Install** button:

It is advisable to answer “Yes” to all question of Setup Wizard during the installation.

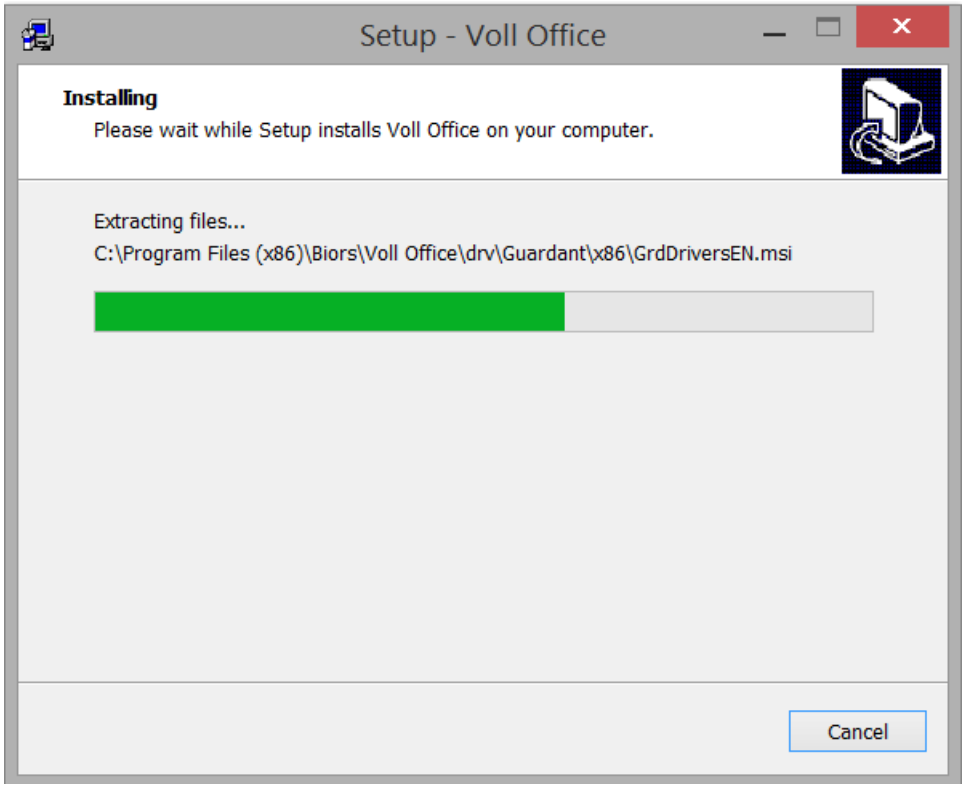


During the installation process you will be offered to choose the directory for installation of the program. It is preferable to leave it at its default setting and click the **Next** button:

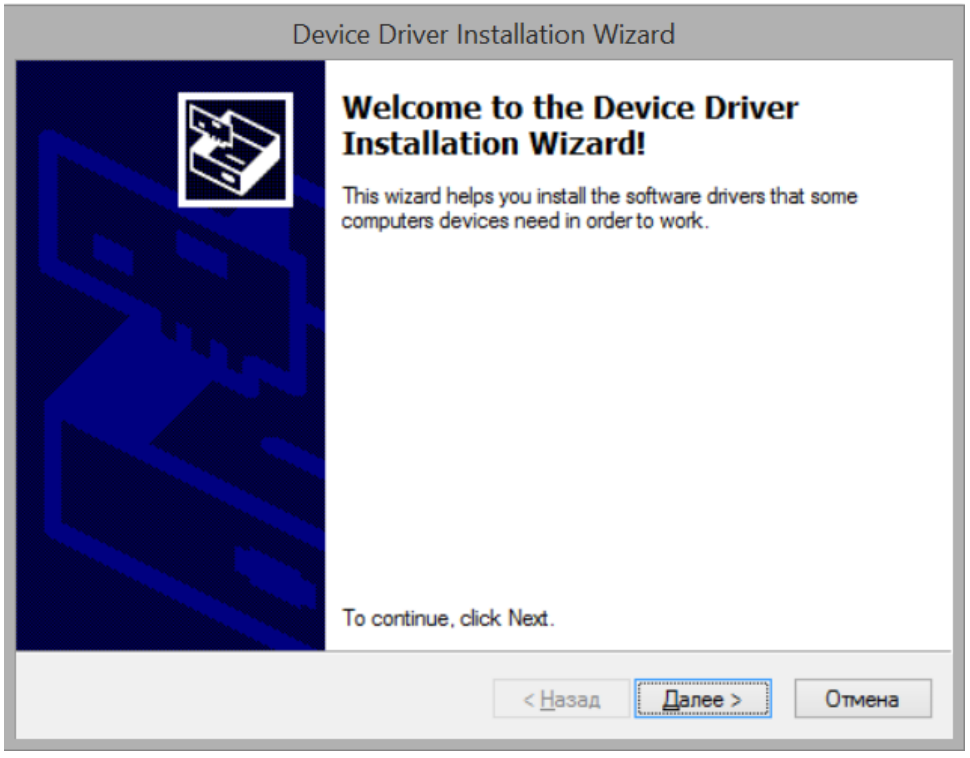




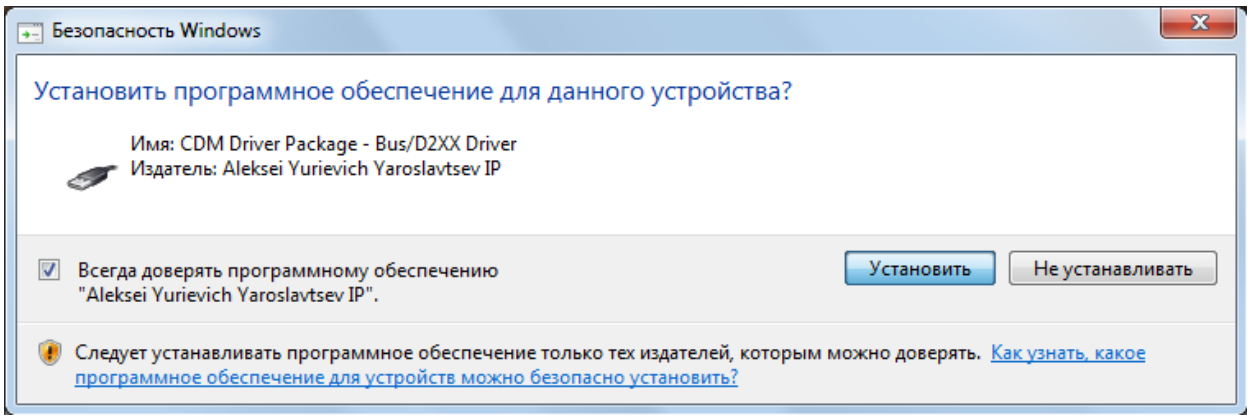
The setup program will run. Do not interrupt the installation process!



At the final stage of program installation the setup of the drivers will be performed automatically. Click the **Next** button.

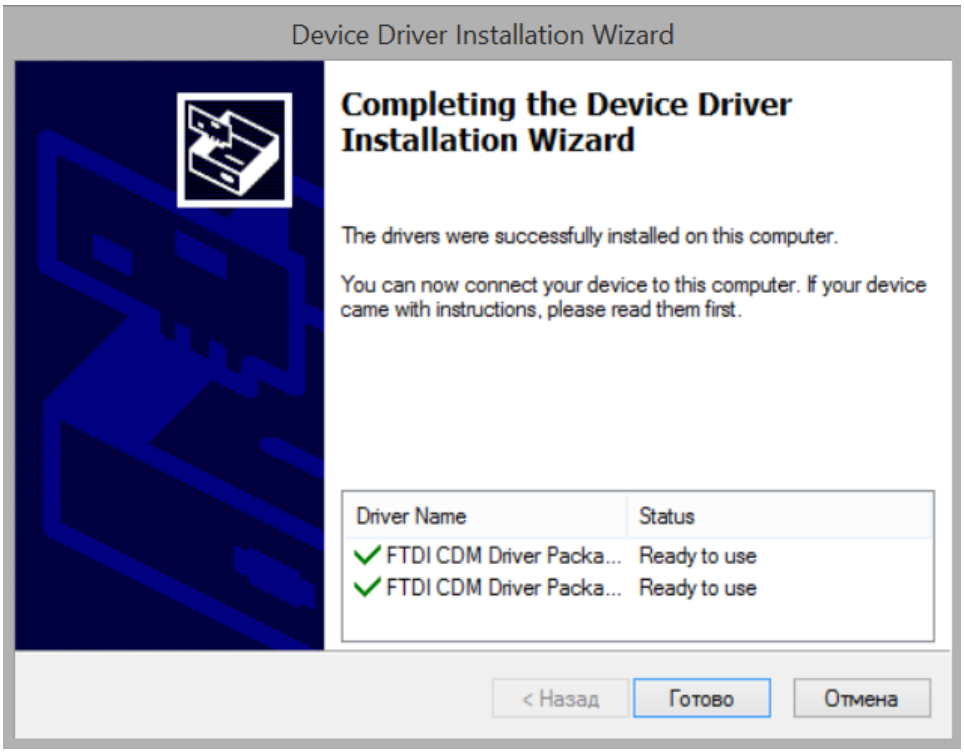


The Windows Security message will appear during the driver installation process.

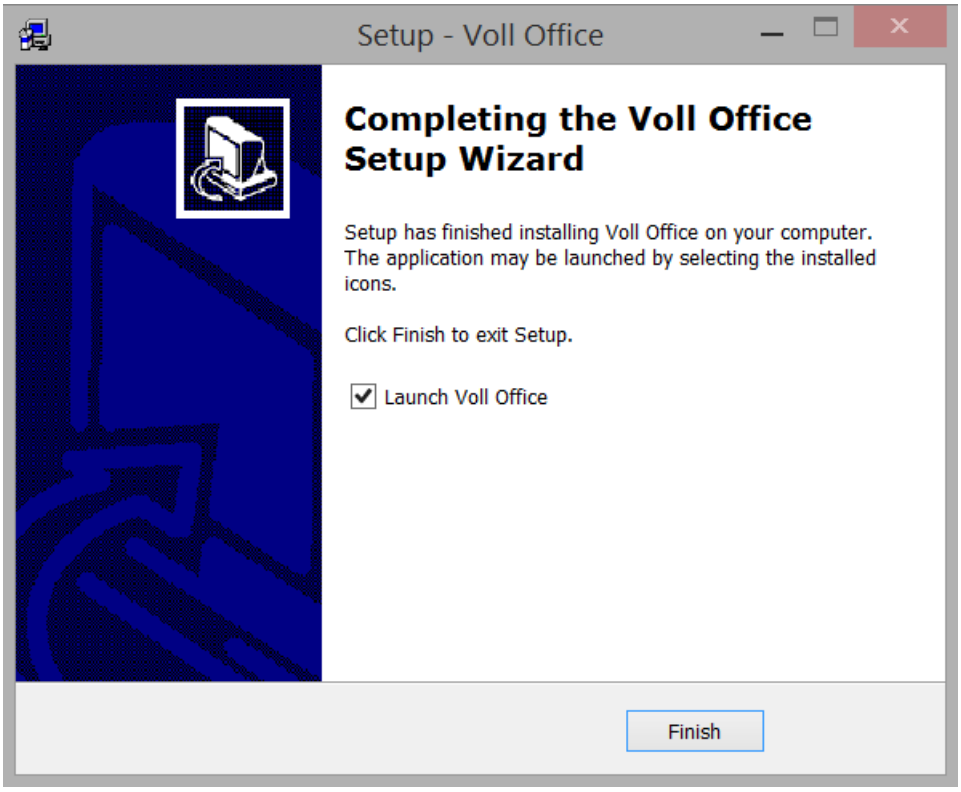


Tick the box **Always trust software from** and click the **Install** button.

At the final stage of program installation such window will be shown:

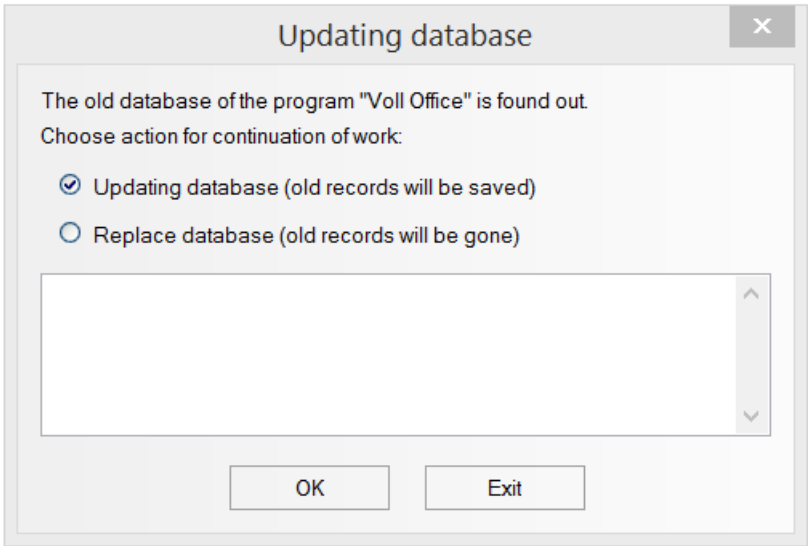


Upon completion of the installation process, a dialog box will be shown and you will be offered to run the program.



When the ***Voll Office*** complex is installed and you are going to connect the device to your PC and install drivers for the first time, it is not advisable to run the program before the device initialization (you should untick the box **Launch Voll Office**). It is advisable to run the program after the device initialization without disconnecting it.

At the first launch of the program after the installation of a new version, a dialog box prompts you to save or update database:



If you do not want to remove the database of all the examinations, created techniques, etc. completely, you should remain the tick in the **Updating database box**.

If you replace the tick into the box **Replace database**, all entries about receptions, examinations and techniques will be removed from the database without possibility to restore.

Connection and setting of the device

Connection and launch sequence of the Master complex:

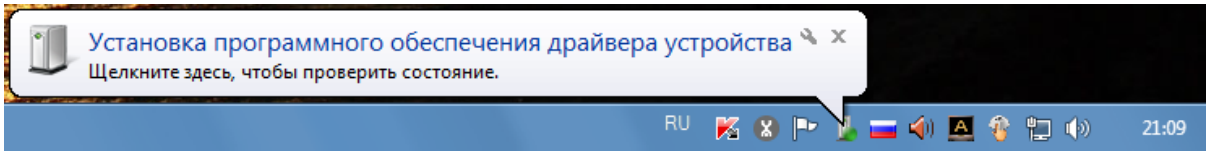
1. Turn on the computer
2. Connect the device to USB port of the PC
3. Run the program
4. Connect the device to 220 V mains supply (if required)

If the program *Voll Office* is running, you should close it before launch of the device for the first time.

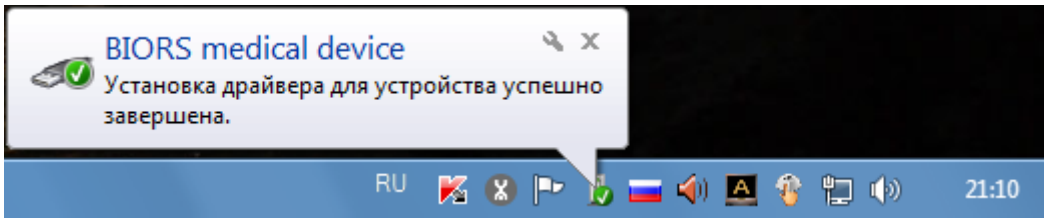
Connect B USB cable to the socket on the rear panel of the device marked as ⇐. Connect A USB cable to the computer. The light on the rear panel of the device (it is the indicator of power supply) must come on ⏻. It is desirable to connect the device to the USB port on the main system board of the computer, avoiding connection to USB ports of monitor or front panel base unit.

After connection of the device to the USB port, lights on the front panel of the ***Master*** device must come on consecutively in the following order: **V-R-T-N-T-R-V**.

In the right bottom corner of the screen the message about installation of the device will appear:

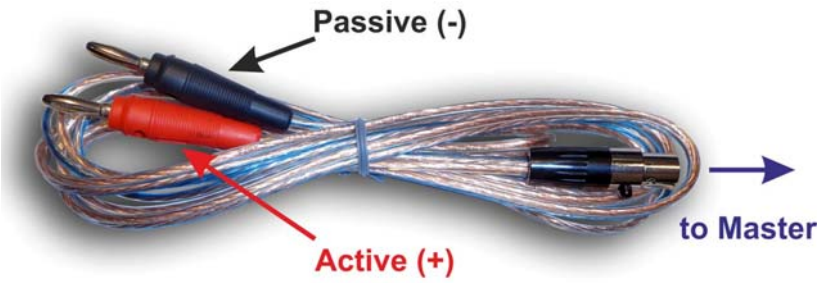


The device must be installed automatically.

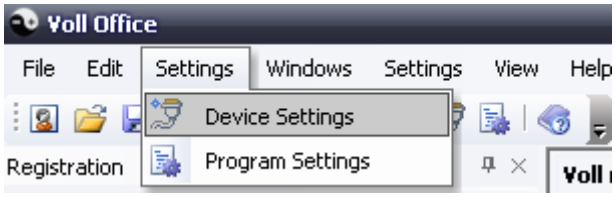


For additional power supply for the ***Master*** complex (for example, when conducting electrotherapy), connect one end of the power supply cable to the socket of the device and other end to the 220 V 50 Hz mains supply. **Additional power supply is required only when conducting electric physiotherapy with increased current.**

Connect plug of the miniXLP patient cable to the socket **Electrodes** of the device. The cable has plugs: **red** is active (positive) for connection of the ebonite electrode probe or the cylindrical electrode, and **blac**k is passive (negative) for connection of the cylindrical electrode.

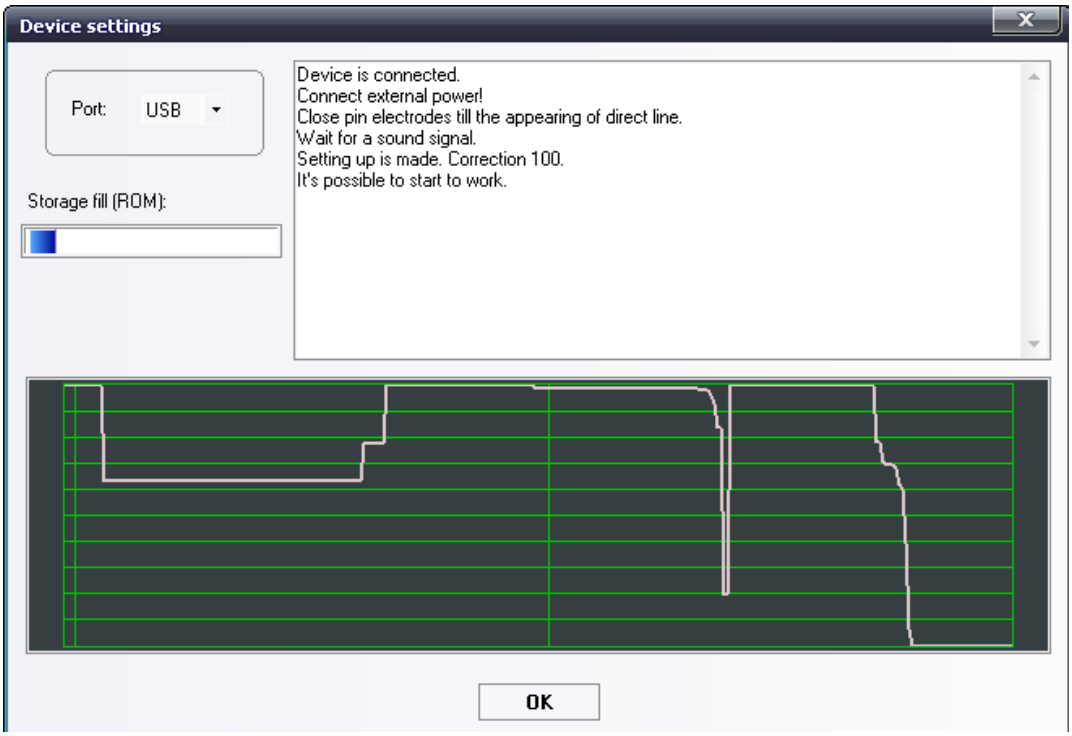


Run the ***Voll Office*** program. Call the **Settings** menu, then select **Device Settings**.



Connect plugs of red and black electrode cables together. When the white line in the graph rises, wait for the system message that the device is set up successfully: “Setting up is made”. Digital value of correction makes no difference.

During the automatic setup process of the device, lights on the front panel of the Master complex come on consecutively in order **VRVTV**, which means setup and calibration of the certain channel. **N** light does not come on during the setup process, because calibration of the mode of working with medicines is not required.



Upon completion of the setup process, it is advisable to disconnect the device from the 220 V mains supply, unplugging black mains cable. Device connection to the 220 V mains supply is required only when conducting physiotherapy with increased current. All other modes are **not required** external power supply, just connect the device to USB port.

Driver check and reinstallation

Installed drivers can be viewed in the Device Manager when the device is connected.

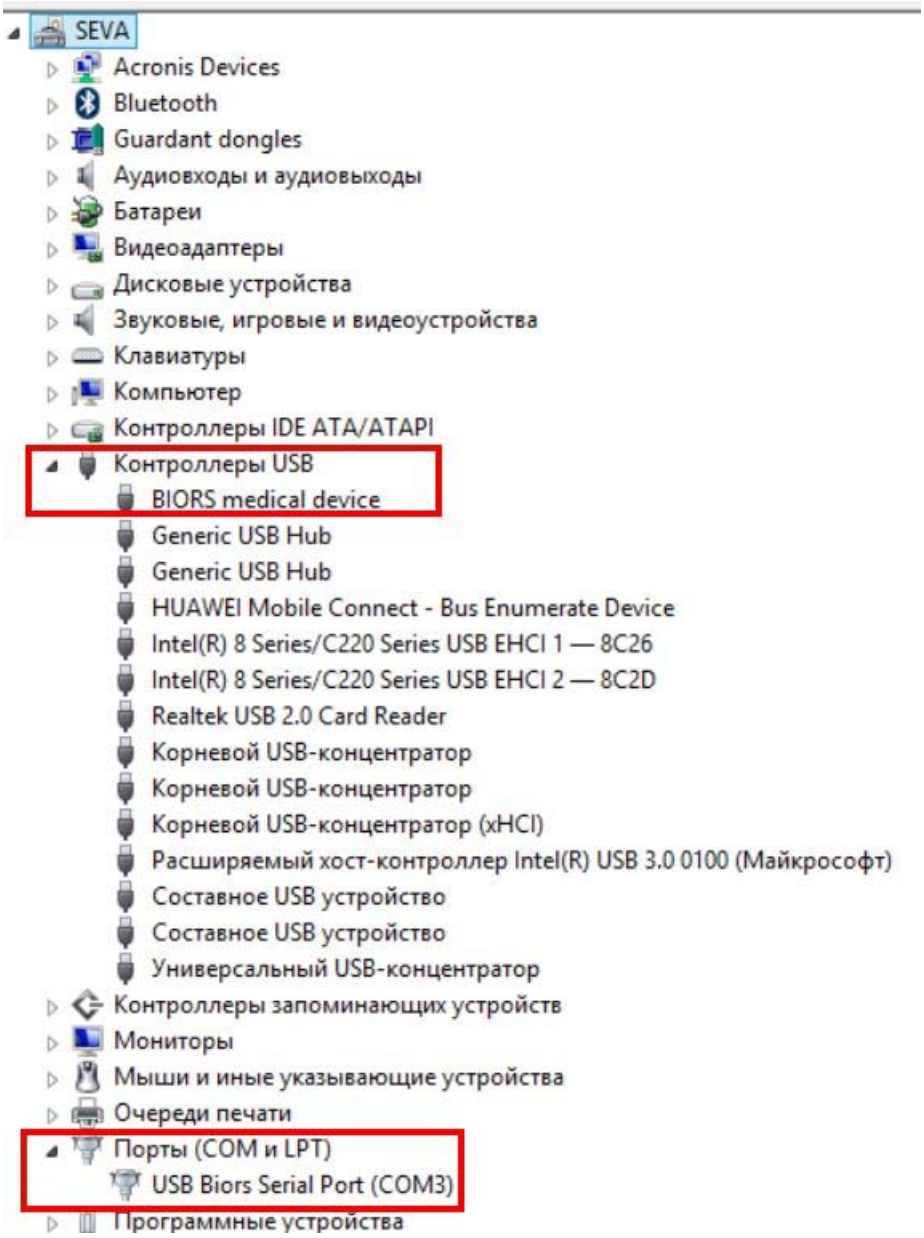
On Windows XP PC you should select Control Panel in **Start** menu, click **System**, choose the **Hardware** tab, and then click the Device Manager button.

On Windows 7 PC you should select Control Panel in **Start** menu, click **Hardware and Sound,** and then choose the Device Manager on the right in the upper line of the opened **Devices and Printers** menu.

After driver installation and connection of the device you should see such lines in the list:

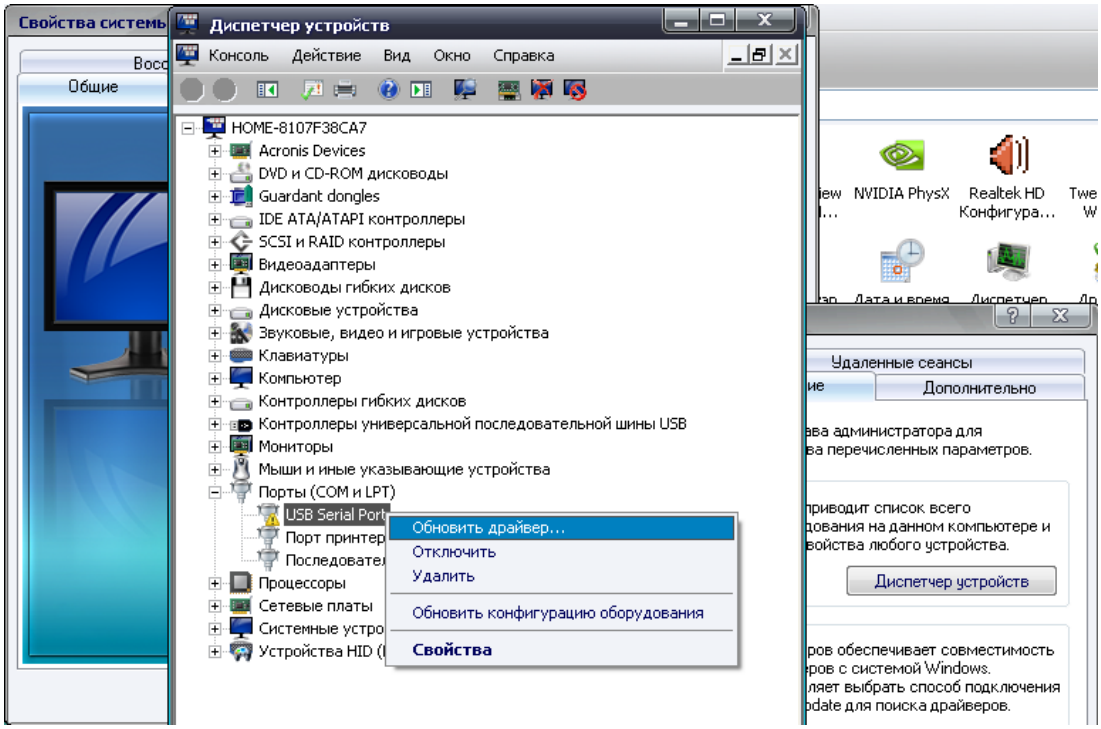
USB controllers — BIORS medical device

Ports (COM & LPT) — USB Biors Serial Port (*any number*)



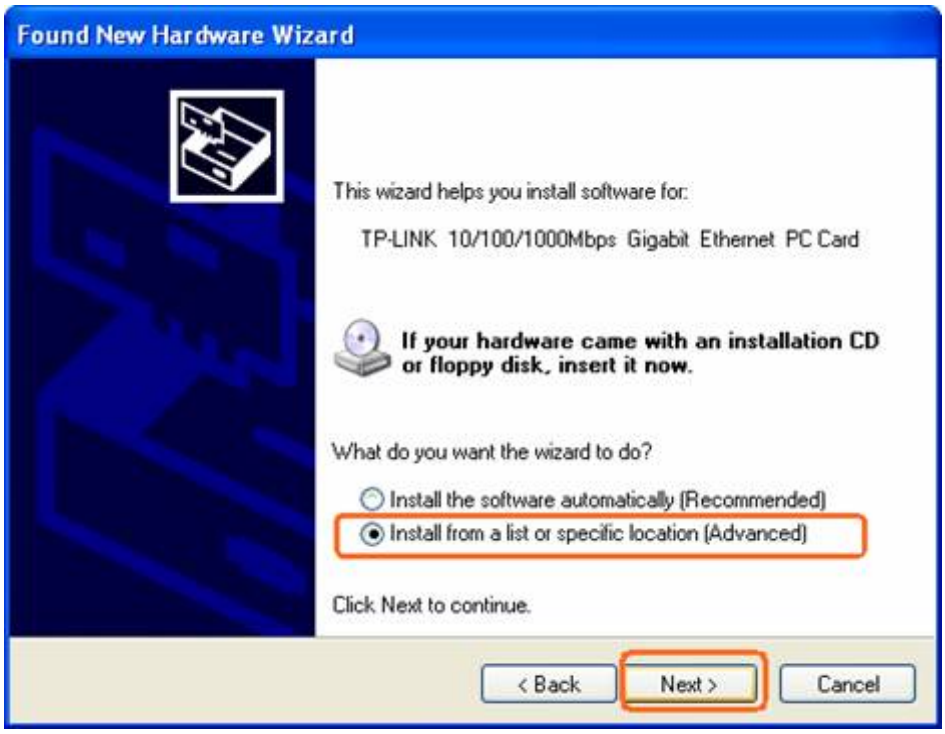
If there are no specified lines or they are marked with yellow exclamation sign (it can also be with a question mark), it means that the driver is installed improperly. In that case you

should install the driver software **manually**. To do that, move the mouse cursor to this driver, press the right mouse button, and select in the pop-up window the line **Update the driver**.

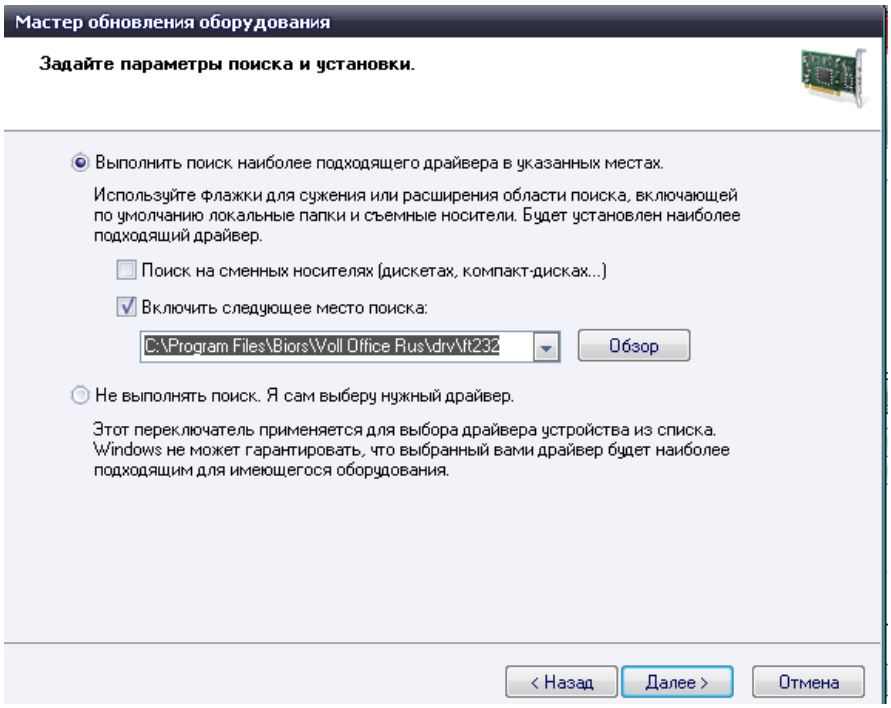


You should further reject connection to Windows Update in the window of Hardware Update Wizard (tick the box **No, not this time**).

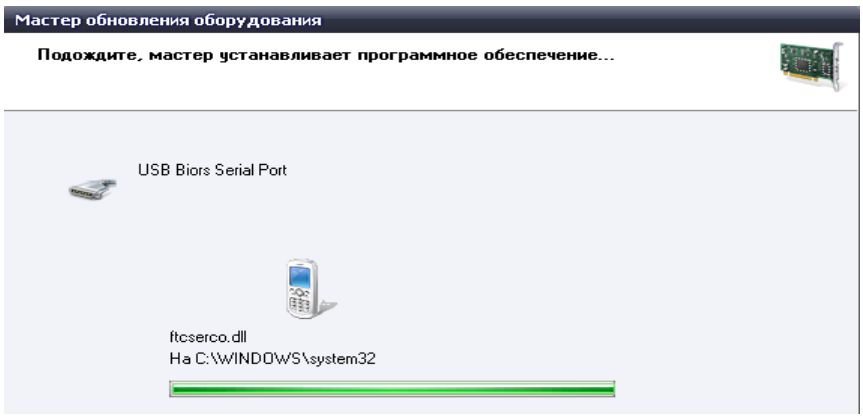
Then click the **Next** button and in the following window select **Install from a specific location**.



Click the **Next** button and include the install directory **C:\Program Files (x86)\Biors\Voll Office Rus\drv** in the driver search in the following window **Please choose your search and installation options** using the **Browse** button.



After clicking the **Next** button the Hardware Update Wizard will run and install the required driver.


Мастер обновления оборудования
Подождите, мастер устанавливает программное обеспечение...
USB Biors Serial Port
ftcserco.dll
На C:\WINDOWS\system32

COMMON TROUBLES AND REMEDIES

There are no images of BAPs during the diagnostics process (the atlas is not visible)

Sometimes after the program installation images are disappeared completely or partially. 90 % problem with the display are resolved by installation of drivers for VGA adapter. Although Microsoft includes drivers in Windows installation software, it often "forget" about implementation of some functions. This is particularly true for OS *Windows 10*. Required display drivers must be on the CD when you purchase a computer or it is possible to download them from the website of the video card manufacturer.

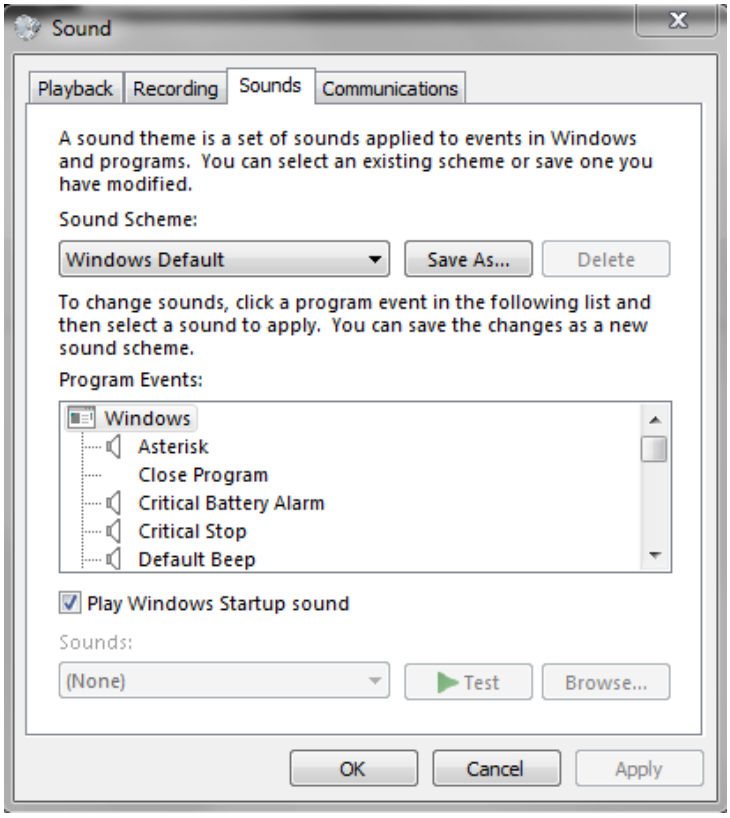
The shutdown of the device occasionally occurs with subsequent spontaneous start up.

When the electric power is switched on and/or off, a short term deactivation of the device driver is possible. In the info window the message "The device is lost" will appear, accompanied by sound signal. In that case you should not do anything, the program itself will found the device in 30–40 seconds. If the plug is not tightly inserted into the socket, periodic disconnection of the device is possible due to swinging or twitching of the plug in the socket. In that case you should unplug the device from the 220 V mains supply and work from the USB port only.

There are no sounds during the measurements

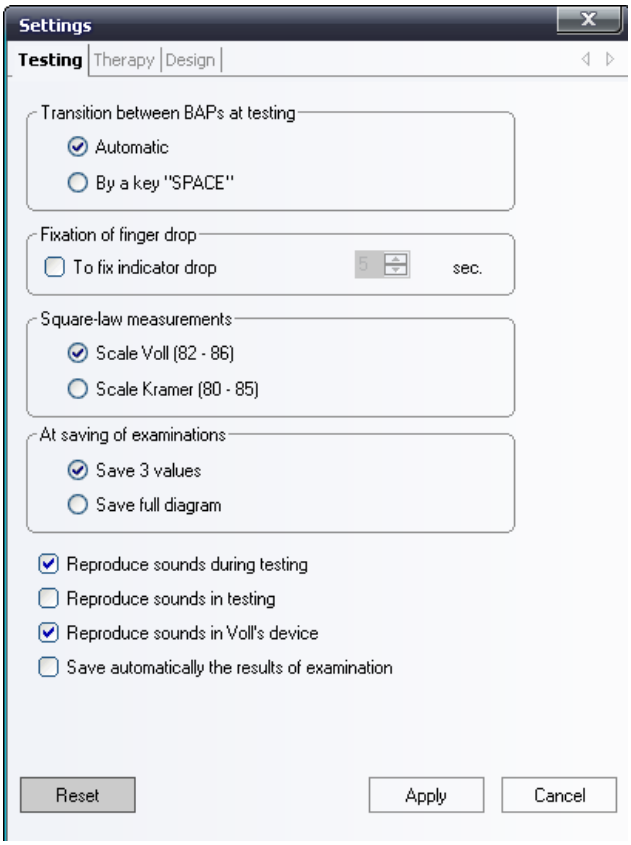
1. Install audio card or drivers for it.
2. If audio card is installed, but still there are no sounds during the BAP measurements, it means that system sounds in Windows are muted. You should unmute them:

select Control Panel in **Start** menu, click **Hardware and Sound**. Then select and click **Change system sounds**, under **Sound**. Select sound scheme (Windows default is okay).

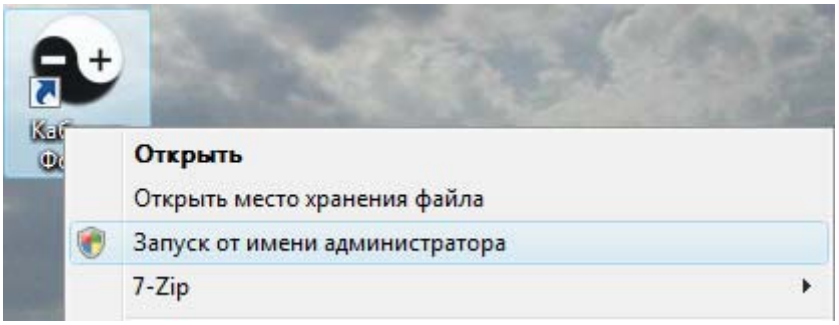


Nosodes from the ROM no longer visible completely or partially

1. If nosodes from the ROM on the list of nosodes are no longer visible, you should click the **Reset** button in **Settings** menu — **Program Settings** — **Testing**.



2. There may be cases when after launch of the program the medicines database is no visible or complex is installed incorrectly. It happens because of UAC settings (User account control). They do not allow applications to work correctly; in particular, affect deletion of files. Therefore you should either disable them, or log in as an administrator every time you run ***Voll Office*** (click the right mouse button on the icon). In that case it may be necessary to enter a system administrator password:



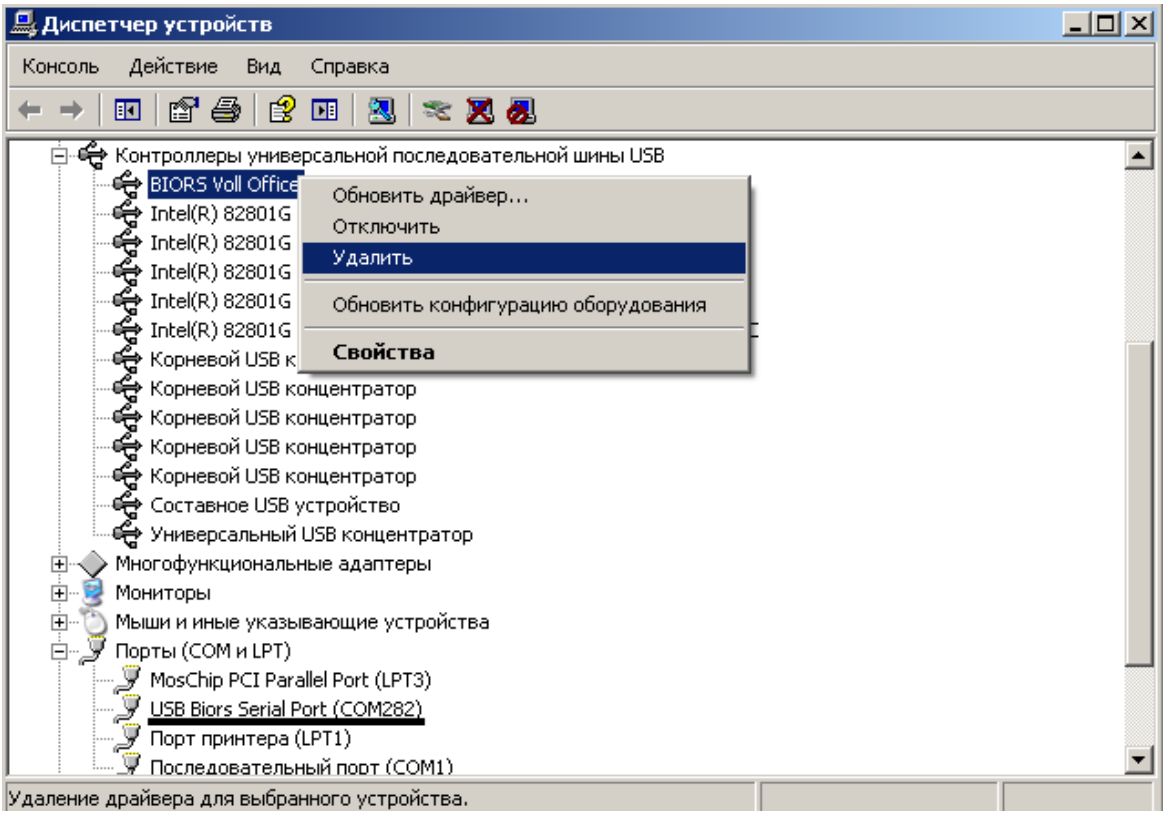
The program does not "see" the device after its installation or the data from the device is added incorrectly

In these cases, as well as when the lights on the front panel of the device do not come on consecutively after its connection to USB port of PC, but the driver of the device is installed and you can see it in the Device Manager (under USB controllers), i. e. in every possible problem with the device you should do the following:

1. Close the ***Voll Office*** program, disconnect the device from the USB port, connect the device to the computer again and launch the program. If the problem persists, you should

2. Change the connection port of the device. And in any case, **it is preferable to use USB ports integrated into the mainboard for connection of the device**. It is not advisable to use USB ports on the front panel of the PC, monitor and other peripherals. In laptops, it is difficult to define correct USB port, so you should just change the USB port for the device connection. If the problem still continues, you should

3. Delete device drivers. To do that, do not disconnect the device from the PC, select Control Panel in **Start** menu, click the **Hardware and Sound**, then choose the Device Manager (or click **System**, choose the **Hardware** tab, and then click the Device Manager button). Look for the device drivers ***Biors Voll Office*** (they can be under USB controllers) and USB Biors Serial Port (it can be under Ports COM & LPT) and delete both (click **Delete** in menu with the right mouse button).



After that disconnect the device from the PC, connect it again and reinstall drivers. You can download them from the installation CD from the Drivers directory or from the program installation directory **C:\Program Files\Biors\Voll Office Rus\drv\ft232)**

If the program does not "see"the Master device, you should reinstall drivers manually.

Contacting Technical Support

If no action is effective and the program still does not "see" the device, please send us the scan of Device Manager window (select Control Panel in **Start** menu, click **System**, choose the

Hardware tab, and then click the Device Manager button) when device is turned on. The following lines should be visible (opened):

USB controllers
– ***BIORS Voll Office***
Ports (COM & LPT)
USB Biors Serial port (any number)

If the program is unstable: hangs up, closes down disorderly, if data transfer from the device are delayed, or glitch occurs, etc., please send us the system information.

System information

You can get the system information using Windows tools, by means of the msinfo32.exe utility. This utility provides detailed information about hardware resources, components (multimedia, input/output, networks, ports, memory), software environment and Internet Explorer settings.

System information. It displays the basic information about computer (the name and the version of operating system, installed processor, BIOS version, physical and virtual memory space and swap-file size).

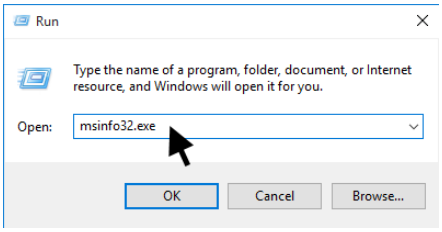
Hardware resources. It displays the information about hardware settings (direct memory access (DMA) and Interrupt ReQuest (IRQ) channel, input/output (I/O), memory).

Components. Detailed information about devices (CD-ROM, video unit, audiodevice, network card, keyboard, mouse, printer, etc.).

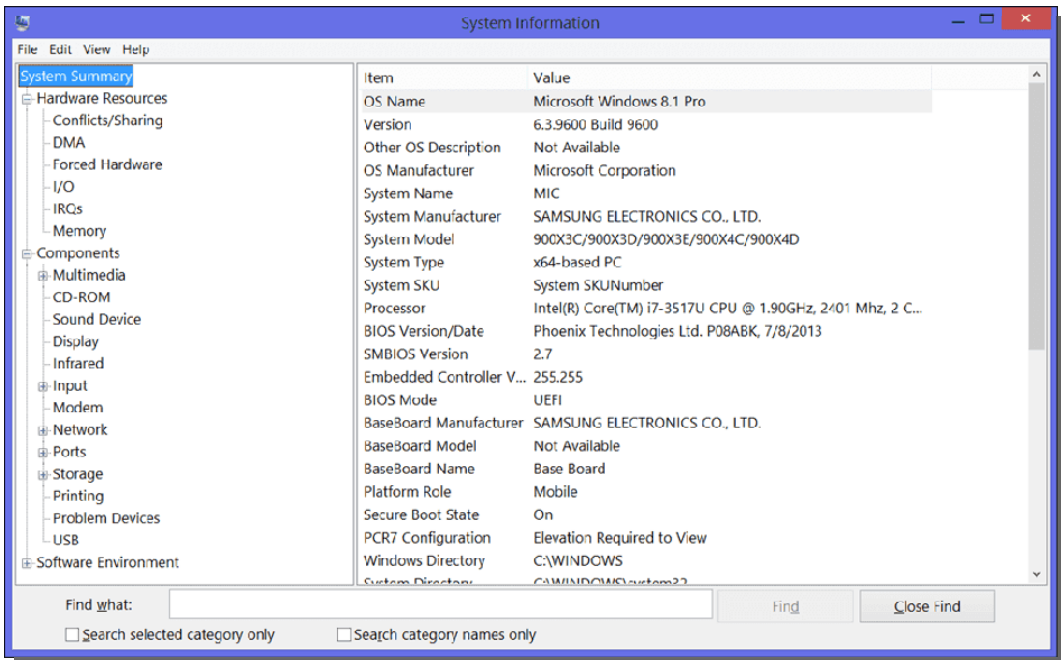
Software environment. Installed software, system drivers, running services, etc.

Parameter browser. Information about browser.

To find the information about your computer, go to the **Start** menu, then click **Run** or press **WIN** + **R** key combination (simultaneously). In the opened window enter **msinfo32.exe** and click **OK**.



System information (MSINFO32.exe) is as follows:



You can easily save the image of the screen with system information to your clipboard, if you make a screenshot. A screenshot can be taken by pressing the **PrtScn** button on the keyboard when you see needed image on the screen. Then taken screenshot can be pasted into a document in Word or Paint format (Click the **Edit** menu, then **Paste**). Repeat the same operation for other option from the system information menu.

It is not advisable to take pictures of the monitor screen using photographic camera or camera phone, because in that case too unclear image is formed. It makes analysis of the issue much more difficult.

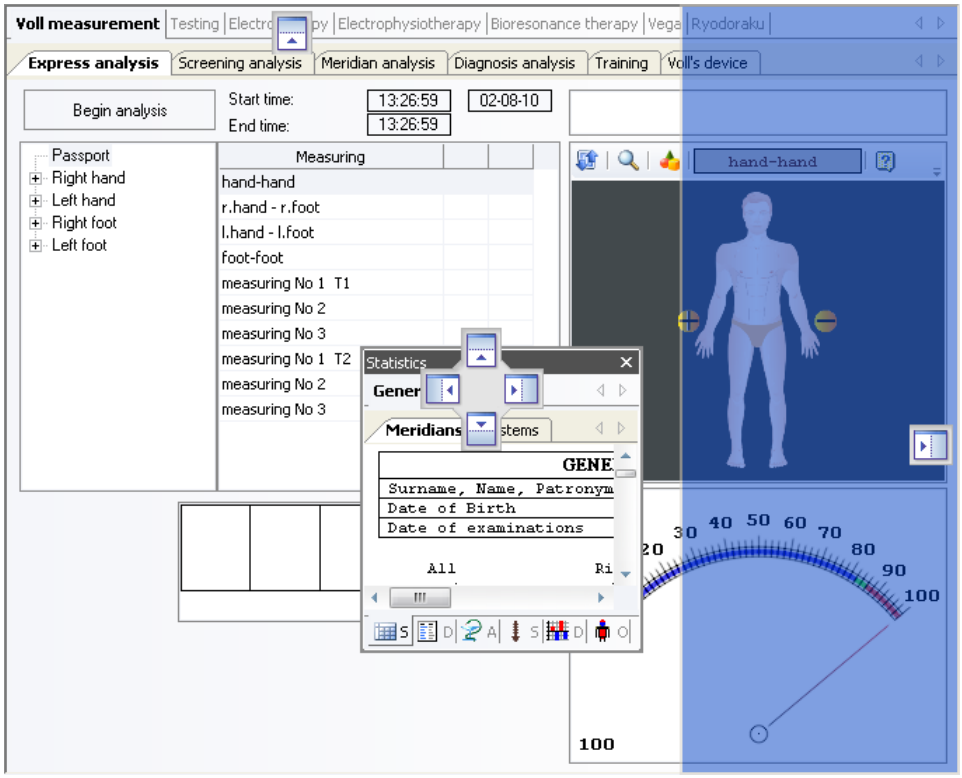
PROGRAM DESCRIPTION

The ***Voll Office*** program is intended for the online operation together with Master device as a hardware-software complex. However, you can as well launch it without connection to the device in order to become familiar with capabilities in demo mode.

The program has a flexible, user-friendly interface with a lot of options for customizing. As any other program, it requires some adaptation time and time to learn how to work with it. However, we hope it will not take users much time and they will be able to evaluate its capabilities. If you notice a program error, please contact us by email **biors@mail.ru**, and we will make every effort to fix it as soon as possible.

Working with the program

The ***Voll Office*** program has written using advanced software development tools (such as Microsoft Visual C++, DirectX, openGL, etc.) and has a lot of options for customizing of a user-friendly interface. In fact, you can get the size of every info window as you want and place it in a suitable location. To do that, you should “grab” the caption bar by the mouse pointer and “drag” it in the right direction. In the meantime, the colored rectangles appear, showing the side of the main window, suitable for attachment of the subdialog box. When you place the cursor with the subdialog box over one of rectangles, you can attach the subdialog box to any side of the main window. After that you should release the mouse button. For example, in the picture is shown how to attach the Statistic window to the right side of the application:



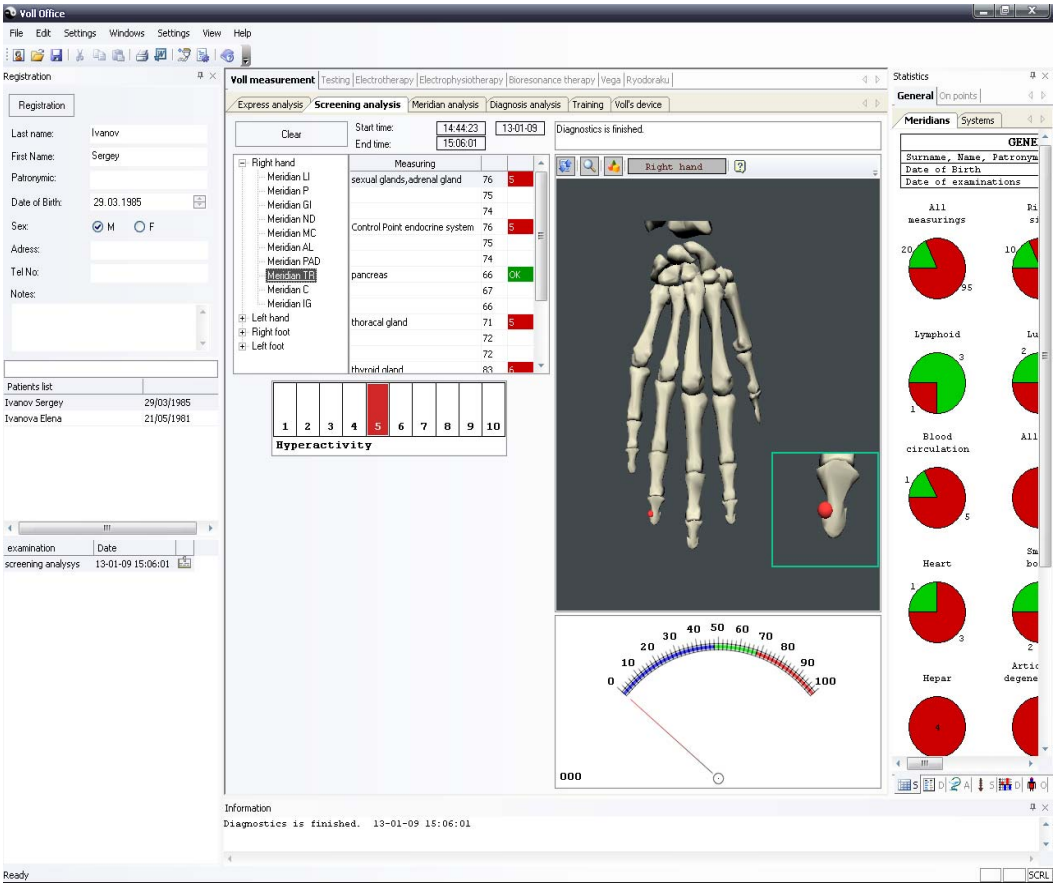
Besides, you can close any window if you are not using it at the moment. To do that, you should click on the little cross in the right corner at the top of the window. You can call the window again by clicking the **Windows** tab.

You can also make pop-up windows. To do that, you should click the Attach button near the cross when the window is opened (that button is shown in the picture as a pin):

When you place the cursor away from the window, it minimizes to a tab (as shown in the picture):

When you place the cursor over that tab, the window appears on the screen again.

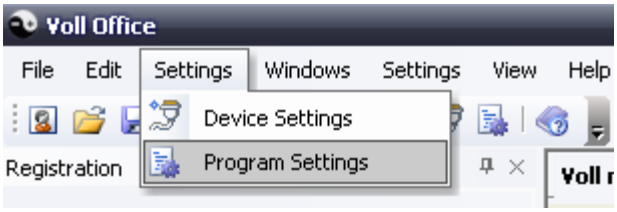
This is an example of multiple ways to arrange windows on the screen:



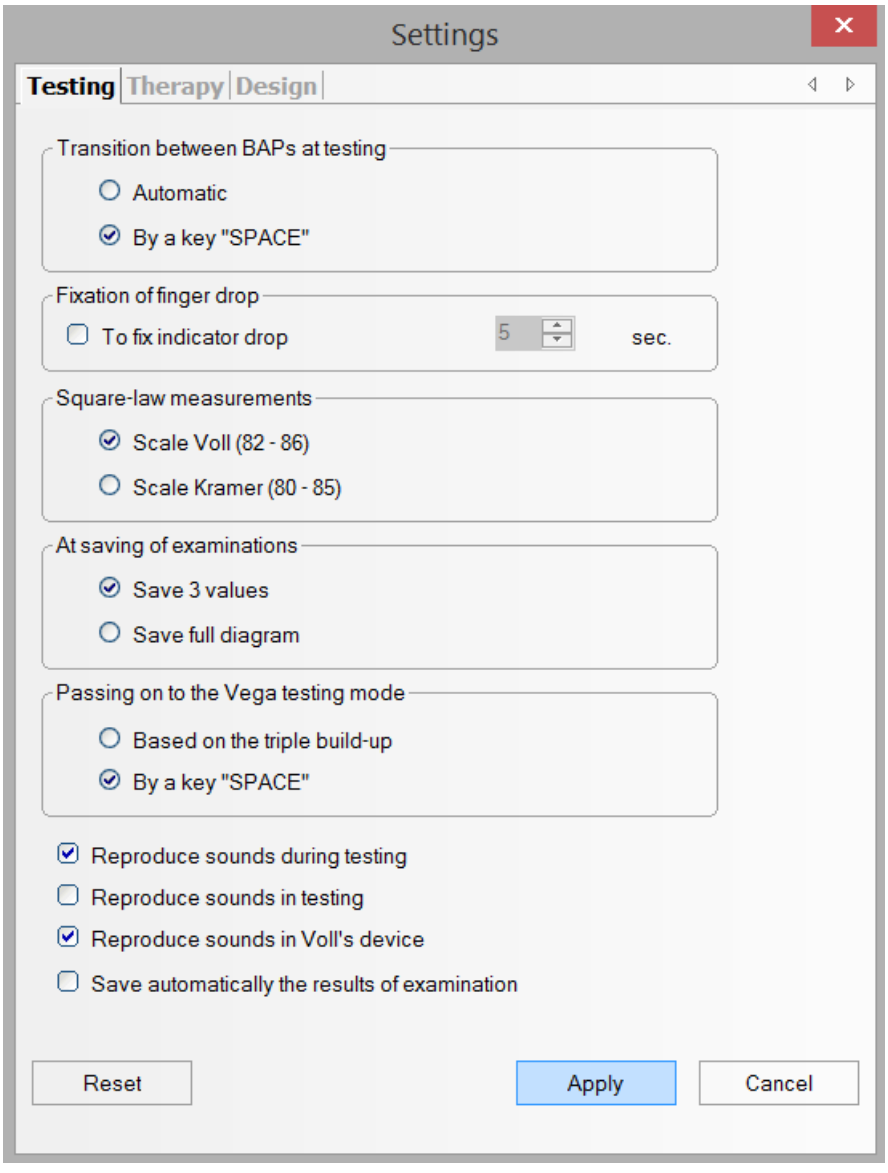
Preferable screen resolution is at least 1280x1024 for the most comfortable conditions of work.

Program Settings

For the setting of the program select the ***Program Settings*** in the menu:



In the opened dialog box you can set different modes of operation:



Transition between BAPs during testing

If the automatic transition to the next point is selected, the program moves to the next BAP upon completion of testing of the previous one automatically. If the transition by a Space bar is selected, the program moves to the next BAP when a user presses a Space bar.

Fixation of the indicator drop

If it is chosen, the program performs measurements in the express and meridian analysis for specified amount of seconds. This is intended to increase the duration of the measurements when the indicator drop is fixed. In that case, during measurements the window appears displaying the amount of seconds remaining before the end of the measurement. You should not take off the probe from the BAP during measurements until the window disappears.

The quadrant measurements

The program evaluates normal ranges in quadrant measurements either according to Voll (normal range is 82–86), or according to Kramer (normal range is 80–85).

At saving of examination results

It is possible to save the full diagram when you save results of examination to the database after testing. If you need not this, it is enough to save 3 values only. In testing of medicines the full diagram is always saved.

Switching to the Vega testing mode

You can select a classical variant after triple build-up or a faster option using the Space bar. For emulation of a Space bar pressing, you can connect the computer to the USB-pedal Single Foot Switch and therefore move between measurements or switch to the VEGA test mode, pressing the pedal by foot.

Reproduce sounds during testing

If you select this option, each measurement during testing will be accompanied by sound signal (an audio card and speakers are required).

Reproduce conductivity sounds during testing

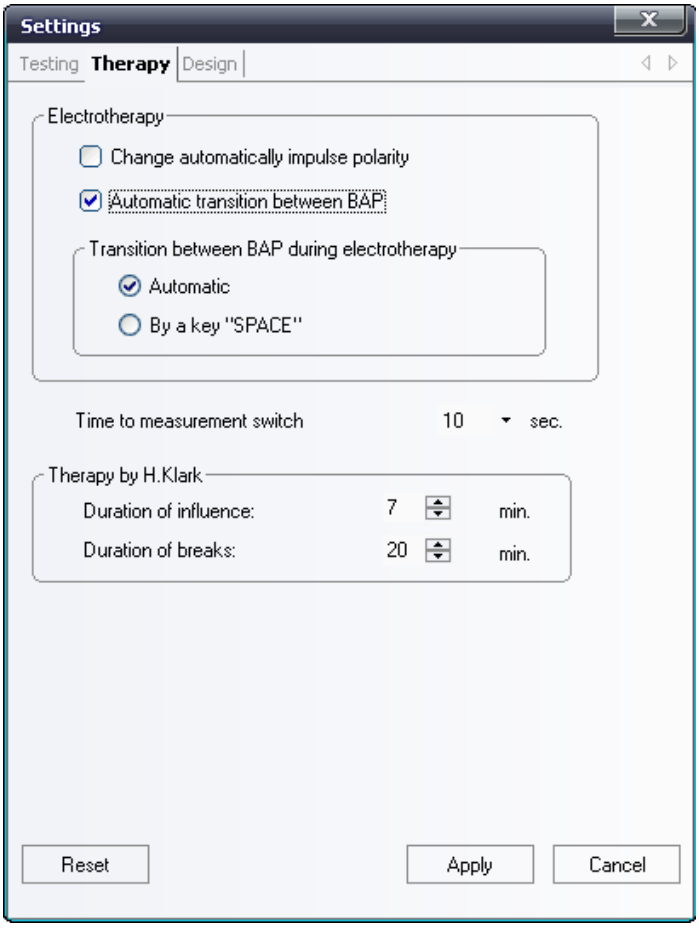
If you select this option, during Voll diagnostics, testing, VEGA test, etc., the program will send a signal to an audio device (an audio card and speakers are required) according to the current pointer position, while the sound frequency increases in direct proportion to the pointer deflection (conductivity decrease).

Reproduce sounds in Voll's device

If you select this option, during testing the program will send a signal to an audio device (an audio card and speakers are required) according to the current pointer position.

Always save examination results automatically

If you choose this option, the program will save the results for selected patient in the database upon completion of examination.



Change pulse polarity automatically

If you select this option, pulse polarity in output during electrotherapy by Voll will depend on the value of initial testing. If values of initial testing are decreased, the pulse will be negative. If they are increased, the pulse will be positive.

Automatic transition between BAPs

If you select the automatic transition to the next point, upon completion of Voll therapy for one BAP the program moves to the next point automatically. If the transition by a SPACE bar is chosen, the program moves to the next BAP when a user presses a SPACE bar.

Switching to diagnostics mode

This is a possibility to change measurement intervals (of autodiagnostics) during therapy.

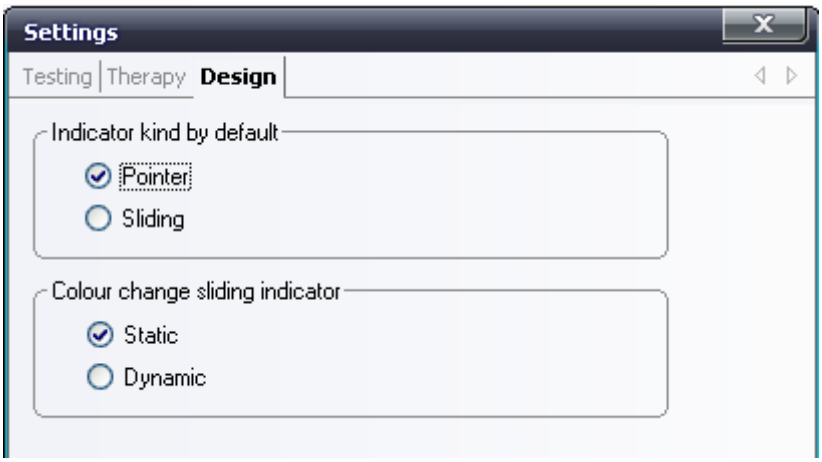
Clark therapy

You can change duration of therapy sessions and pauses in antiparasitic treatment by Clark.

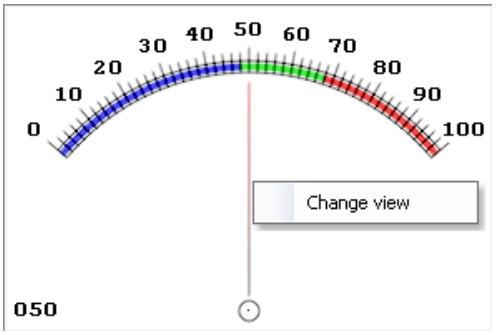
Offer compensative therapy after diagnostics

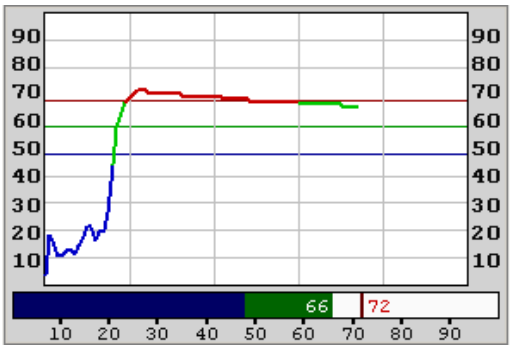
If you select this option, the program will offer to perform the compensative therapy after quadrant measurements (if the obtained results are not within the normal range).

View of the indicator icon by default



You can choose a pointer or a sliding (linear) indicator. It will appear by default in all dialog boxes. Besides, a user can change an indicator view in all dialog boxes, except **Testing** and **Vega test**, by clicking on it with the right mouse button. In that case, setting of the indicator view will be saved for this dialog box only.





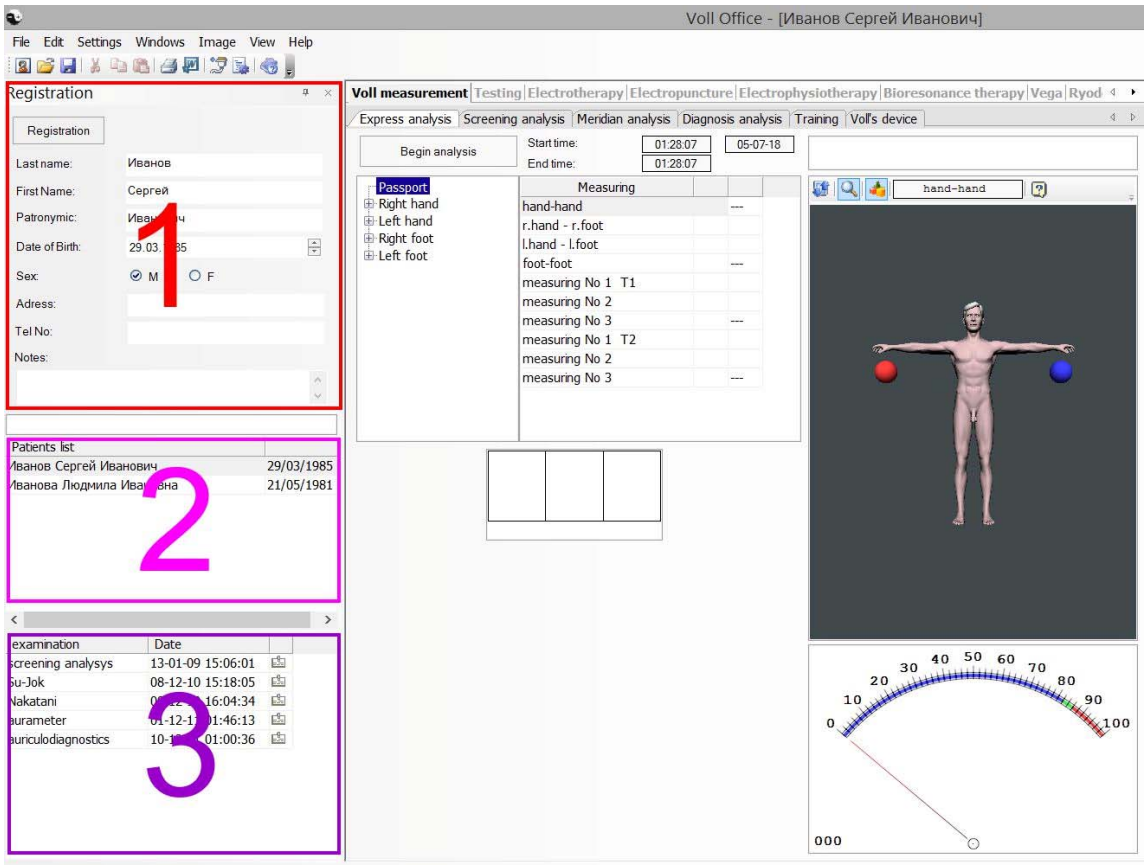
Change of the sliding indicator color

If a sliding indicator is chosen, this option allows changing of its view, when the values of conductivity change (the whole band will be colored).

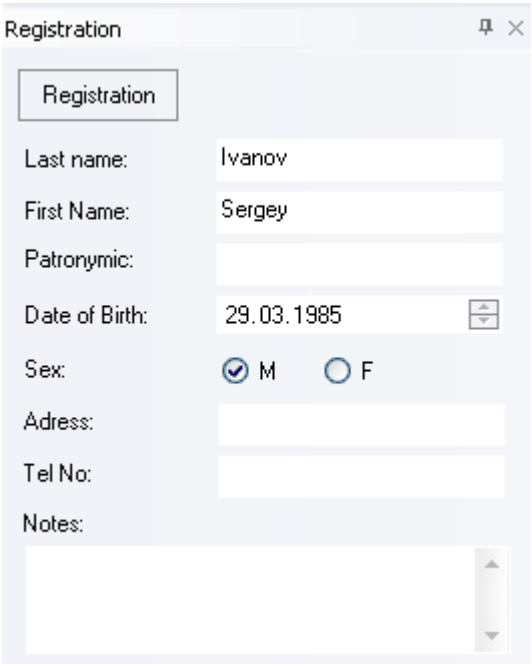
Registry

In this window the entries of patient visits and Voll analysis results are kept.

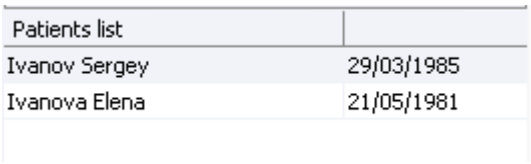
Registry window consists of three main parts:



1. The field used to enter patient parameters. You can enter surname, name, patronymic (middle name), date of birth, gender, address, phone number, and additional information about a new patient. To add the data to the database, click the ***Registration*** button. You can change the old data of patient. There will be a confirmation dialog to confirm your action. ***It is obligatory to enter surname, name, and date of birth***. On these data the patient is identified in the database.



2. *The patients list area*. In this area you can view the list of all patients and select one you need from the list.



3. The area of the examinations list of the selected patient. In this area you can view the list of all examinations that were made for the patient. When you select examination from the list, its results immediately display in corresponding examination windows as well as in windows of **diagnoses** и **diagrams**.

When you click the examination with the right mouse button, the menu is shown. In addition to standard options (such as delete/edit), you can perform **data export for the mathematical analysis**:

The data is exported in the format of the mathematical analysis system MathCad. It is possible to perform any mathematical transformation (Fourier, Laplace, Lorentz, etc.).

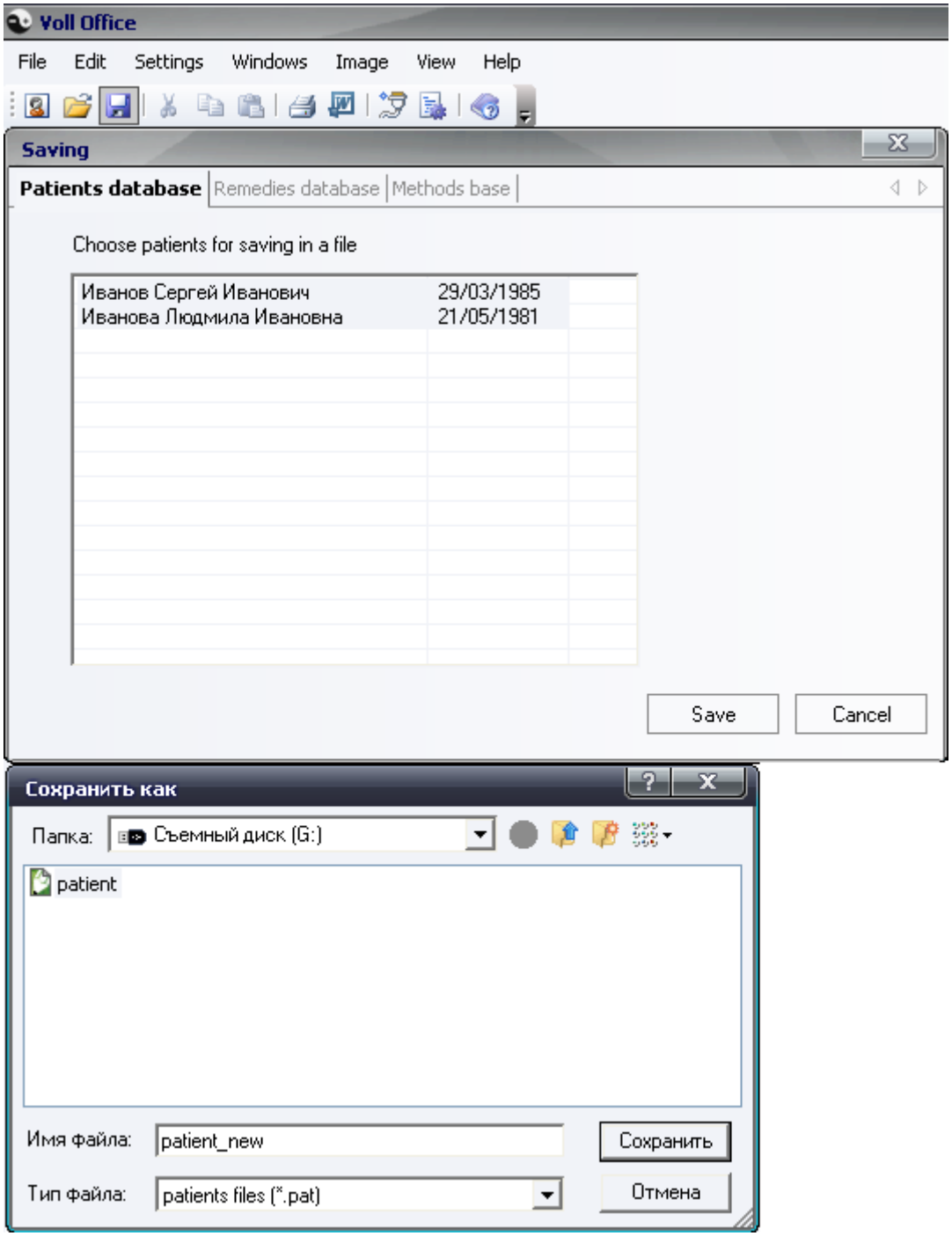
The comment on the examination is displayed in circular diagrams.

Addition and saving of patients database

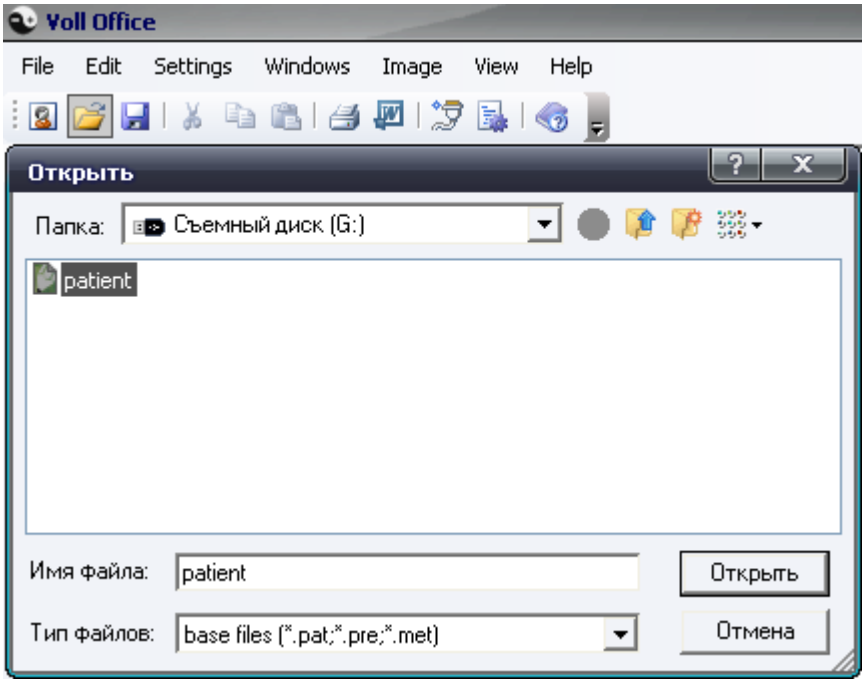
You can ***save*** the database using the main program menu: click **File** and **Save**.

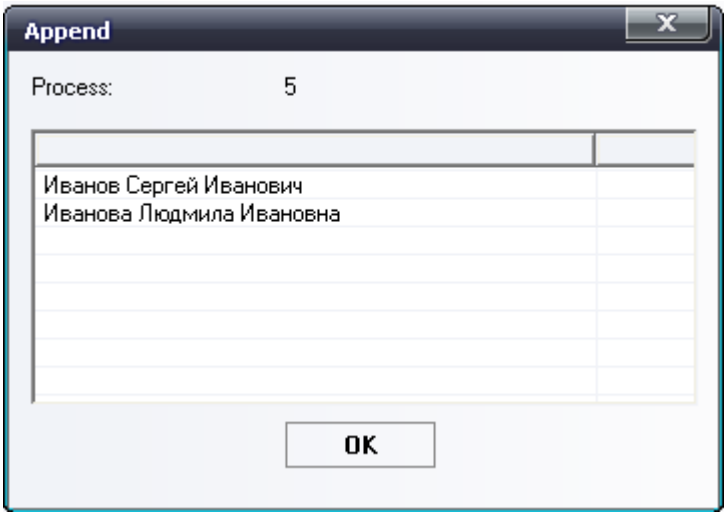
In the opened menu select the database and the item (for example, full name) that you are going to save. You can select all or some entries with a mouse. To do that, select entries you need, holding down the **Ctrl** button on the keyboard.

Upon completion of items selection, click the **Save** button, enter the file name and click the **Save** button one more time:



You can ***open*** (upload to the program) the patient and medicine database using the main program menu: click **File** and **Open**. In the opened menu select the disk with the database that you are going to upload, and select the file you need.





Entries will be added. Please note that any examination is considered as an entry for the patient database.

Addition and saving of files of digital medicine electronic copies and databases

After the complex installation, you can add files of digital drug electronic copies, patient databases, created techniques and profiles. You can add the files using menu ***Voll Office*** program only (by clicking **File** and **Open**), so you should do the following sequence of actions:

Run the ***Voll Office*** program.

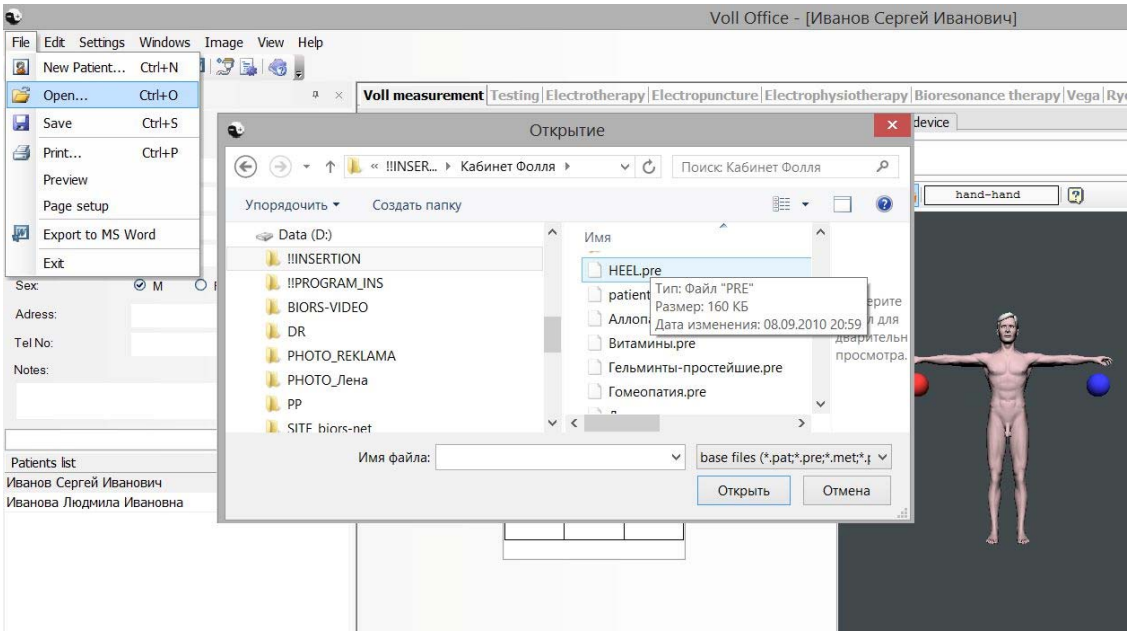
At the top of the program window click **File** and **Open** or press the combination of **Ctrl** and **O** keys.

In the opened menu find a directory where files were placed (for example, on the Voll Office CD or on the flash drive).

Select the file of patients (for instance, patient.pat), medicines (for example, HEEL.pre), or profiles and click the **Open** button.

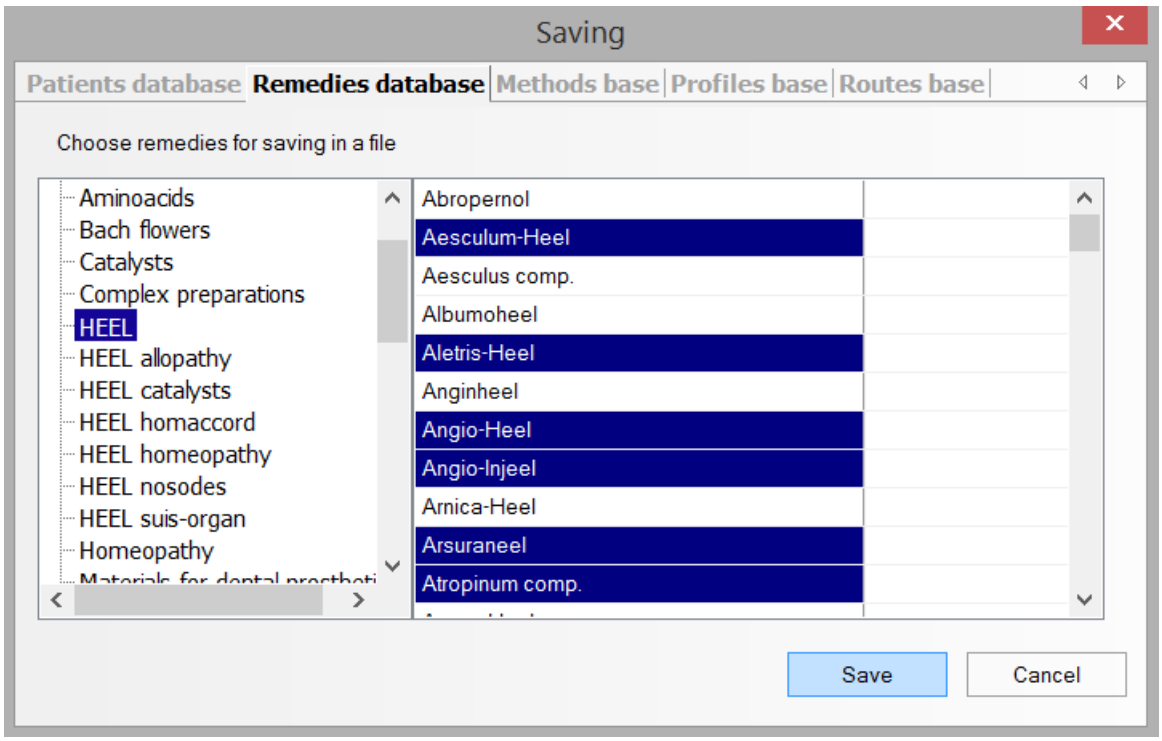
Wait for it to be added.

To add the next file repeat the procedure.



To save patient databases, created techniques and profiles, you should perform a similar procedure. You can save the files using menu ***Voll Office*** program (click **File** and **Save** or press the combination of **Ctrl** and **S** keys).

If you want to select several items in the list you are going to save, press the **Ctrl** button on the keyboard and, holding it down, select the desired entries. To select a block, you should press the **Shift** key and, holding it down, click with the left mouse button on initial and final lines of the list.

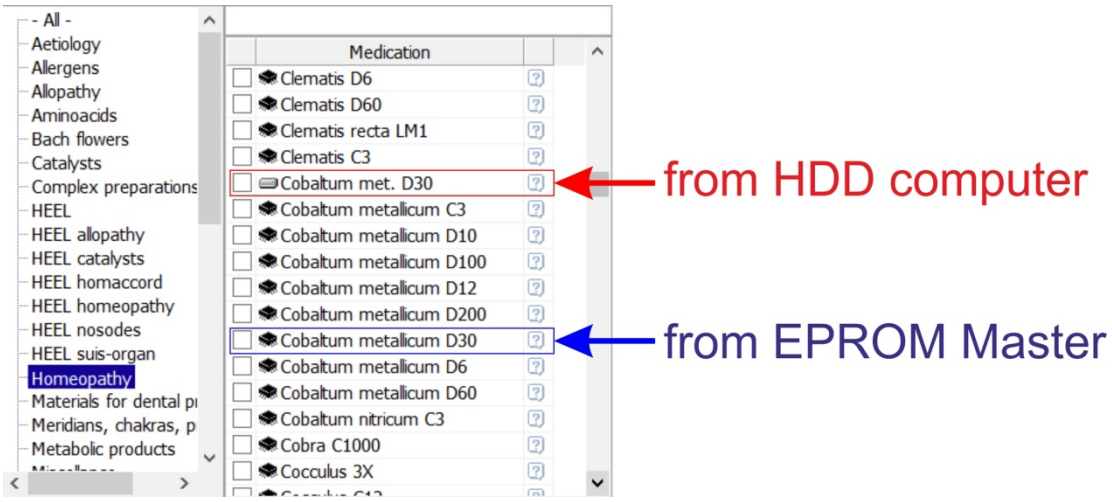


Then click the **Save** button, enter the file name, choose the directory to save it and click the **Save** button one more time.

Analog and digital medicine copies

The ***Master*** device includes the ROM with analog drug copies.

Those medicines are marked in the general list as microchip icons (a black "myriapod"). They will appear in lists after connection of the ***Master*** device to the computer:



If the certain potency for homeopathic remedies is not indicated, it means the remedy is recorded using the classic potency **C3**. Potency **M1 = C1000**. Potency for organotherapeutic drugs is **D6**.

It should be noted, that drug efficacy from the ROM is higher because there is an analog drug copy in the ROM, while on the PC hard disk its digital copy is saved, which leads to some loss of the information precision.

Information

In this window the information about current program actions and errors is displayed. It is not advisable for inexperienced users to close this window because the information it contains facilitates understanding of program actions. The experienced users, knowing all details of program operations, can close this window.

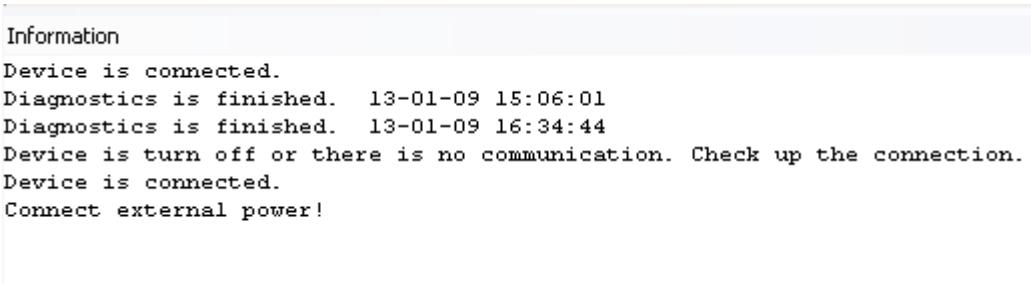
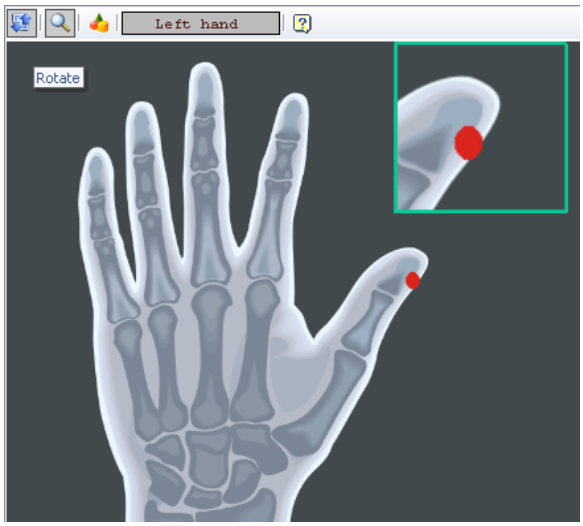


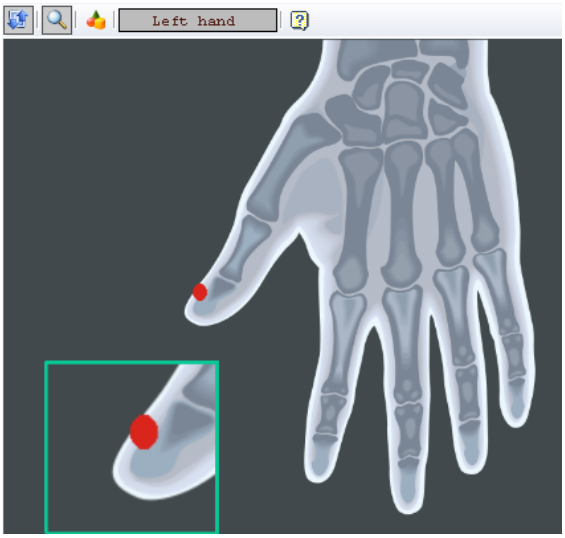
Image display settings

1. **Rotate image (Rotate)**

This feature rotates the image of a hand 180 degrees. It allows changing patient hand position as you need.

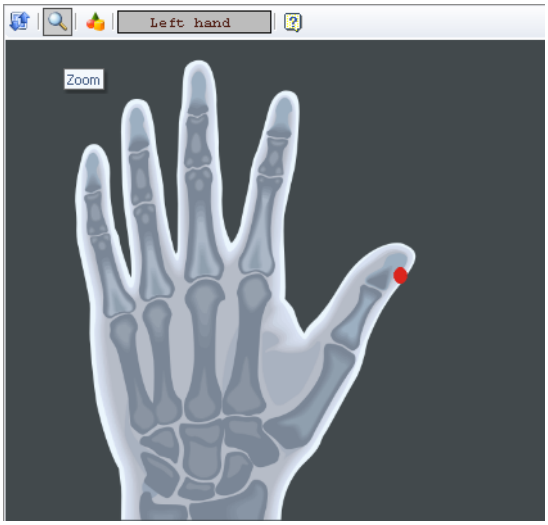
You can also rotate 3D image as you want using a mouse. To do that, place the cursor over the image, then click and hold the right mouse button. When you move the mouse, 3D image will rotate. It can be useful to specify the localization of the BAP on a bone.

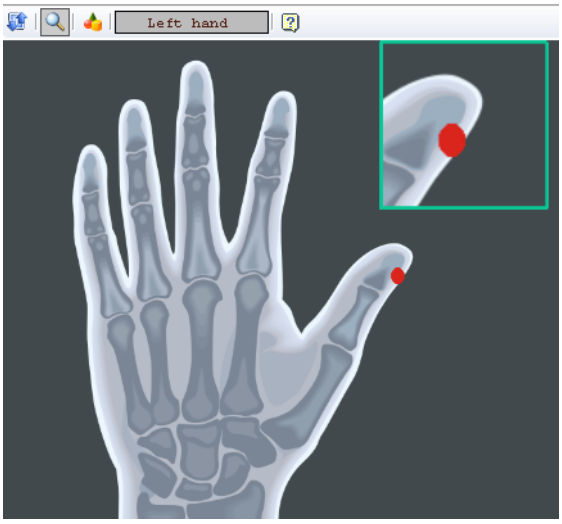




2. **Use zoom (Zoom)**

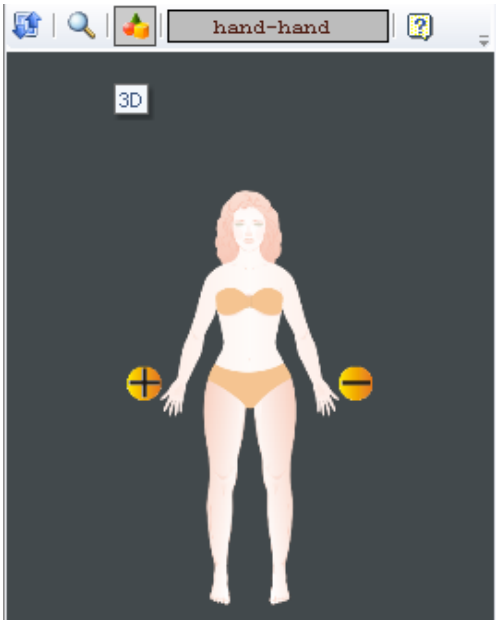
This option enables to zoom the certain BAP on a finger.

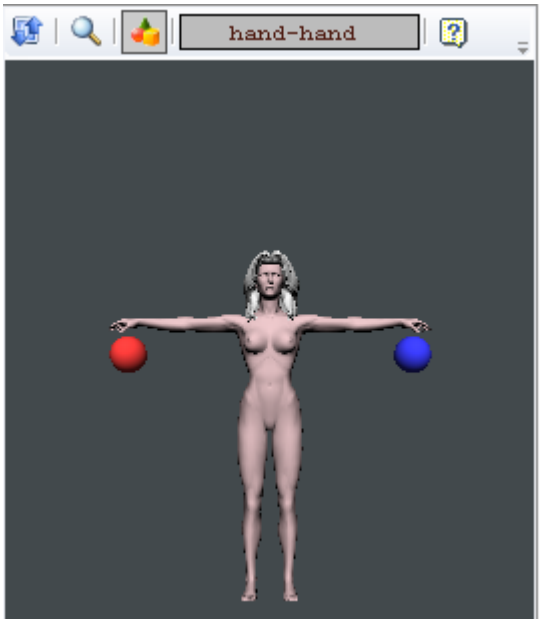




3. 3D image

Function of switching to three-dimensional view:





VOLL DIAGNOSTICS

Main principles and the preparations for the electropuncture measurements

Preparation of the patient According to Voll R., the patient must prepare for the examination as follows: stop taking drugs (it is preferable 48 hours before the examination) as well as remove all jewelry, watches, glasses, etc. in the exam room. The long-term use of pharmacotherapeutic drugs for chronic diseases does not distort results of diagnostic tests, so discontinuation is not necessary. It is desirable to go for the examination on an empty stomach. Any alcohol intake is strictly prohibited. A patient should wear clothes made of natural fabric, not creating static electricity. It is advisable to take all metal objects off the body (keys, watches, rings, brooches, earrings, piercing jewelry, etc.). The examined person may also leave these things nearby to perform the follow-up compatibility test. It is desirable that women remove IUD, manicure-related and pedicure-related products, cosmetics, etc. the day before the examination. It i necessary to put away and turn off all devices that generate electromagnetic fields (paging device or mobile phone).

Workplace requirements During electropuncture measurements, electrical appliances in the room must be turned off. This relates to:

- TV set- cell phone, radio telephone, paging device- broadcasting, especially FM or AM stations- X-ray apparatus - ultrasound machine.

If for the artificial lighting the daylight fluorescent lamps are used, they should be placed at a distance of not less than 1.5 m to the examined person (the distance between filament lamps and the examined person should be at least 0.5 m). The Central Processing Unit and monitor should be placed as far away as possible from the location of the measurements. Artificial floor coverings (such as PVC covering or carpeting) in the room should be avoided due to the possible static build-up.

These materials do not have any adverse effect:

- linoleum coverings,- wood coverings,- stone flooring.

Power supply lines of 220 V should be placed not closer than 30 cm to a patient. It is advisable to ground big metal screens and metal handles.

The preparation of a patient

The electropuncture diagnostics by the doctor Voll R. requires that patient's clothes and underwear are made of cotton. It is best to wear a white non-starched lab coat on bare skin. It is possible to put rings, necklaces, etc. near to the examined person in order to perform the compatibility test. It is desirable that women remove IUD, manicure-related and pedicure-related products, cosmetics, etc. the day before the examination.

Any tight clothing should be unbutton. It is necessary to avoid alcohol and coffee intake the day before the examination. This also relates to medicines, except for the vital ones. The

patient can bring his/her current medicines to perform the compatibility test (in order to know if the drugs that a patient takes are benefits or hazards).

The conducting of the quadrantic measurements

To conduct the quadrantic measurements for determination of general energy balance, you should connect red and black plugs to cylindrical electrodes and then, with respect to polarity, put them into the right or left hand (put them on the right or left foot respectively). To perform the quadrantic measurements on feet, the plate (footpad) electrodes are used. In their absence, you can put a cylindrical electrode on the foot, placing it under toe tips. It is necessary to wet dry palms or feet with water or wrap the above-mentioned electrodes in 1–2 layers of gauze, wet with water.

Normal range is 82–86.

Interpretation of the quadrantic measurement results

82-86 — normal range;

87–90 — energy excitation;

91–95 — condition of severe excitation, that is required to be reduced;

higher than 95 — required to be reduced, especially in case of the forthcoming intense physical activity or surgical intervention (it is advisable to send positive pulses in the **Electrotherapy** mode);

Less than 80 — the condition of low level of energy, that is required “charging” (it is advisable to send negative pulses in the **Electrotherapy** mode).

Thus, conducting the quadrantic measurements allows getting very valuable information about patient energy balance. It is possible to locate the body area having energy imbalance (obtained values are less than 82) or inflammatory process (obtained values are higher than 86). Possible errors when conducting the quadrantic measurements:

a) No readings on two quadrants. Check whether the electrode is connected properly. If that's not the problem, it can be a cable defect.

b) The values are too low or too high. Check skin moisture of the patient. If the skin is too moist, you should dry it. In case of skin dryness you should moisten it.

Special attention needs to be given to a difference in values that exceeds 10 increments (markings). Hence, in diabetes mellitus the energy of the body right side (pancreas — right hand and foot) can be depleted.

Very high indicator values can be seen, for example, in hemicrania or thrombophlebitis.

Warning. ***It is advisable to carry out the quadrantic measurements before the acupuncture points measurement. If the obtained values are less than 82 or higher than 86, it is desirable to move to Voll electrotherapy menu and "roll-in" or "roll-out" the energy (i. e. you should perform general quadrantic electrotherapy). Otherwise, further diagnosis will not be entirely accurate.***

BAP search and measurement

Main features about BAP measurements

When performing electropuncture measurements, you should connect black plug to cylindrical electrode and put it into the patient hand. Connect red plug to electrode probe and press the point electrode with slits on the end of the electrode probe to the biologically active point (BAP) with constant pressure of approximately 250-300 N (the pressure on the BAP should not exceed 300 g). You should occasionally wet the tip of the electrode probe (having slits) using a cup filled with some cotton-wool that is wet with pure tap water or saline solution.

The ***Master*** device should be calibrated at least once a month. You can do it from the **Device Settings** program menu. The calibration is performed when both electrodes (with red and black plugs) are closed.

Work sequence

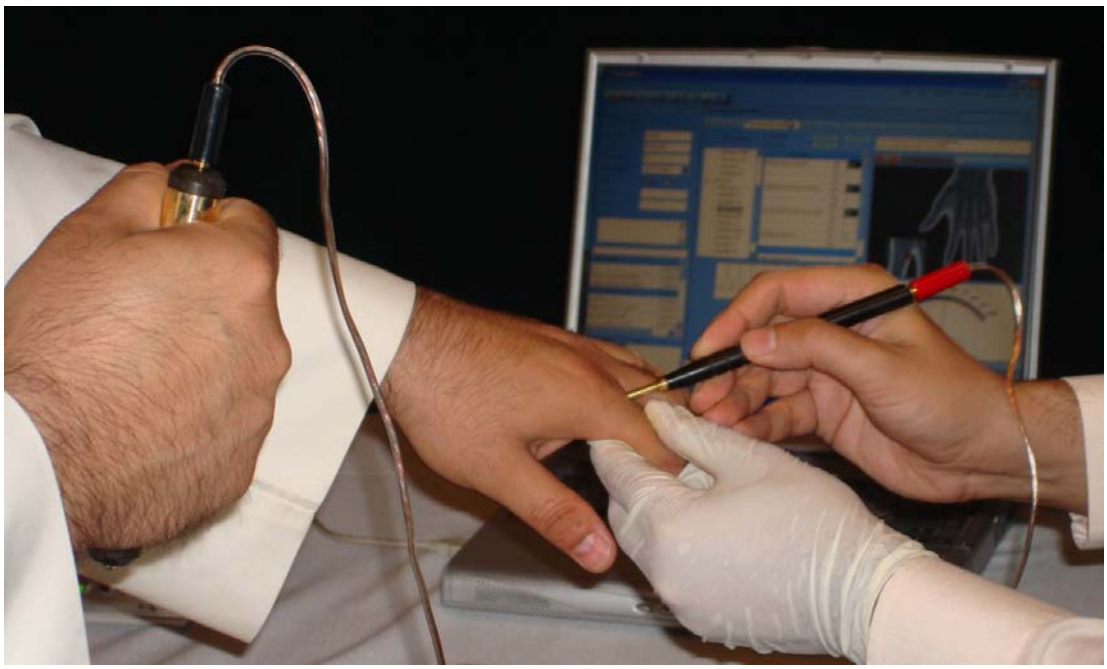
1. A patient takes the cylindrical electrode in the left hand and places the right hand (or the right foot) on a horizontal smooth surface (for example, on the table). A doctor may hold the patient's palm with his/her free hand, but in that case he/she should wear a rubber or cotton glove.

2. A doctor determines the measurement point projection on the right hand using anatomical landmarks and embedded acupuncture atlas.

3. A doctor places active measuring electrode on a BAP projection, and gradually increases the pressure on the electrode, monitoring on the scale of the screen until reaching the measurement plateau (when pressure increase is not accompanied by value increase).

4. Perform three measurements automatically no taking the electrode probe off. The duration of the entire measurement should not be less than 5–10 seconds when the value is steady-state. If the value decreases ("indicator drop"), the measurement continues until the value is stabilized.

5. After measurement on the right hand, the patient takes the cylindrical electrode into the right hand, and the measurements are performed on the left (contralateral) hand.



6. If the measurements are performed on feet, the passive electrode is placed into the ipsilateral hand (on the same side of the body).

7. During examination a patient should hold the cylindrical electrode in hand even if the measurement process interrupts.

With regard to most measurement points, located on phalanges of fingers and toes, the active electrode is placed at an angle of 45° to the skin surface. In other cases the electrode is placed perpendicular to the skin surface.

To minimize the energy impact during electropuncture measurements, a doctor should touch a patient as little as possible.

The skin in the area of measurement point should not be too moist or too dry. Only an extensive experience can help to determine an appropriate degree of skin moisture. It is impossible to express an appropriate degree of skin moisture as a value. In case of excessive sweat in the BAP area it is necessary to wipe the skin with alcohol solution.

BAP search

BAP diameter is approximately up to 6 mm, so you should count 2–3 mm for the point area itself and 2 mm more for so-called areal zone. Normally BAP is situated in a bone dimple. To obtain accurate values, it is necessary to put the point electrode in the center of a point.

BAPs are located on energy channels (meridians), mainly in the deep skin layers, close to periosteum. To find the BAP, put the point electrode on the skin vertically in the BAP area (according to embedded anatomical atlas) and move it superficially in circular motion, without changing the force of pressure.

When you see the highest deviation of the indicator, this is the BAP.

When the probe is on the BAP, you should immediately and confidently increase pressure. You should not hesitate, because slow pressure increase leads to too low measurement value. The determination process of correct measurement point value involves 4 phases.

Phase 1 — a rapid build-up of pressure on BAP with a probe until the deviation of the indicator clearly slows down.
Phase 2 — the pressure on the probe should be decreased, adapting to the indicator rising.
Phase 3 — obtained value is read if deviation of the indicator does not change with increase of pressure on the probe.
Phase 4 — it is necessary to keep pressure and watch the indicator, whether “indicator drop” occurs (note the drop value).

At first, a medical beginner should learn to find end points of meridians (the very first points in express diagnostics), located in angles of finger and toe nail beds, on first phalanges. These points are relatively large and lay superficially under the skin. You can easily localize them topographic-anatomically. You can perform self-training.

For the acquisition of skills, the **Voll measurement** menu of the program complex includes the **Training** section. It clearly demonstrates the pressure level and diagnosis time in the graph. Besides, the **Voll's device** section includes the acoustic point probe. When the probe passes across the BAP, a frequency of sounds increases. Experience has shown that sound assistance is useful only at the start of the training. For experienced users the background sound while working is an irritative agent, so sounds during diagnostic process are turned off in the main menu.

The interpretation of BAP measurement results

Scale readings
90–100 Total inflammation
81–90 Local inflammation
66–80 Toxic load
51–65 The excitation is within normal parameters
50 Normal value
40–49 Initial clinical signs of degeneration (hepatosis, nephrosis, myocardial sclerosis, fibrosis, cirrhosis, arthrosis)
30–39 Progressive degeneration
20–29 Severe degeneration
Less than 20 The final stage of degeneration (atrophy, ankylosis, blastosis, carcinomatosis)
Less than 10 Antemortem condition

Doctor Voll R. developed empirically the scale described above. It enables to determine the energy state of BAP (related organ). Besides, it is possible to draw diagnostic conclusion, analyzing values in BAP and quadrant measurements.

Doctor Voll's technique allows using for the diagnostics and electrotherapy the points, which were known in Ancient China, 4–5 thousands years ago. Besides, Dr. Voll has opened new measurement points on meridians which are in direct connection with certain organs, tissues and systems.

The diagnostic values, obtained in BAP measurements, become crucial for the patient and the doctor. First of all, these values enable to determine either absolute health, or disease, or onset of a disease (latent stage). The earlier the treatment starts, the earlier it can be possible to prevent its further development. As a last resort, we can warn the patient that he/she has a disease or liability to certain diseases.

In other words, using electropuncture diagnostics by Dr. Voll, a doctor is able not only to determine whether or not a patient has a disease, but also a predisposition to diseases. That is why an annual check-up (it is advisable twice a year) with use of electropuncture diagnostics is necessary to prevent almost any disease.

The phenomenon of "indicator drop"

Special attention needs to be given to the "indicator drop". To watch the phenomenon of "indicator drop", invariable pressure on the probe is necessary. This phenomenon mainly matters when values are higher than 50.

It is known already, that the normal range of BAP values is 40–65 units of the scale. Higher values indicate inflammation, lower values point to degeneration. However, degenerative processes in organs and tissues are often accompanied by inflammation. This may manifest in high values with "indicator drop". For example, the pointer goes down to 50 from 75 (initial value).

Therefore, emphasis should be placed on the phenomenon of "indicator drop".

To obtain the correct and reproducible value, it is important to carry out the following operations:

1. The point search

2. The proper pressure on the probe

3. The direction of the pressure on the probe

When with proper BAP search the acupuncture point center is found, you should gentle but fast push the probe end (placed at an angle of 45º to the skin surface) into the point on the line of channel, making a small rotation.

You have reached the correct level of pressure on the probe. Just keep pressure at a constant level and do not increase it by no means. In that case only it is possible to watch a body reaction, expressed as an "indicator drop".

The influence of age. Based on that BAPs in young persons are measured at normal pressure, it is not difficult to ascertain the following: For children it is sufficient to touch the point by tip of measuring electrode (or by special more thin electrode for children), because their skin is very thin. With the age, the pressure must be heavier because skin is getting thicker and

less sensitive. Examination of older persons requires a significant pressure sometimes, in order to reach BAPs located in the deep layers of skin.

Indications and contraindications

Indications

Using of the Voll R. technique is intended for:

1) screening integral functional assessment of body organs and systems for further, if necessary, detailed examination using direct diagnostic techniques;

2) for the adjustment of homeopathic medicines (HM) selection, their potencies, dosage, individual compatibility (when HM are prescribed together) and treatment efficacy evaluation;

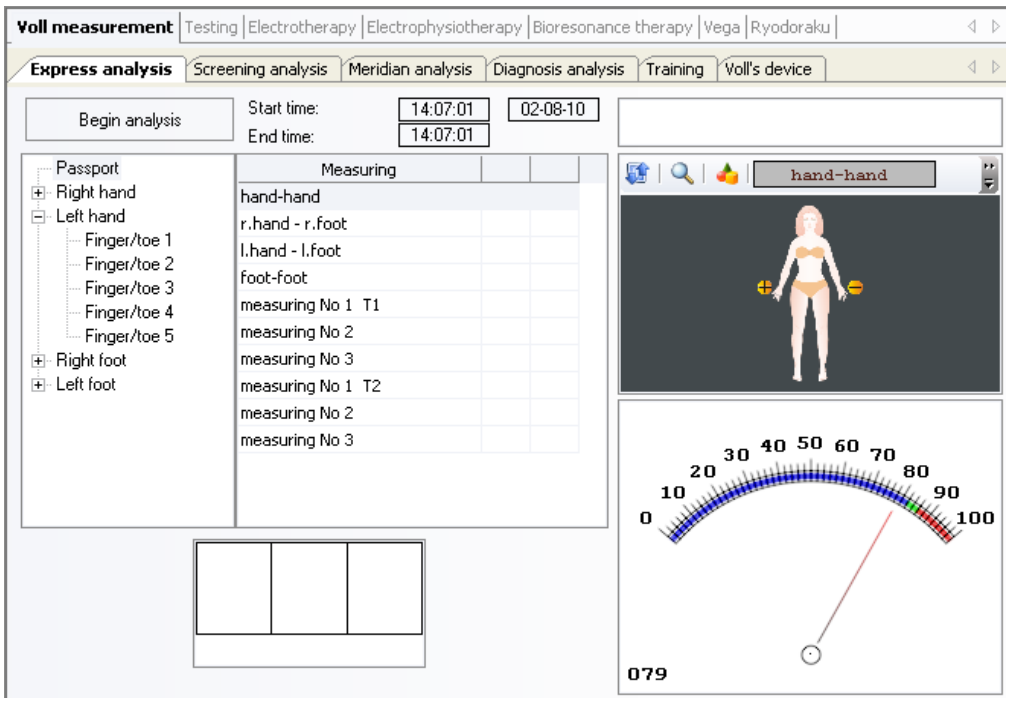
3) for the assessment of meridian systems state, that are used in traditional Chinese medicine, in order to compile an individual acupunctural recipe for reflex therapy and treatment efficacy evaluation.

Contraindications

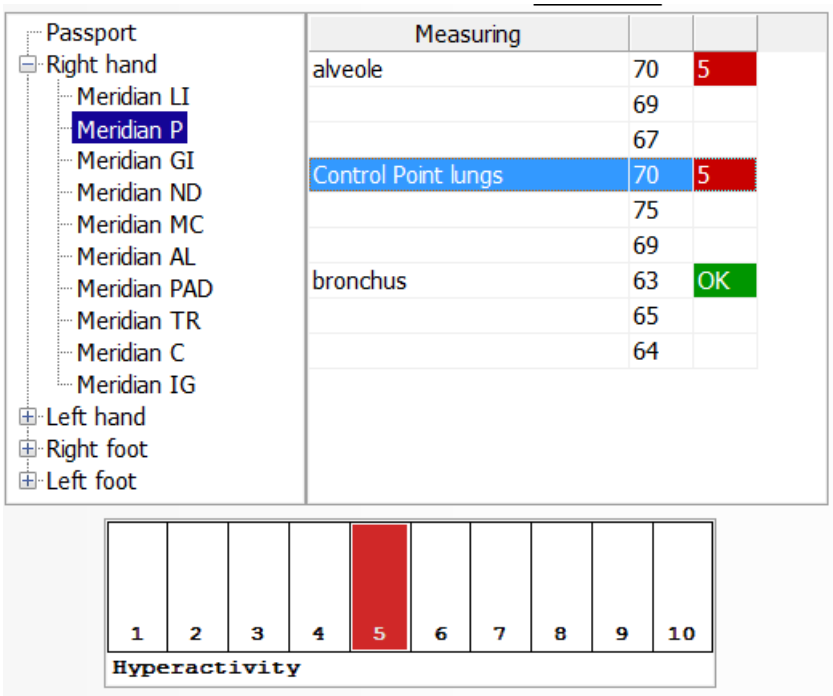
Voll electropuncture diagnostics is contraindicated for patients having heart pacemakers due to the possibility of their failure, as well as for patients having skin damage or diseases in areas of measurement points. The idiosyncrasy to electric current and mechanical pressure can be considered as relative contraindications.

Conducting of measurements

To start examination, click the ***Begin analysis*** button. The device switches to the diagnostic mode, so you can perform measurements, following the instructions and images on the screen. To end analysis, click the ***Finish analysis*** button. To clear the analysis results, click the ***Clear*** button. In the right window the image will be displayed. It will show either BAP that you need at the moment, or directions of measurements during quadrant measurements, as well as a pointer-type indicator displaying the current measuring value.



After measurements the point factor will be displayed in graphic form in a histogram:



Measurement order for quadrant leads

o Connect plugs of device wires to cylindrical electrodes. During examination on feet it is possible to use plate footpad electrodes or, if not available, a patient can step on the cylindrical electrode by bare foot.

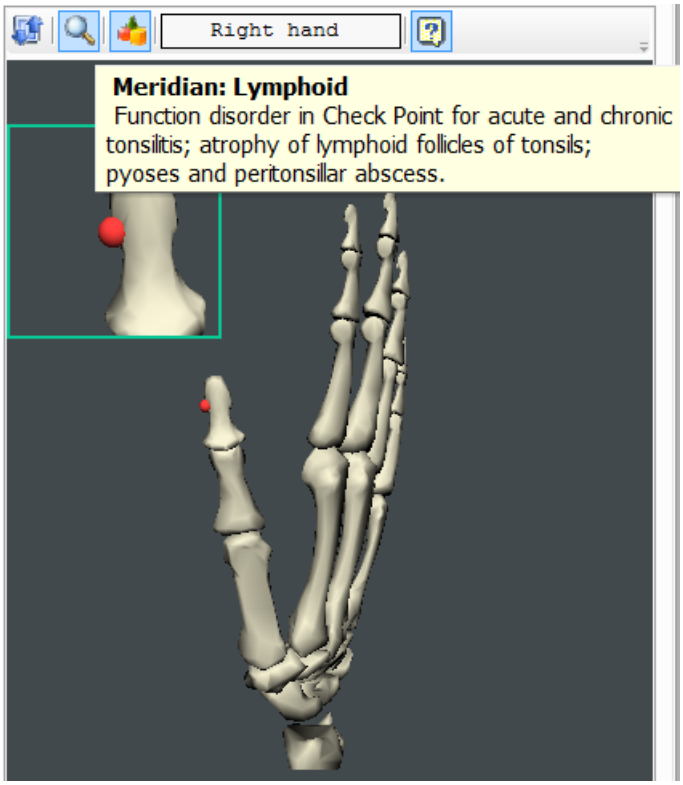
o Wet the cylinders a bit.

- Take cylindrical electrodes into the hands with respect to polarity (as shown in the image). The cylindrical electrode connected to the red plug is "+", and another one connected to the black plug is "–".
- Click the ***Begin analysis*** button.
- If in program settings the automatic measurement is selected, the program performs measurements automatically after input data alignment. If in program settings the measurement by a Space bar is chosen, the program performs measurements when a user presses Space bar.
- The current factor will display in histogram, and you can move to next measurements.

BAP measurement order:

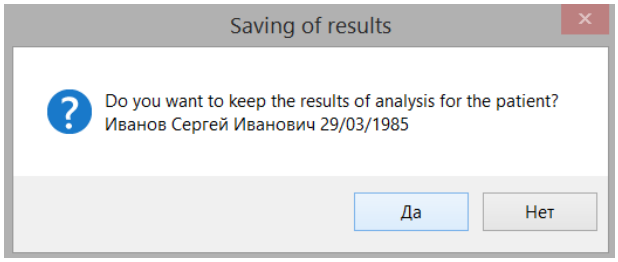
- Connect the red plug of device wire to the ebonite electrode probe. Connect the black plug of device wire to the cylindrical electrode.
- Click the ***Begin analysis*** button.
- Wet a tip of the probe electrode a bit.
- Press a tip of the probe electrode to the BAP.
- Test the point shown in the image. The program will perform three measurements consecutively, do not take the electrode off the BAP during all of them. If the measurements are performed correctly, the point factor will be displayed in a histogram. Otherwise, the program will repeat the measurements for the BAP.
- Take the electrode off the BAP. If in program settings the automatic transition to the next point is selected, the program moves to the next BAP automatically. If in program settings the transition by a Space bar is selected, the program moves to the next BAP when a user presses a Space bar.
- Upon completion of the last BAP measurement, the program will end the analysis automatically and the results will be displayed in corresponding windows.

You can see the help for BAP, by clicking the question mark above the image:



Saving of diagnostic findings:

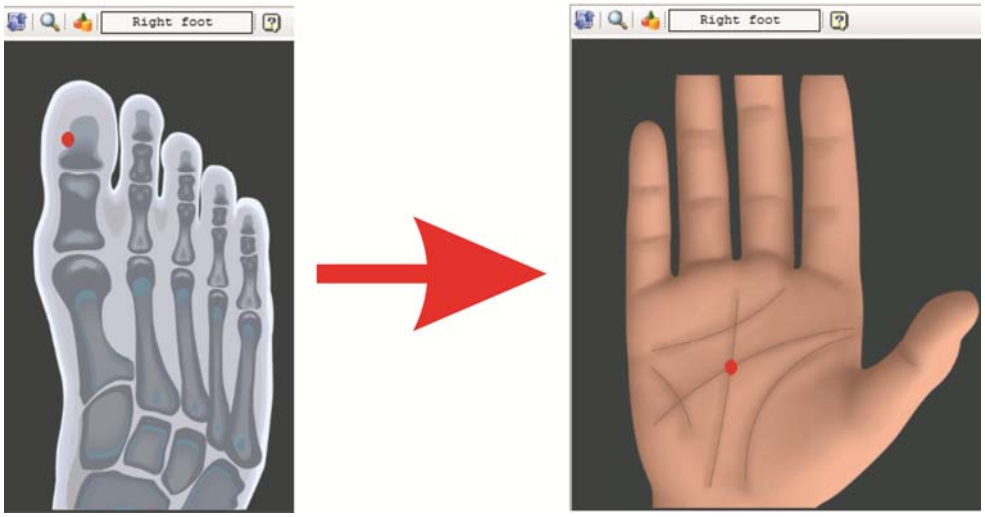
If the patient has been registered, the program will offer to save the diagnostics results after the examination.



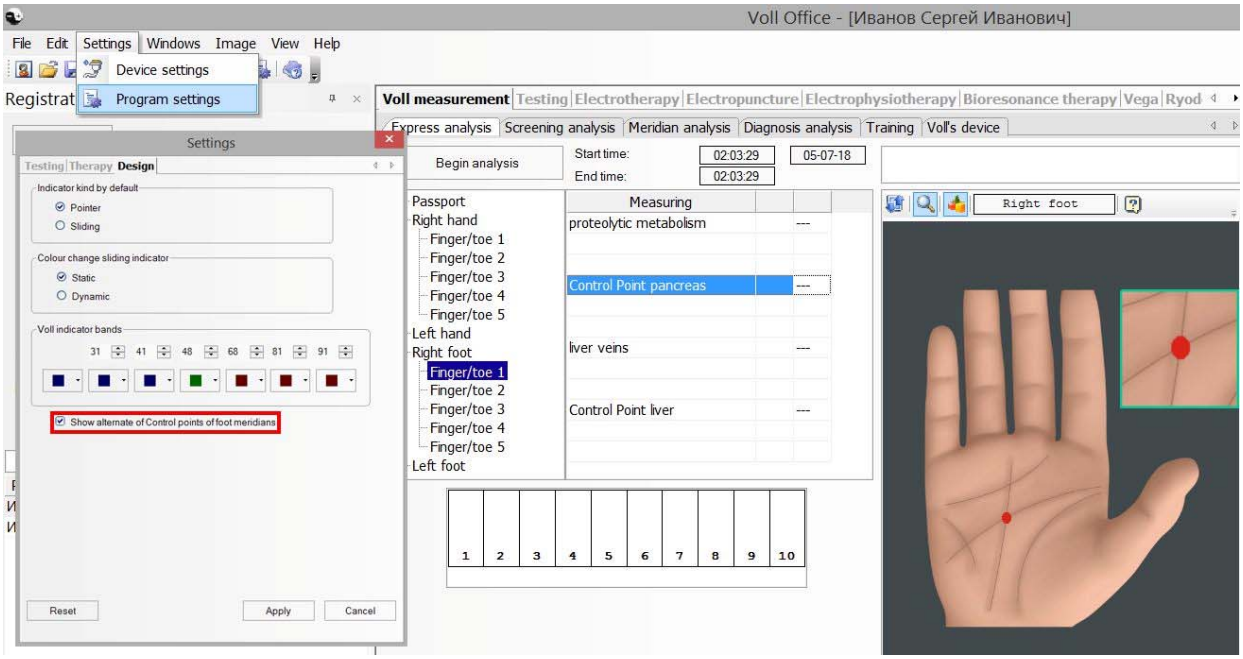
Upon completion of measurements, the results are recorded to the database of patient examinations.

Projections of foot BAPs on hands

In program settings you can select **Show ultimate control points of foot meridians** on hands and so measure a part of foot meridian BAPs on hands.

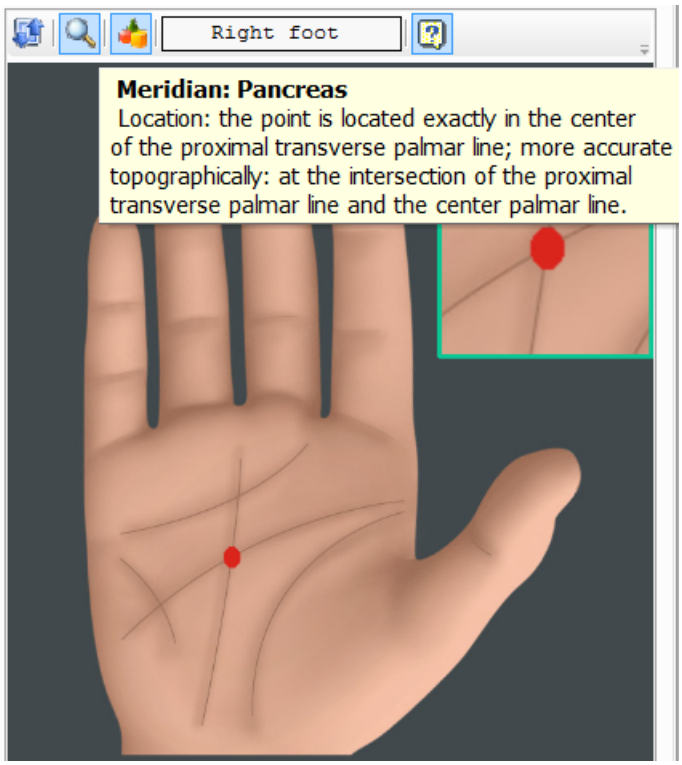


The main difference between these and Voll's BAPs is they are localize not in bone dimples (as according to Voll's technique), but at the intersection of dermal ridges on palms. To set displaying the data of points, select **Settings** menu, then **Program Settings** and after that in the opened menu select the **Design** tab. Tick the **Show ultimate control points of foot meridians** line. After that click the **Apply** button.

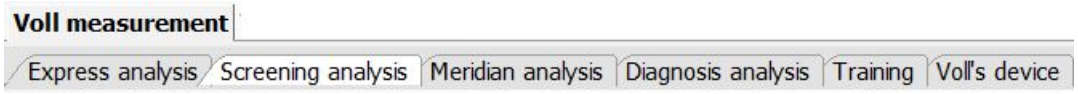


Location and description of CMP doublers of CMP foot meridians on palms

You can see them, place the mouse cursor over the question mark above the image:



Voll diagnostics options



Express analysis

This window is for Voll's express analysis on end points and CMP (control measuring points), as well as for measurements by quadrant leads. This examination helps simply and quickly determine BAPs and meridians of concern for further detailed diagnosis.

Screening analysis

This window is for Voll's screening analysis on meridian points, recommended by the Ministry of Health of the Russian Federation.

Meridian analysis

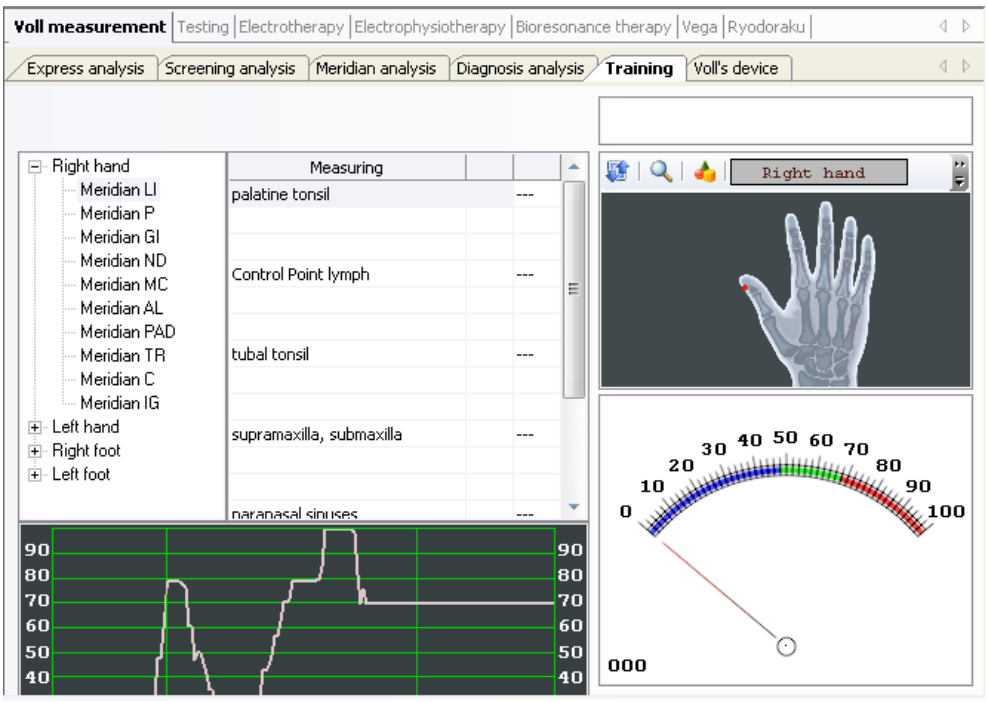
This window is for Voll's meridian analysis (on all meridian points). This is the most complete examination.

Diagnosis analysis

This window is for the re-evaluation and clearer diagnosis of initial conclusions after meridian, expressor screening analysis.

Training for doctors

This window is for training for a doctor. It helps to perform Voll's measurements on all meridian points. The main task is to press on a point with constant pressure of 300 N (300 g) and, holding the electrode still, achieve the emergence of a 'plateau' in the graph during 3–4 seconds.



Voll's device

This window is for those users who are used to work with a classical Voll's pointer indicator. Besides, this window is intended for measurements of "spontaneous" unlisted BAPs. If you select the **classical device**, it will work as a pointer indicator with accompanying sound characterising the pressing force on the electrode (if an audio card is available). If the **mode of three measurements** is selected, the program will perform 3 measurements sequentially, as in **Ошибка! Недопустимый объект гиперссылки.** or **Ошибка! Недопустимый объект гиперссылки.** analysis. Upon completion of measurements, the point factor will be displayed in graphic form in a histogram and the values will be included in reports.

THE MEDICINE TESTING

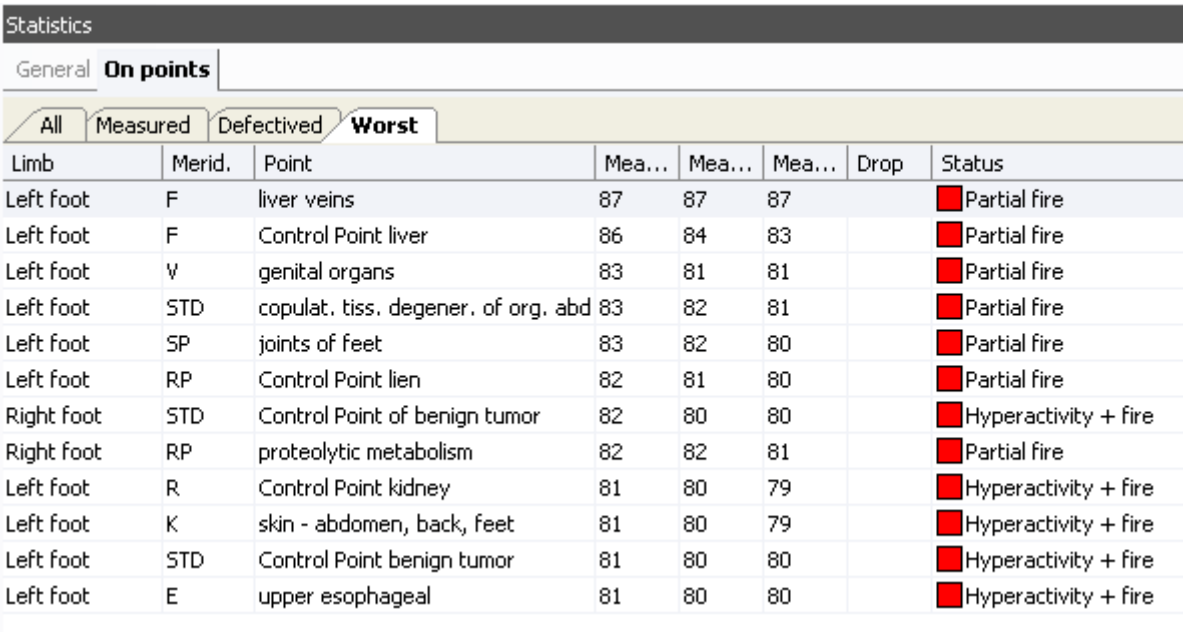
General information

Dr. Reinhard Voll found that medicines and other substances (jewellery, nail make-up, cosmetics, clothes, food, etc.), contacting with human body, influence on BAP measurement results. That discovery marked the beginning of a new concept in electropuncture named medicine testing. Dr. Morrel tried to explain physics of medicine testing and found the influence of tested medicines on erythrocyte sedimentation in numerous experiments. Sedimentation improved by 20–40% once a suitable medicine was administered to the human body.

Instrumental medicine testing is performed by device which is round cup on remote third electrode. Quantative and qualitative medicine dosing is considered completed if unsatisfactory BAPs values (more than 65 or less than 40) reduce to normal value (50) and "indicator drop" value decreases.

The medicine testing is performed by device which is a round cup on the remote third electrode. Quantitative and qualitative medicine dosing is considered complete if it leads to improving of unsatisfactory BAPs values (more than 65 or less than 40) to normal value (50) and "indicator drop" value lowering.

Usually testing is performed on the worst BAPs, determined during Voll's diagnostics (for example, after express analysis), or on corresponding (homonymous) BAPs with tested medicine (for instance, when testing liver medicines, it is better to use liver meridian BAPs). You should click **Reports** menu, then **Statistics**, **On point**, **Worst**, and then select the suitable BAP. It is possible to test several BAPs sequentially, it will improve the accuracy of assessment.

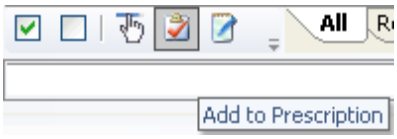

Statistics

General **On points**

All | Measured | Defectived | **Worst**

Limb	Merid.	Point	Mea...	Mea...	Mea...	Drop	Status
Left foot	F	liver veins	87	87	87		Partial fire
Left foot	F	Control Point liver	86	84	83		Partial fire
Left foot	V	genital organs	83	81	81		Partial fire
Left foot	STD	copulat. tiss. degener. of org. abd	83	82	81		Partial fire
Left foot	SP	joints of feet	83	82	80		Partial fire
Left foot	RP	Control Point lien	82	81	80		Partial fire
Right foot	STD	Control Point of benign tumor	82	80	80		Hyperactivity + fire
Right foot	RP	proteolytic metabolism	82	82	81		Partial fire
Left foot	R	Control Point kidney	81	80	79		Hyperactivity + fire
Left foot	K	skin - abdomen, back, feet	81	80	79		Hyperactivity + fire
Left foot	STD	Control Point benign tumor	81	80	80		Hyperactivity + fire
Left foot	E	upper esophageal	81	80	80		Hyperactivity + fire

To test a lot of medicines sequentially, you should select a medicine (from the database or putting it into the container) and test it on control points (CMP) of one hand (use all 10 or 8 fingers, except thumbs, because it is more convenient for testing a large number of medicines). If in 80% of cases is shown that the medicine is "suitable", it can be put on the list of suitable medicines (**Add to Prescription** button).



You can test, using CMP of one hand or CMPs of both hands and feet. In that case, the accuracy of results is higher, but the duration of testing is also increased. Further you should select next medicine and go through all control points again. In such a manner, it is possible to test a lot of medicines (several thousands) without intense impact on BAP, and obtain reliable results. In order to clarify the list of medicines, obtained during initial testing on CMP, you can make an additional selection on the worst BAPs.

It is very difficult for a doctor to learn medicine testing by carrying out the self testing. It is necessary to involve another person for the practice. To do that, a doctor sits down against a patient and searches corresponding BAPs. Before the procedure, it is necessary to wet a

probe slightly and remove excess moisture. Water excess on a probe increases skin electroconductivity. Therefore, the patient's body must be free of visible water drops.

During the testing the passing current is measured. Current change value directly depends on resonance effect of exogenous current, passing from device through the human body, and endogenous current, passing through the body "channels". Resonance increases the current while dysresonance decreases it. The closer is exogenous (from the device) current frequency to that of endogenous current, the higher is resonance probability. And the higher is resonance probability, the sharper is positive-going slope. All other phenomena (plateau and "indicator drop") also depend on resonance duration. It shows how long the body can keep the endogenous frequency equal to exogenous. The amplitude-frequency characteristic of current from device does not change while the graph changes, which indicates changes of internal conditions of resonance existence.

Dr. Voll recommended distinguishing three steps during testing: 1) placing, 2) pressure build-up, 3) keeping.

1. Placing: a doctor localizes a BAP using the probe and fixes the probe.

2. Pressure build-up: a doctor shifts glance from the probe on the BAP to device scale and increases pressure on the probe applying slight acceleration in moving start and probe rotation in moving end. Device indicator can show high values. Let us assume that indicator shows 70.

3. Keeping: it is necessary to remember a pressure level on the probe. The pressure should be the same in further examinations.

Even slight pressure on the probe causes BAP micro trauma. Therefore pathological pressure on BAP makes further measurement useless until the BAP restores.

It is necessary to learn how to determine the correct value when a probe presses on BAP with minimum effort, otherwise the most important phenomenon ("indicator drop") could be missed.

It may be that all medicines cause indicator rising to 50–55 after determining of diagnostic value of 70 (assumed) and device shows the same readings without medicines. It is evidence of BAP inactivation due to excessive pressure on it.

It may be that all medicines cause indicator deviation to 50–55 after determining of diagnostic value of 70 (as it was assumed). Besides, it may be that the device displays the same values without medicines. It is evidence of BAP inactivation due to excessive pressure on it.

So, the device shows 70. The probe should be removed from the skin surface. The medicine (homeopathic granule, tablet, vial, piece of food, etc.) should be placed on patient's hand or in the cup. The probe is applied again to appeared cavity on the skin in the place of tested BAP with the same pressure and at the same angle. The indicator rapidly reaches the same position of 70. Therefore this medicine is not suitable for the patient and must be set aside. If the indicator holds position below 40, the medicine overburdens a patient and actually harmful. If the device indicator slowly moves to 50 during another medicine test, this medicine is suitable for a patient.

Insufficient pressure and BAP overexcitation are not allowed. The slightest signs of indicator slowing down or value decrease should be noted. Thus, eventually we will be able to find the medicine that causes energy balance, i. e. we will watch slow moving of indicator to 50 points on the device scale. This is the medicine testing. During BAP retest the indicator should show 70 again when the tested medicine is removed from electric circuit. It is necessary to remember that multiple measures of the same BAP during testing process can inactivate it, even if pressure on the probe is correct. During training process it is necessary to learn to sense the pressure level that injures a BAP if exceeded.

Of course, many things depend on operator because each operator has his own rhythm of pressing. For some operators the standard positive-going slope is 0.5 s while for others is 1.1 s. For testing purposes each operator should find his own individual rhythm to reach the "plateau" that appears during neutral medicine testing. Neutral medicine is empty or non-connected testing cup. It allows a doctor to "calibrate" himself. It is necessary to do the following: connect a cup to the circuit and perform multiple pressures. The front will be visible and once growth of "standard" 0.5 s is reached, it is possible to start testing and connect medicines. Testing clarifies all: if a slope increases more rapidly, it is necessary to pay attention to the certain medicine. If a slope is within norm, then we should continue, etc.

So, for medicine testing we should do the following:

1. Perform measurement without medicine in order to determine the initial BAP parameters.

2. Put a medicine into the cup (or select an electronic analogue from the database).

3. Perform measurement on the same acupuncture point very gently, applying similar pressure level on the probe.

4. Signs that the medicine can be considered effective for the treatment:

a) sharp positive-going slope from pressure start to "plateau";

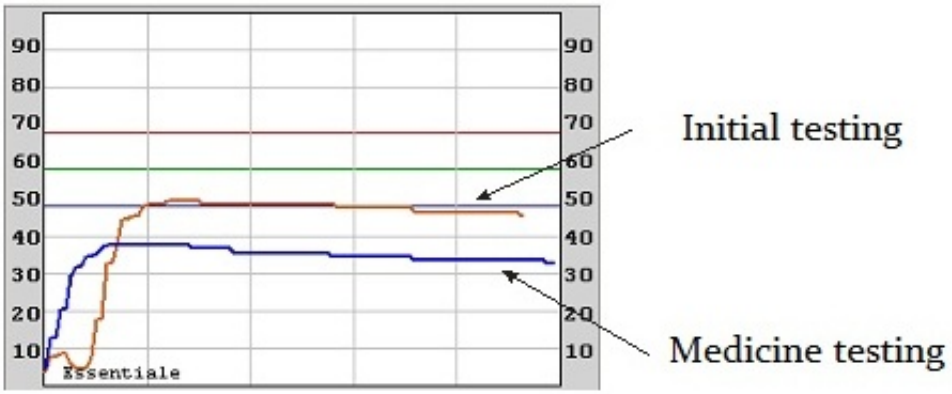
b) "indicator drop" value is decreased significantly or completely absent;

c) initially measured BAP value improves to 40–65.

5. Selection of the medicine amount (1, 2, 3 tablets or other potency) helps to understand whether values change to normal. If the value begins to grow (i. e. worsen) in increasing of medicine amount, then in the cup the previous amount of medicine should be left with the subsequent testing of an additional medicine.

For estimation of the body response to a medicine, a graph is displayed on the screen. It allows evaluation of the growth speed, length and form of the plateau, as well as an indicator drop value. The graph is saved completely. It is necessary to gain experience in order to learn how to recognize required moments in the graph (the graph can be unloaded for mathematical analysis, see **Registration** section).

Prescription includes the comparison of two graphs (measurements with and without medicine):



The graph interpretation in the order of increasing importance to better understand the processes in human body:

1. Positive-going slope from the moment of pressure. The body encounters with information for the first time, and its response to this information allows assessment of the body's compensation abilities, reactivity and level of possible effects of the tested substance on human body. If the slope is sharp, the body is "informed" about this substance. Depending on the slope characteristics, it is possible to estimate how the body deal with its impact, etc. Initial slope is not a random process although it has some dependence on pressure on the probe. Therefore it is better to apply the rhythm of stepwise pressure, make kind of "self-calibration" in order to press the BAP with the same intensity and watch slope changes against that background.

2. Negative-going slope is a line after reaching the plateau (or "indicator drop" according to Voll). With data from positive-going slope, it is detailing of the body response and level of its compensation regarding tested substance.

3. Plateau value allows estimation of the overall health of person examined but not characteristics of the substance.

Therefore, it is possible to perform testing and selection of a large variety of medicines which are consistent in the therapeutic action to the patient.

It is necessary to know how to discern what exactly caused the current condition: immunity disturbances or microorganism virulence, since our life environment is not sterile and we always interact with many infectious agents. Virulence of infectious agents to immunity defense ratio determines whether we response to infection or not.

Usage

Medicine testing is intended for the individual selection of homeopathic and allopathic medicines, recording of electronic medicine copies to the database and detection of allergens and substances (such as environmental toxins) that may have some undesirable impact on the body.

Medicine testing is registration of electropuncture parameters changes when substance tested is included into the passive electrode circuit. For this purpose, a duralumin cup is used that connects to the Test port via additional cable (it has two black plugs).

Testing of homeopathic remedies is the most extensive developed, but it is possible to test minerals, metals, organopreparations, cosmetics, perfumery products, food, etc.

Program allows testing both certain medicines and combined medicine groups, as well as carrying out treatment with medicines that improved acupuncture point state during the testing.

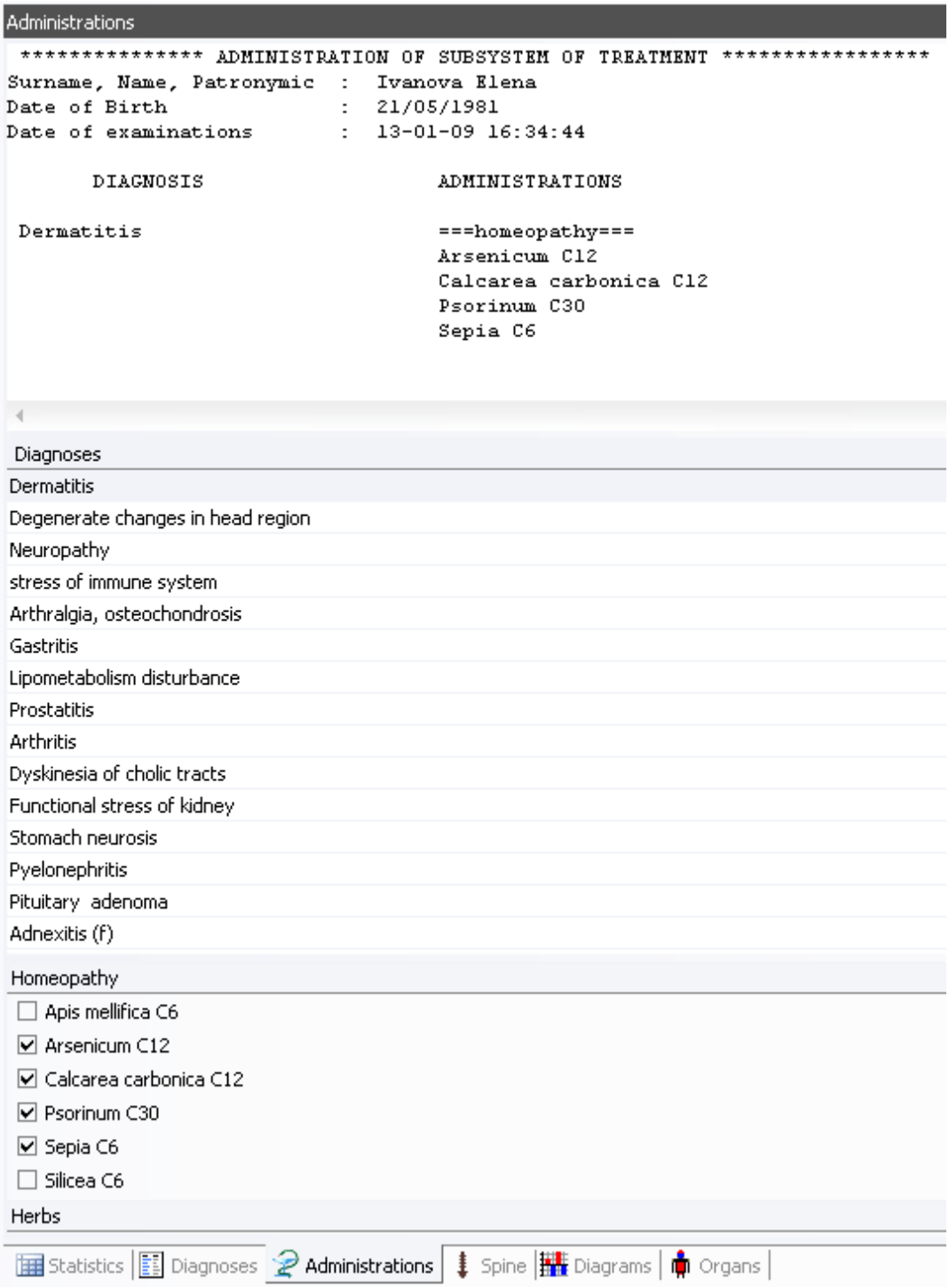
Besides, **viruses, parasites, and other infectious agents testing** is possible. In that case, the test principle is following. If the nosode of virus, parasite, etc. is resonant (i. e. it is“alike” in homeopathy terms) to the sick person, the value of tested BAP, excited or degenerated, approximates a normal, both at increased or decreased initial BAP values. Nosode is resonant (i. e. virus, parasite, etc. is in the body) when the value is improved by 10 units and more (it is significant similarity) or by 5–10 units (it is a partial similarity). If the value is improved by less than 5 units, it cannot be considered as significant (it can be an error measurement). The nosode for such testing you can take from the ROM or, if it is not available, you can use a container.

Testing procedure

It is desirable to perform a meridian analysis before testing, and in case of too high or too low values it is necessary to perform the procedures for energy alignment (e. g. electrotherapy).

Before each medicine testing the container should be thoroughly washed with flowing water. Then clean the container with alcohol solution and let it dry. Small amount of medicine (10–30 grams or 1 tablet for tableted dosage form) is enough for testing and biotransference. The medicine should be placed in the cup without package, i. e. powder without bag, tablet without blister, etc. Fluids are placed in the cup inside of a glass or glass vial.

List of medicines recommended for treatment is issued after Voll diagnostics.



It is advisable to test these medicines for patient compatibility in order to select the most suitable ones and reject ineffective. To do that, it is possible to choose one of two ways:

1. Testing of medicines from the database. It is the most convenient way, since "actual" medicine presence is not required because its energoinformational copy is used. Cup is not connected because the medicine is included into human bioenergetical circuit from the available database. Examination is performed by pathologies revealed. For example, if abnormalities on measurement points of large intestine meridian are found, Nux vomica medicine is selected in **Homeopathy** section of the database, and second measurement of revealed pathological BAPs is performed.

2. Tested medicines, minerals, jewelry, etc. are placed in the cup which is included into the human bioenergetical circuit by connecting to short tap from the **Test** socket. Examination is performed by pathologies revealed. For example, if abnormalities on measurement points of large intestine meridian are found, Nux vomica homeopathic medicine (10–30 granules) is placed in the test cup, and second measurement of revealed pathological BAPs is performed.

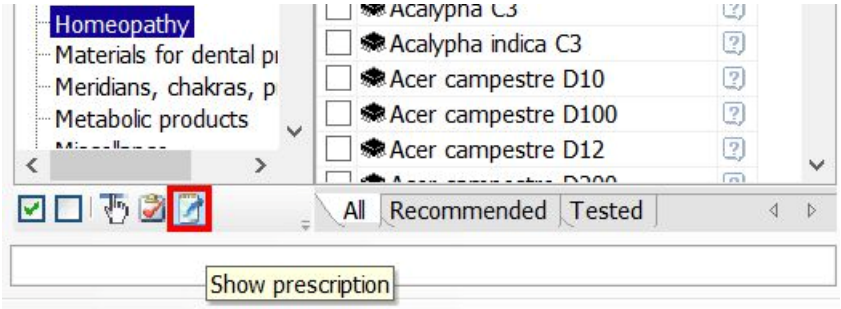
Medicine testing is considered successful if parameters after second measurement with medicine tested are normalized, i. e. values are within 50–65 units and "indicator drop" is eliminated for maximum number of readings. In that case it is advised including the medicine on the list for further prescription.

Recording of medicines to carrier and creating the medicine electronic copies (bioenergetic transference).

During the bioenergetic transference of medicine electronic copies to water, sugar granules, wax, etc. the maximum weight of carriers should not exceed 30 grams (or 100 sugar granules). It is advisable to put into the container a little more amount of medicine to get more reliable data. Electrodes should be removed from all plugs of patient cable, and plugs should be connected to the container with carrier (if the medicine is transferred to water, a glass with water is placed in the container).

The medicine testing

The medicine testing is a testing of medicines, recorded in the database on the media, with evaluation of patient's body response. Results of testing you can see in **Prescription** menu.



In homeopathy the following **dilution scales** are usually used:

1. A decimal scale, which is labeled with **D** or Roman numeral **X**;

2. A centesimal scale, which is labeled with **C** or **CH**;

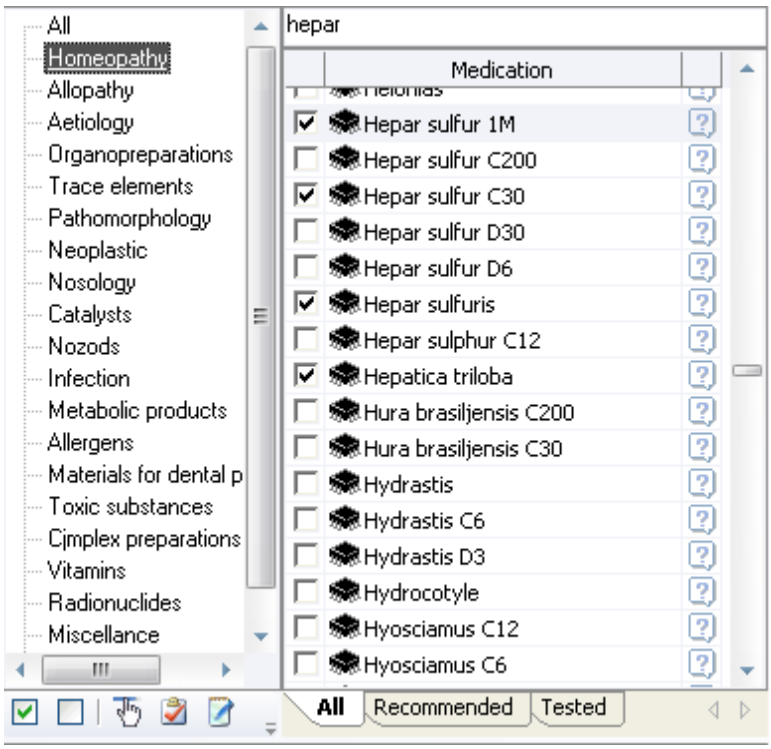
3. A mil scale, which is labeled with **M**;

4. A fifty thousand-scale, which is labeled with **LM** или **Q**

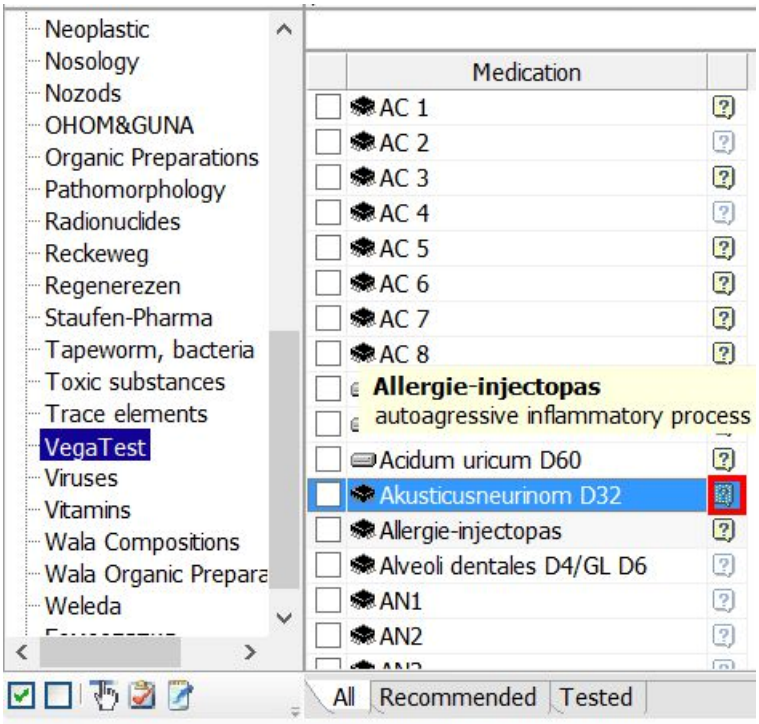
If a homeopathic remedy in the database has not certain potency, it means that the medicine is recorded with classical potency **C3**. The **1M** potency indicates **C1000** potency.

Given the choice between similar medicines, the medicine from the ROM of ***Master*** device must be preferred as more accurate.

Before the testing starts, it is necessary to tick medicines for the testing in the general list (**All** or **Recommended** tabs). To find a desired medicine, you can use the search bar over the list, entering the name:

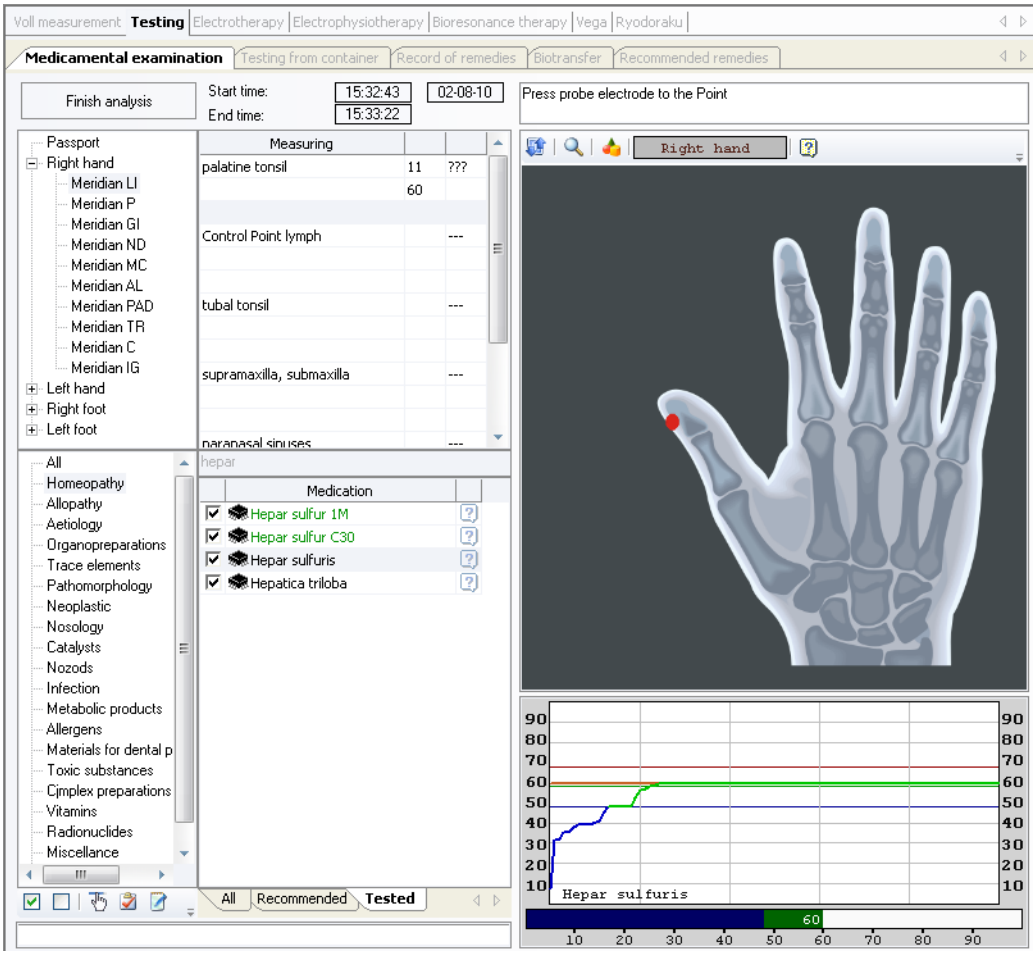


When the mouse cursor is placed over question mark on the right of medicine's name, the summary about medicine will appear.



To start examination, click the ***Begin analysis*** button. The device will switch to diagnostic mode and move to the **Tested** tab. You can perform measurements you need, following the instructions and images on the screen. If medicines for testing are not ticked, the list of tested medicines will be empty. Until you press Space bar, the graph displays only that electrodes are placed on the patient's body, data recording are not being made. After the start of

testing (under the Space bar) you can continue testing the same medicines on other points without finishing the testing. I. e. when the list comes to the end, you can select another BAP and continue testing. To end the analysis, click the ***Finish analysis*** button. To clear analysis results, click the ***Clear*** button. In the right window the image will display with the BAP that you need at the moment, as well as progress graph, displaying current value of a measurement.

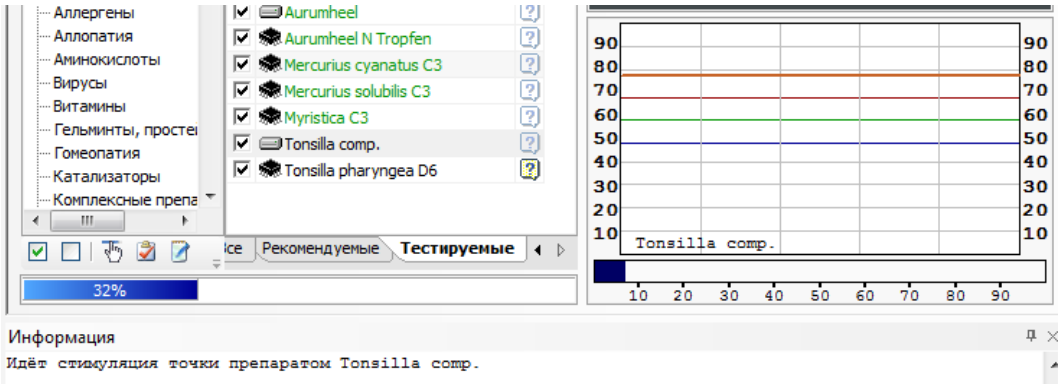


Testing order

- Connect the red plug of device wire to the ebonite electrode probe. Connect the black plug of device wire to the cylindrical electrode.
- Select the desired BAP from the list (for example, with the worst values).
- From the offered list, select the group of medicines for testing (to do that, tick medicines you need).
- Click the ***Begin analysis*** button.
- Wet the tip of the probe electrode a bit.
- Press a tip of the probe electrode to the BAP.
- At first, an initial testing of a point shown in figure is performed, **without medicine**. The program will perform three measurements consecutively; do not take the electrode off the BAP during all of them. If measurements have performed correctly, testing of medicines included into circuit from the medicine selector will start. Otherwise, the program will repeat the measurements for the BAP.
- After that, the testing of medicines on the list will start. Once the tip of electrode probe is pressed to the BAP, testing of the first medicine on the list starts. Wait for the graph stops moving and take off the probe from the BAP. When you take off the

probe from the BAP, the transition to the testing of next medicine on the list occurs. The tested medicine will became green. In this way you should go through the entire list of medicines selected for testing.

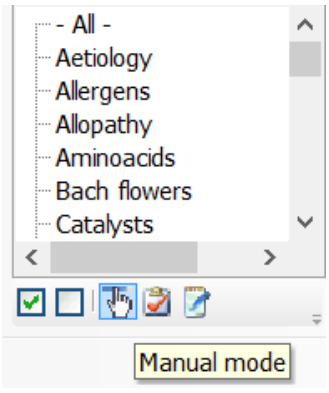
o Testing of digital medicines is performed other than analog medicines. To test digital medicine, the stimulation of the BAP with that medicine is performed at first, and only afterwards the testing is carried out.



o In **automatic mode** the program goes through the list of medicines selected for testing automatically. Testing is performed on one BAP (usually the worst BAP is selected, or the BAP relating to the tested organ or system).

o In **manual mode** it is possible to carry out the testing of manually selected medicines on manually selected point or several "spontaneous" BAPs.

To switch to that mode, you should select Manual mode after clicking the **Begin analysis** button.

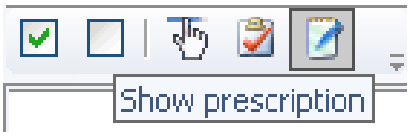


In this mode, when you select the medicine on the list with a mouse, it is immediately included in the circuit automatically, and you can start testing on the selected point. When you select with a mouse the other BAP for testing of the same medicine, and initial measurements on that BAP were not performed, the program also carries out the initial testing of the point, and further will perform the testing of medicine. You can test medicines on any number of BAP and/or leads, just selecting the desired points with a mouse. After addition to the prescription, all measured data will be available for viewing. A medicine will be added to the prescription and become **green** if you click it with a mouse upon test completion. In manually mode you can retest any medicine on the list.

- If in the process of testing the operator considers the tested medicine suitable for the patient, it is possible to add it to the prescription by clicking the **Add to prescription** button or press **Ins** key on the keyboard.

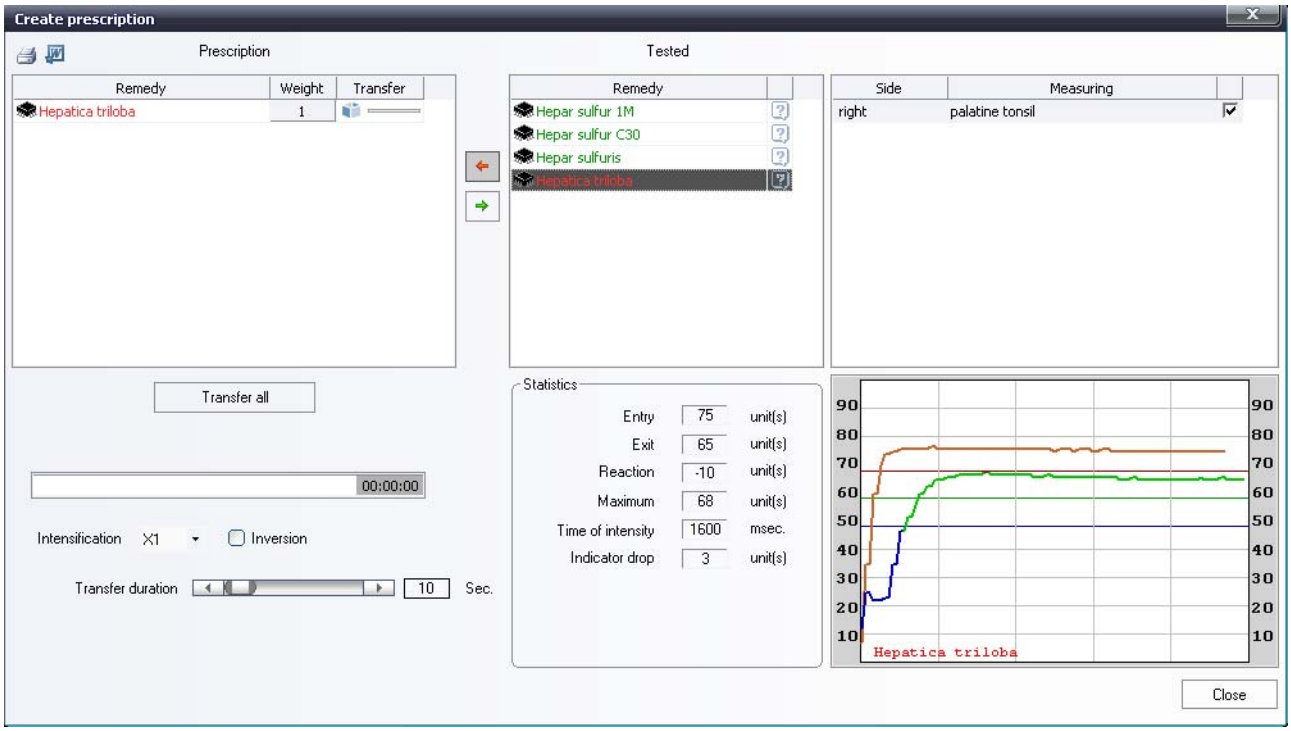
In that case, the selected medicine will become **red** on the list.

- Upon completion as well as in the process of testing, you can see the results by clicking the **Show prescription** button.

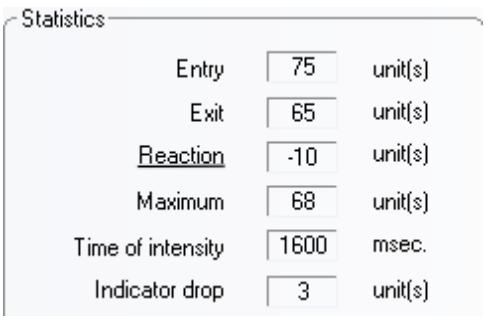


Editing of prescription

In the prescription window you can look through the list of tested medicines for every BAP, list of medicines added to the prescription and take a final decision on adding medicines to the prescription, comparing the graph of BAP initial measurement to the graph of measurement with medicine. To add the medicine to the prescription, click the red arrow. The column Weight in the prescription list means how many BAPs tested positive when testing the medicine. If decision about adding of the medicine to the prescription was based on many BAPs, its "weight" is higher.



Quantitative results of medicine testing are displayed in the **Statistics** field:



Entry — initial measurement

Exit — final measurement

Reaction — final measurement minus initial measurement

Maximum — the highest point in the graph

Time of intensity — peak time in the graph from the beginning of testing

Indicator drop — indicator drop value between first and last BAP measurement

On these data and graph data it is possible to assess the degree of patient's body response to the medicine.

The body **response** can be:

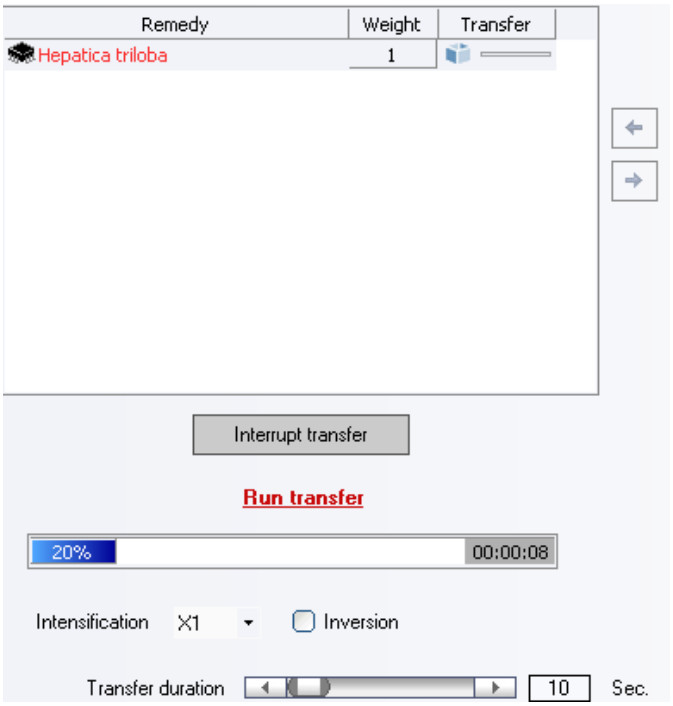
(+) — stimulatory (medicine or infection increases body energy level)

(–) — dissipative (dispersion), i. e. medicine or infection decreases body energy level

The greater the number, the more intense the response is. It is also necessary to see in the graph the time of response, indicator drop, time of intensity duration, etc. The more intensive and clearer findings, the more suitable the medicine is.

Depending on the energy level and impact, it is necessary to apply medicines that cause stimulatory or dissipative body response. Medicines having dissipative effect are applicable in acute cases but they increase strain upon immune system, so in severe chronic conditions it is necessary to use medicines having stimulatory effect.

Every medicine from prescription or all of them is possible to transfer to the carrier (water, sugar granules, etc.), by clicking the **Transference** button (on the right of the medicine name). If you want to make a mixed medicine, click the **Interrupt transference** button. Before that, you should connect duralumin container to the **Test** socket of the device. Close all three plugs on the container and put a carrier into it. Prior the transference you can set the potentiation value and make an "exact" or "inverted" copy. Transference duration depends on a carrier (transference to water takes 10 s, to sugar nibs — until 3 min, etc.).

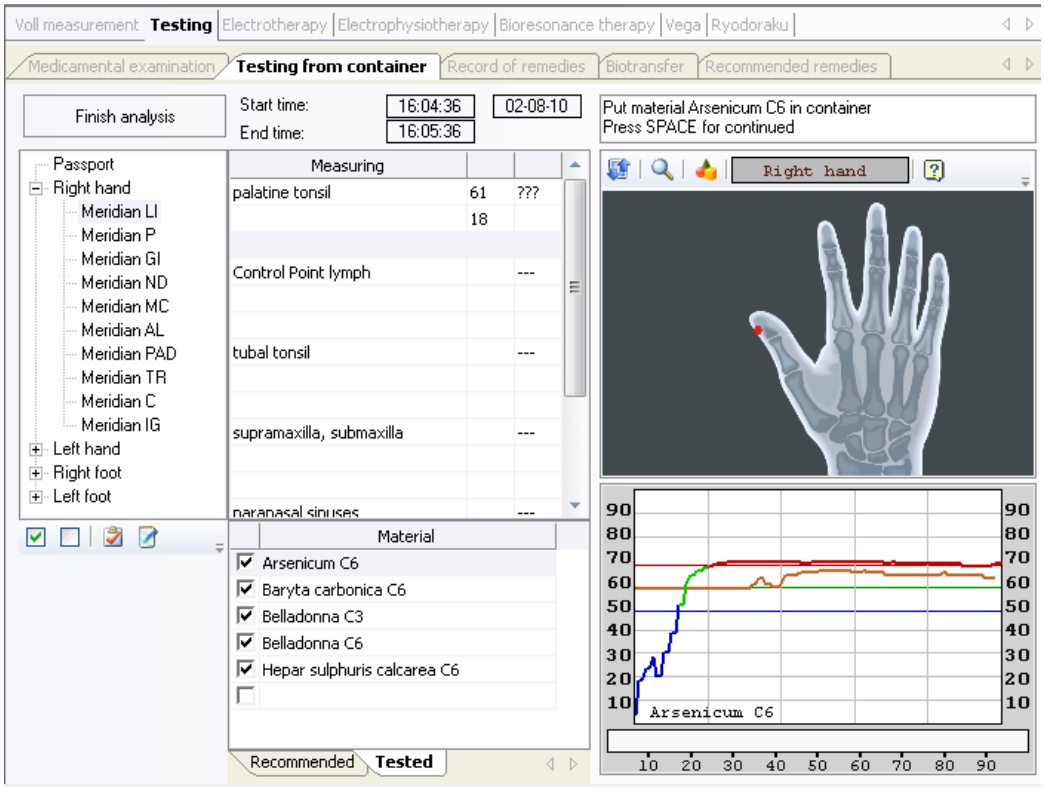


It is possible to export the prescription data to Word or print it. If the patient has been registered, the prescription will be saved.

Testing from container

This window is for Voll's test analysis of a substance, placed in the container, on all meridian points. Prior to the testing it is necessary to tick testing medicines (which will be placed into container) on the general list. You can see the testing results in the **Prescription** menu.

To start examination, click the ***Begin analysis*** button. The device switches to the diagnostic mode, so you can perform measurements, following the instructions and images on the screen. To end analysis, click the ***Finish analysis*** button. To clear analysis results, click the ***Clear*** button. In the right window the image will display. It will show the BAP that you need at the moment as well as a pointer-type indicator displaying the current measuring value.

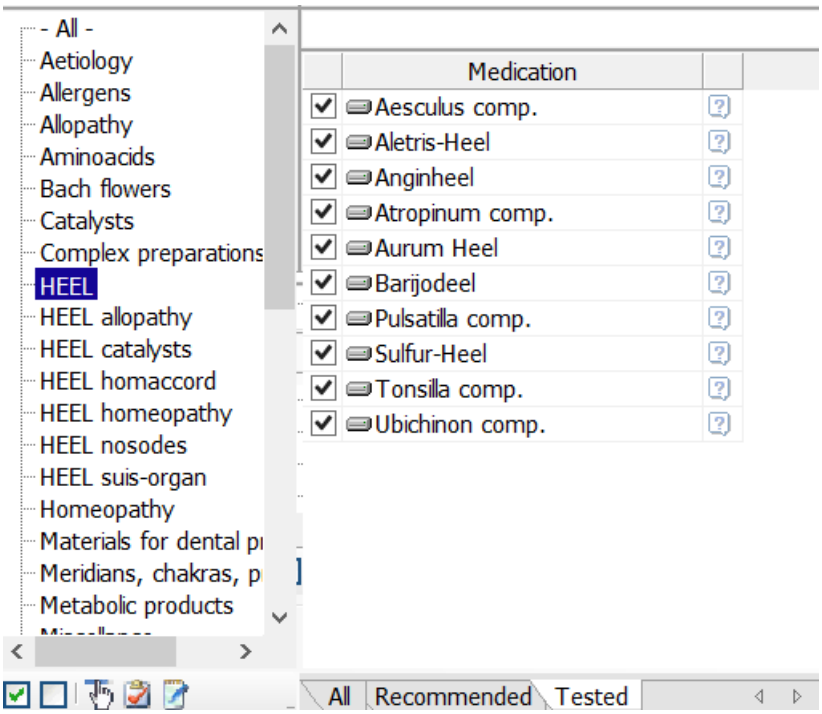


Testing order:

- Connect the red plug of the patient cable to the ebonite electrode probe. Connect the black plug to the cylindrical electrode.
- Connect the testing container to the **Test** socket of the device. Insert the testing cable plug into any socket of the testing cup.
- Wet the tip of the probe electrode a bit.
- Select the desired BAP from the list (for example, having the worst values).
- The program will offer to select from the list the recommended medicines for testing. To select a medicine, tick an appropriate box at the beginning of the line.

Select medicines you need from recommended, as well as medicines available in material form.

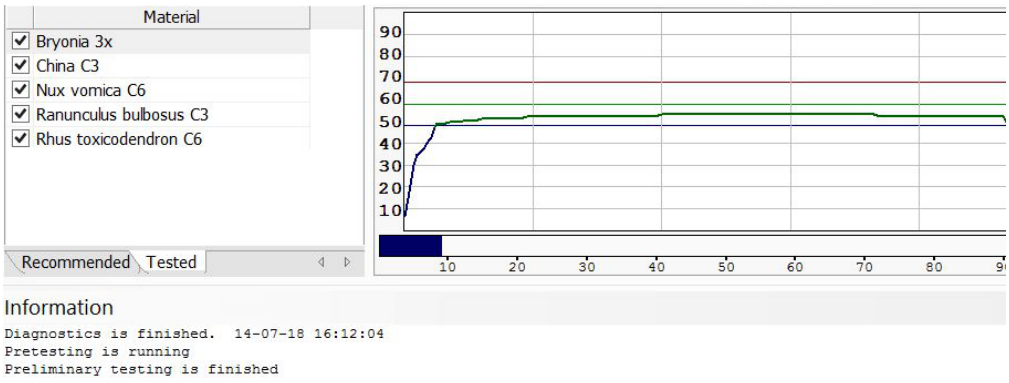
o Click the ***Tested*** tab and add to the list the names of medicines you need to test, as well as available medicines not from the list of recommended. To do that, add a new entry to the list by ticking the box. Double click the empty line next to tick mark. The cursor will appear. Enter the medicine name. Similarly, add next medicines. To delete accidentally entered lines (entries), untick the box in the beginning of the line.



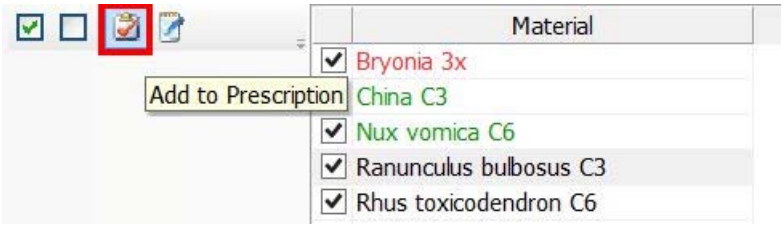
o Click the ***Begin analysis*** button.

o Press a tip of the probe electrode to the BAP.

o At first, an initial testing of a point shown in a figure is performed, (without medicine), **so you need not to put a medicine into container in the first stage**. The program will perform three measurements consecutively; do not take the electrode off the BAP during all of them. If the measurements have performed correctly, the program will switch to medicine testing. Otherwise, you have to repeat the measurements for the BAP.



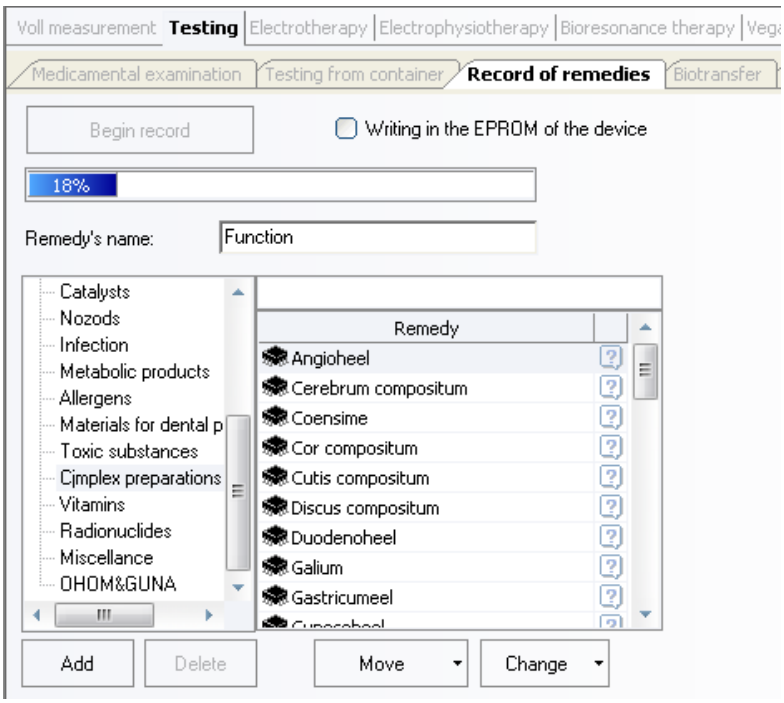
- Upon completion of the initial testing, the program will offer to put a testing substance (first on the list) into the container. Put selected medicine into container and press the Space bar on the keyboard. Press the tip of electrode probe to the BAP and perform testing of the medicine, waiting for the graph stops moving, then take away the probe from the BAP. When you take the probe off from the BAP, the transition to the testing of next medicine on the list occurs. In this way you should go through the entire list of medicines selected for testing.
- After that, the testing of medicines on the list will start.
- Press the probe to the BAP, wait for the test completion.
- To save results of a current test, click the **Add to Prescription** button.



- If necessary, select another BAP with the mouse and retest the medicine in the container. The number of BAPs for the medicine testing is unlimited.
- Use a similar procedure for all medicines from the list.
- Upon test completion, you can see the results by clicking **Show the prescription** button.

Medicine recording to the database

This window is for the recording of electronic analogs of medicines to the database. To start recording, click the ***Begin record*** button. The substance must be in a metal cup. All patient cable plugs and a cable for testing must be connected to the container. Besides, in that window you can carry out manipulations with medicine database, for example, add and delete the groups of medicines, delete medicines and transfer them to different groups, add comments.



Recording order:

- Select the name of a medicine in the name box. Select a medicine group in the tree (homeopathy, infections, micronutrients, diseases, organopreparations, uncategorized).
- If you use the ***Master*** device, you can record the medicine to the ROM of device in analog form. In that case tick the appropriate box. **Attention! ROM capacity is limited, it is not possible to correct or delete the entered information. Be careful with use of that function to avoid ROM overflow!**
- Put the substance into the cup, close all electrodes on the cup.
- Click the ***Begin record*** button. The program will record the medicine to the database. The process is displayed as a progress bar.
- Upon completion of the recording, the medicine will appear in the list.

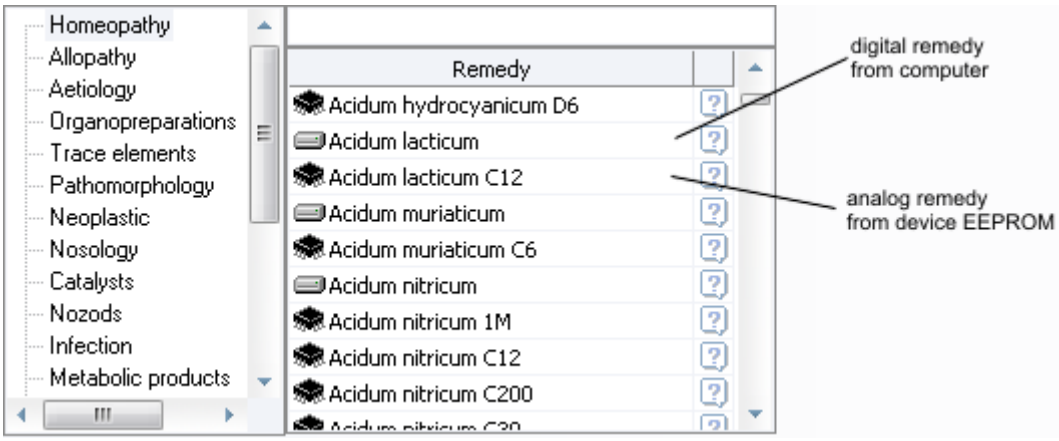
Note Medicines recorded to the ROM of device are marked by the icon

The medicines recorded to the ***Master*** device ROM are more accurate and therefore more effective.

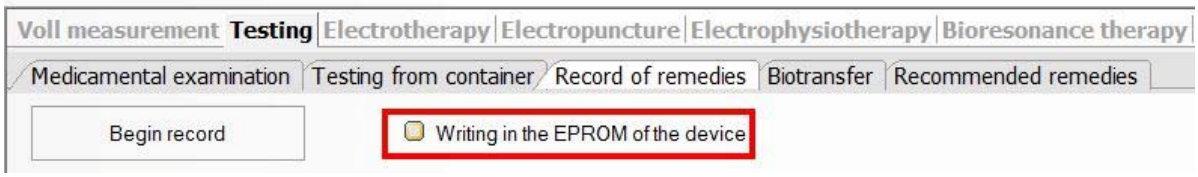
Digital remedies are recorded to the hard disk of a computer. The number of such records is practically unlimited. Those medicines are marked in the general list by the icon **hard disk** and always visible in the database.

Analog remedies are directly recorded to the ROM of the device. The

maximum number of records is 32 000. Those medicines are marked in the general list as microchip icons (the black “myriapods”). They will appear in lists of medicines after connection of the device to the computer:



By default, the recording is made to the hard disk of computer. To record a medicine to the ROM of the device, you should every time tick the **Writing in the EPROM of the device** box.



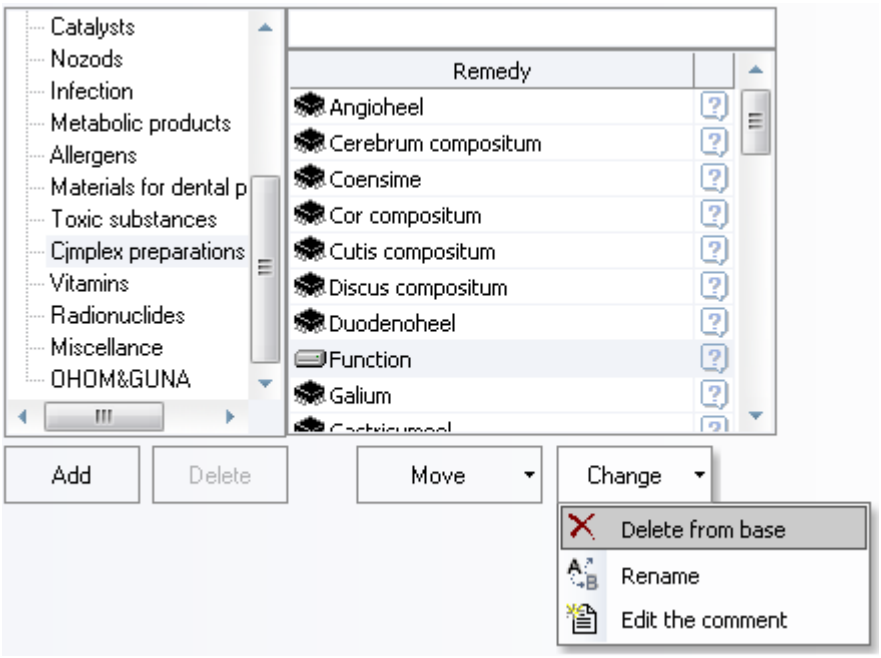
Editing of medicines in database

After recording you can edit data of the medicine. To do that, press the ***Change*** button:

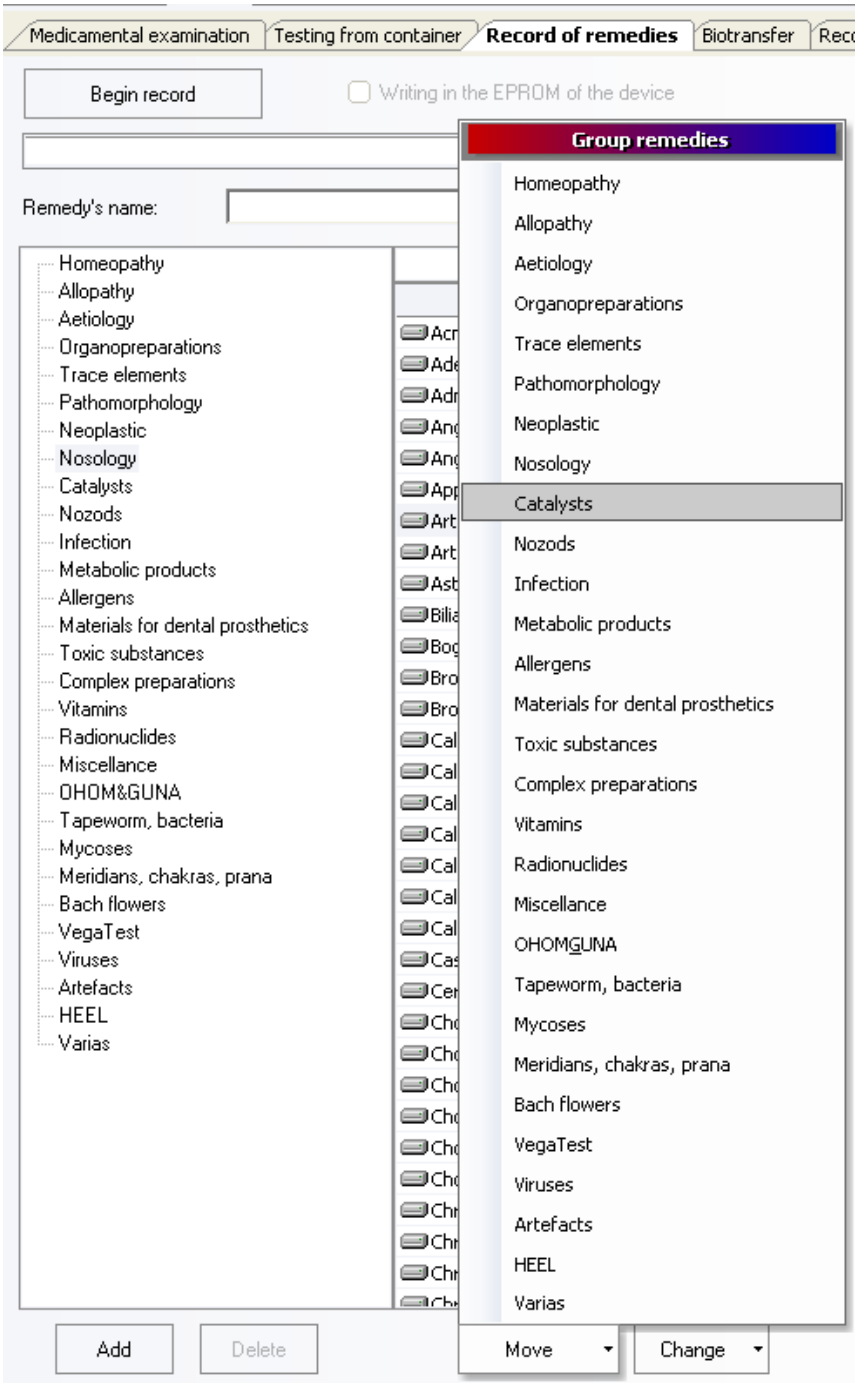
– Delete the medicine from the database (it is not possible to physically delete the analog medicine from the ROM of the ***Master*** device; only its name is deleted, so be careful)

– Rename the medicine.

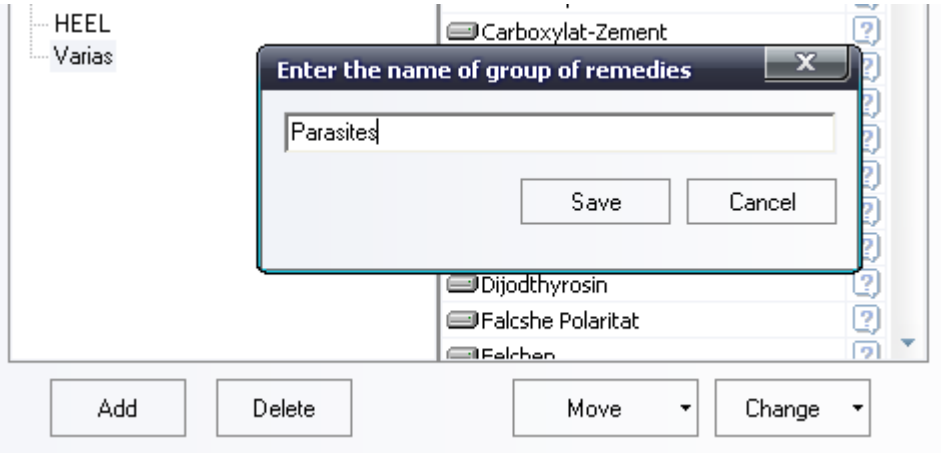
– Edit the comment. Into that field you can enter any letter-digital information about medicine up to 255 characters long. That information will be shown when you place the mouse cursor over the question mark above the medicine name.



You can transfer any medicine (both analog and digital) to any group of medicines in two clicks. To do that, select (highlight) the medicine name and click the ***Move*** button. Select a new group of medicines in the appeared list and transfer the medicine by clicking that group.



To add a new group of medicines, click the ***Add*** button. In the opened window enter a new group of medicines. It is possible to delete the group entered by user. It is impossible to delete the existing (preset) in the program groups of medicines.



Information transference and potentiation (active imprinter)

This window is for the transference of electronic analogues of medicines to water or sugar granules with specified amplification. Realized in the device the electronic amplification during imprinting is a way to increase the medicine potency. So, it was determined by experimental way, that **X2** amplification results in a medicine imprint identical to the original with regard to the effects for the human body. For example, if we enter a medicine with C3 potency into the selector's database, after imprinting with amplification of **X2** we get the same potency (C3). If we enter a medicine with potency of 200, after amplification of **X2** we get the same 200 potency. This principle does not change: whatever the potency of a homeopathic remedy entered into the selector's database, we need to use **X2** amplification to make its exact copy.

Higher amplification results in further potency increase. So far we can see that relationship between amplification and potency is not linear. The relationship between amplification and potency is not linear:

X1 – 0.5
X2 – 1
X4 – 3.33
X5 – 10
X8 – 33.33
X10 – 66.66
X16 – 166.66
X32 – 333.33

It means that **C3** potency after amplification of **X32** will become **C1000**. For some medicines the obtained potency will be slightly different, but overall dependence will remain. The imprinting without amplification 1:1 (**X1**) results in medicine imprint with lower potency.

The amount of medicine in the cup is immaterial. Anyway, it is impossible to put inside a kilo of sugar granules, and no substantial difference between 10 and 20 grams.

The potency can vary for the same medicine. Apparently, it depends on the substance to which the information is recorded, environment and a user:

– The substance itself (to which the information is transferred) can change the medicine potency regardless of amplification that is used during information transference. The less substance is prepared for the recording and the more it is stable (for example, sugar or granules with rigid structure of crystals), the harder to control the result of recording. Accordingly, the more substance is prepared and the more it is "plastic" (for example, water or 70% alcohol), the less effort is required to get a proper medicine (not with random potency but with potency recorded in the device).

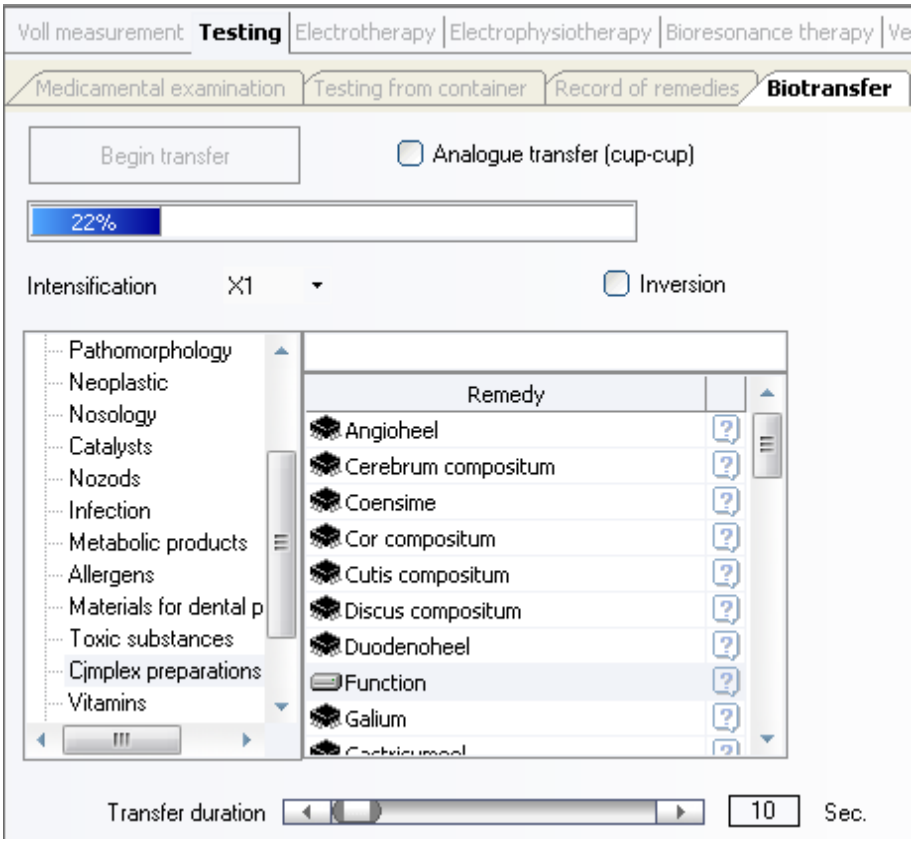
– The more high-noise environment (noise, day and electric light, talks, many running devices), the harder to control the result in contrast to more favourable environment, when it is night-time and the substance for recording is shielded from the light, electromagnetic and sonic disturbances.

– The better the operator is committed to work, the higher quality of the medicine after recording.

So it is advisable to record avoiding facilities, where the recording can be corrupted with power line interference. Alternatively, it is possible to shield the cup, covering it with a metal shield (for example, a pan).

Transference duration (exposition) is selected on the basis of a carrier. Transference to water or 70% alcohol takes 10–180 seconds, to sugar granules from 3 to 30 minutes. Transference to wax and other substances takes more time. The mixed medicine is recorded to the carrier sequentially. For instance, if the 3 nosodes are included into prescription and during recording they switch from one to another cyclically (1,2,3,1,2,3,1,2,3,1,2,3,1,2,3,1,2,3,1,2,3, etc.), it is necessary 20 minutes for each nosode, i. e. 1 hour cumulatively.

To begin transference, click the ***Begin transference*** button.



Sugar granules should be placed into the metal cup, water in a glass or crystal glass placed on the cup. Both patient cable plug and plug of a cable for testing must be closed on the cup to create a bioenergetic contour:

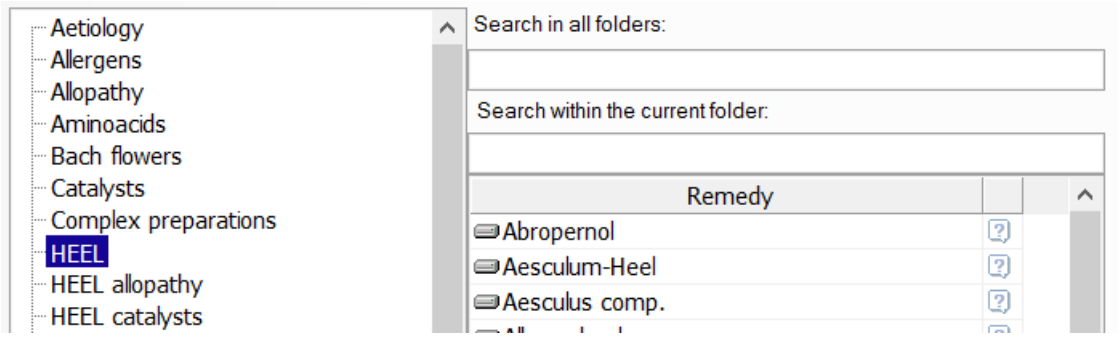
For analog biotransference connect two cups. One cup should be connected to the red patient cable plug and another cup to the black plug. A cup with **black** plug is a source (original substance should be placed in that cup), a cup with **red** plug is a target (carrier for transfer should be placed there). Do not allow cups to contact each other!

Transference order

- Select the electronic analog of the medicine from the list.
- Select potency (amplification) for the recording (X1...X32).
- In case of digital transference close all electrodes on the cup.
- In case of analog transference (from cup to cup) connect each of two cups to device leads. You need not to connect them to each other.
- Put sugar granules or glass of water into the cup. In case of analog transference put the substance into second cup connected to the **black** plug.
- Click the ***Begin transference*** button. The program will transfer the medicine. The process is displayed as a progress bar.

Medicine search in the database

In the **Record of remedies** and **Biotransference** windows you can look through the lists of medicines in the database as well as search them both all over the database and in separate folders.

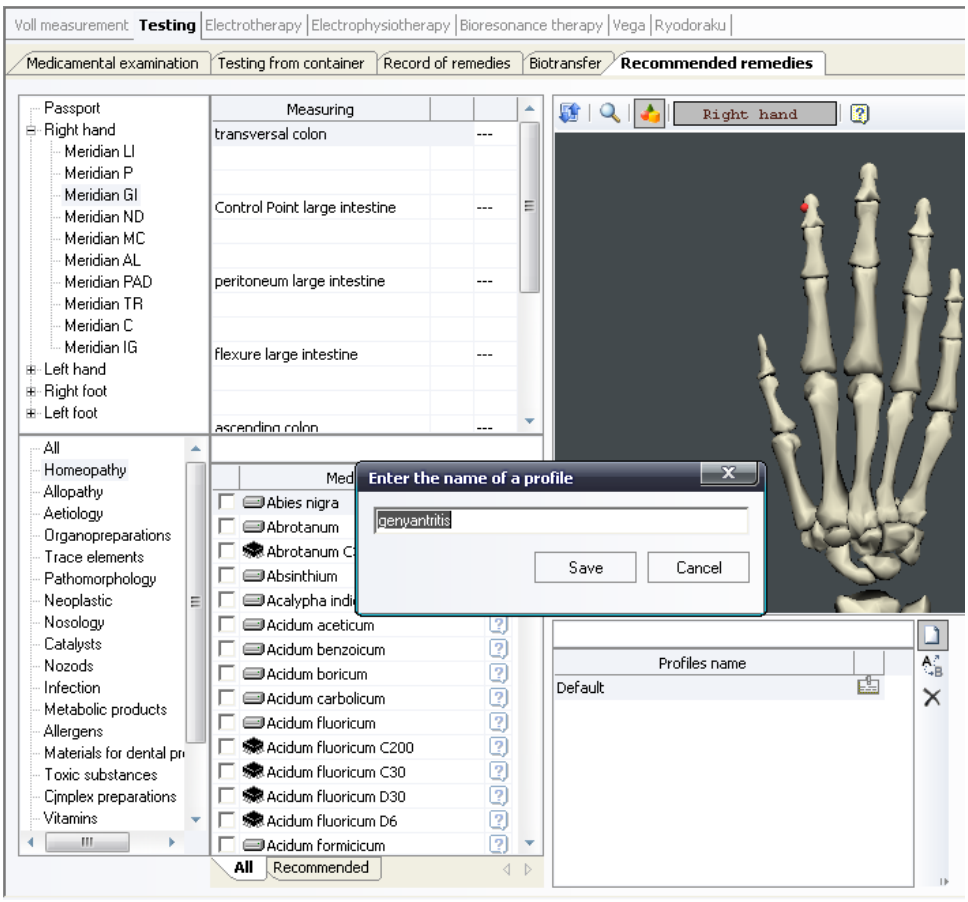


Recommended medicines

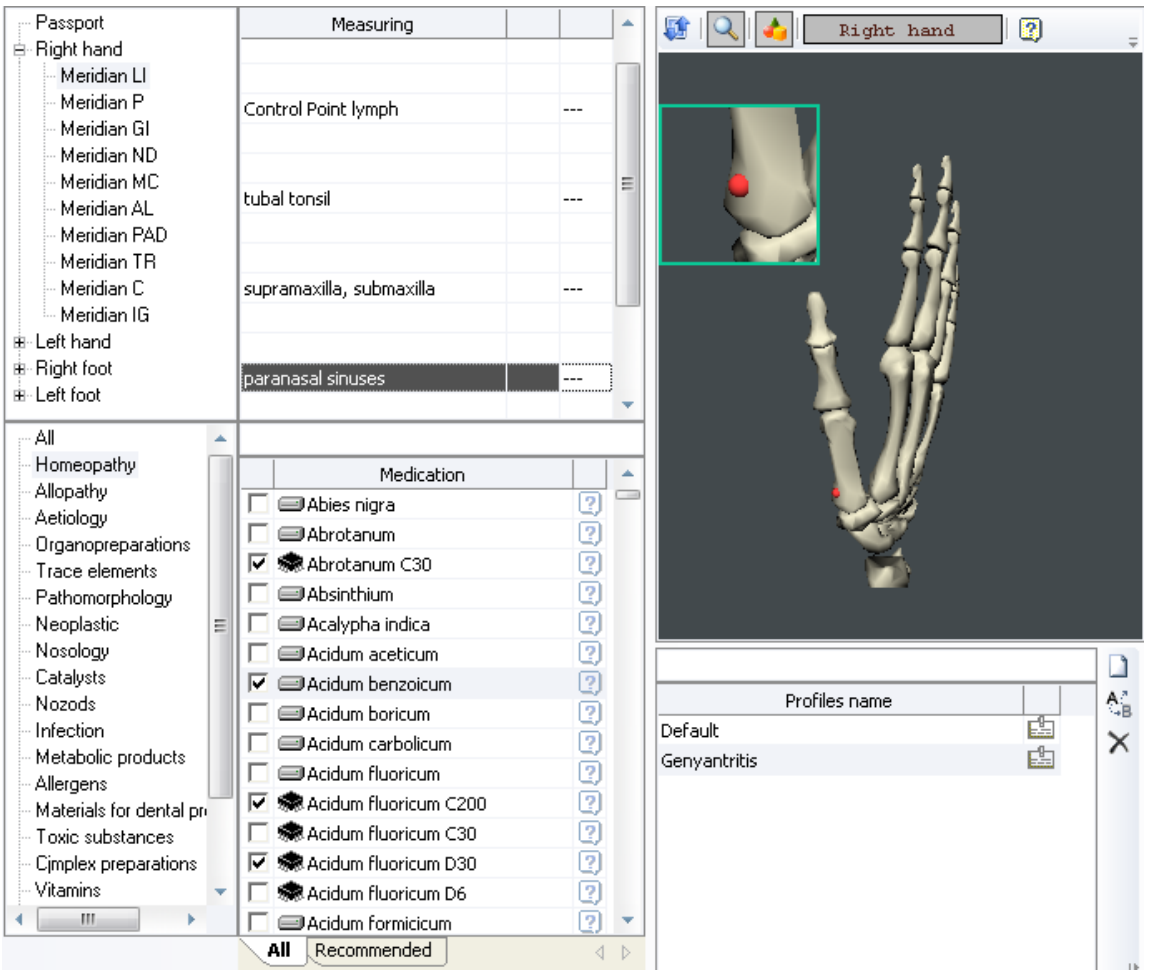
In the **Recommended remedies** window you can create and set your own profiles of recommended medicines to use them in testing dialogs. Any user can compile a list of recommended medicines for certain cases. For example, let's create **Maxillary sinusitis** profile and select for it the list of recommended medicines that will be tested on BAPs of maxillary sinuses.

Work sequence

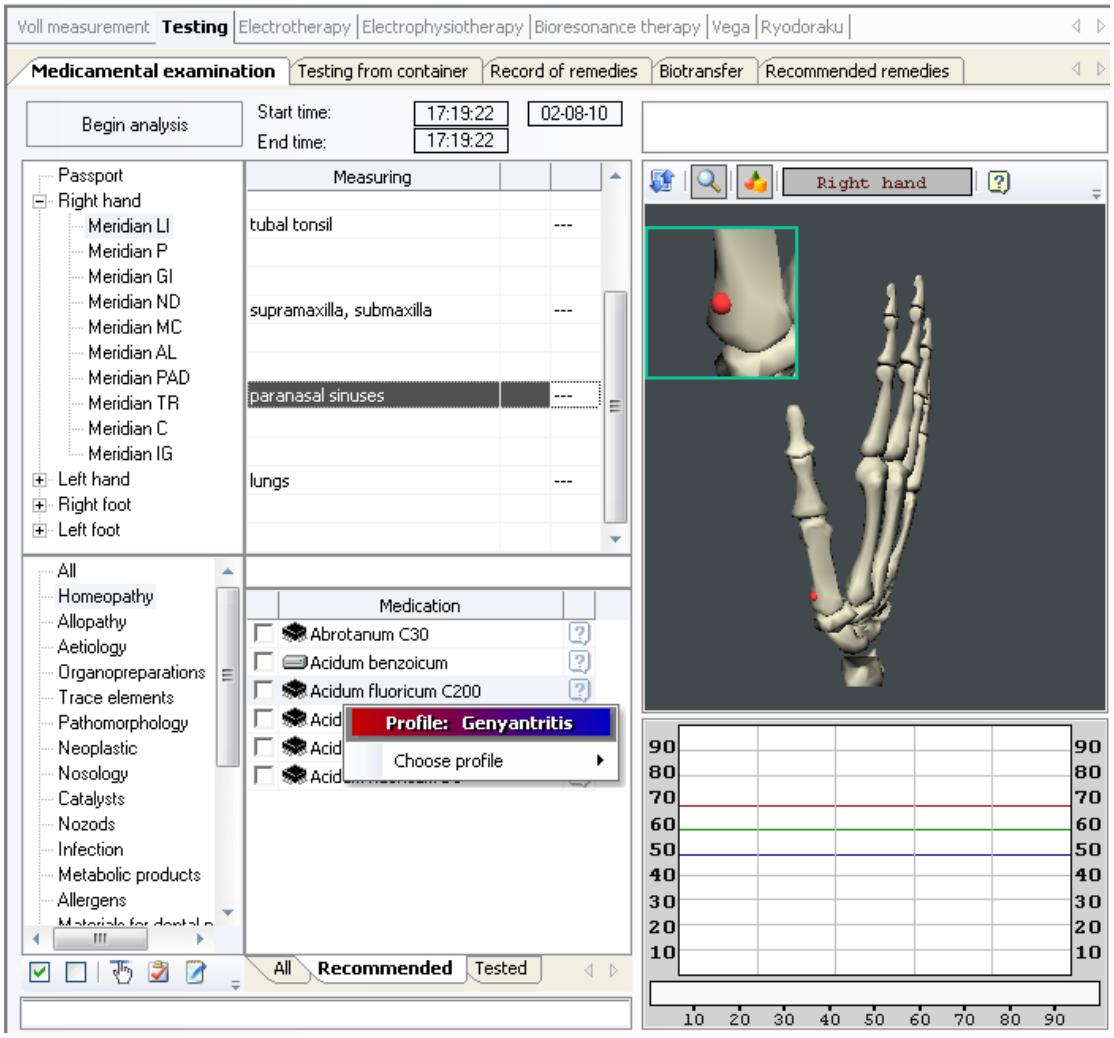
- Click the **Create a profile** button.
- Enter the name for a profile you are creating:



o Sequentially going through the meridians and selecting all BAPs necessary for this profile (disease), tick desired medicines on the **Recommended** list for every BAP after testing. If you want, you can select testing medicines on the **All** list. Select the necessary BAP with the mouse and then tick desired medicines:

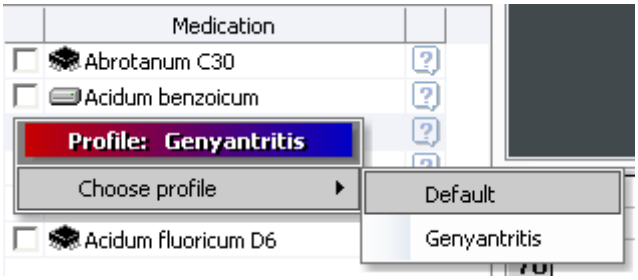


o The profile will be saved automatically. Now, in order to select it in the menu of medicine testing, you should select the **Recommended** tab in corresponding list of medicines, click the list with the right mouse button and select the required profile from the drop down menu.



o After selection of the filled profile in the **Medicine testing** menu, in the **Recommended** section the medicines selected for this profile on corresponding BAPs will be displayed **only**. If the profile is not completed for any BAPs, the **Recommended medicines** list **will be empty**.

o To delete the profile, select the **Recommended** tab, click the list of medicines with the right mouse button (or click an empty window) and select the **Default** profile.



VOLL ELECTROTHERAPY

General information

Electric acupuncture or reflexotherapy is method of a reflex treatment, based on the influence of electric current of microampere range on biologically active points (BAP) of the human body. By way of impact on BAP two methods are distinguished:

- **Electroacupuncture** — treatment with use of a needle for acupuncture pre-inserted into BAP;
- **Electropuncture** — treatment without hurting the skin surface.

The system is intended for **electropuncture** by Voll's technique based on **Voll diagnostics**. The method involves influence on acupuncture points with electric signal with voltage of up to 20 V and frequency of 0.1–10 Hz or floating frequency. The device for therapy is the same as that for diagnostics. It is run by computer. All treatment techniques (electric signal parameters, acupuncture points for treatment, exposure) assigned automatically by the system for the most appropriate therapeutic modality. A system user also has the opportunity to select pathologic BAPs identified during the **Voll diagnostics** and correct the prescribed medicine manually before the treatment starts. Besides, it is possible to change electric signal parameters during the therapy process depending on patient's feeling or the treatment efficacy. The system allows to monitor the point state during treatment by meter reading on Voll's scale with intervals of 10 seconds. The readings are presented clearly in graph form. According it, the treatment process could be assessed.

The mechanisms of therapeutic effect

In classical acupuncture BAPs matching certain organs are stimulated using gold, silver or steel needles. In electropuncture for the same purpose the low-frequency pulse current from the electropuncture device is used. Ways of electrode placing are the same as in electroacupuncture diagnostics. Electrotherapy is intended to control physical, chemical and electric processes in intracellular and extracellular space.

The ***Master*** device generates current pulses within a range from 0.1 to 10 Hz, empirically selected by Voll R. Depending on program settings and position of the slide switch, it is possible to perform three different kinds of therapy:

1. Therapy with frequency of 10 Hz. This is the universal treatment and can be used in all cases.

2. Therapy with specific for the certain organ and nosology frequency in the range from 0.1 to10 Hz. It has the best effect but only applicable if it is known precisely which frequency is required for the treatment of this particular disease.

3. Therapy with vary frequency from 0.1 Hz to 10 Hz. It has a broader impact on different organs and systems. This type of therapy is used when frequency required for treatment of the particular disease is unknown. It is suitable for beginning users and for using in daily practice.

Electropuncture procedure

Electropuncture is prescribed for painful conditions of various genesis, and as a treatment option instead of acupuncture. The impact points are selected on the basis of the **Voll diagnostics** system prescription.

During procedure a patient should be in lying position. Areas intended to be treated are stimulated simultaneously or sequentially with a roller electrode. For the electropuncture, the plate and cylindrical electrodes (during quadrant electropuncture) or the search probe (during electropuncture by BAPs) are used. For the electrical conductivity increase, it is necessary to put a water-wet cotton ball under the electrode. Besides, wet the tip of the electrode probe. To perform microelectrophoresis, a cotton ball should be wetted with solution of defined composition. Connect the electrode probe or the roller electrode to the **red** plug (active). Connect the cylindrical electrode (passive) to the **black** plug.

There are following types of pulse therapy:

1. **Cross-hatching (hatching).** A certain painful site is treated with the electrode probe, that is moved fast along the painful area to one side and another without much pressing. While doing so, the voltage level shall be gradually increased until patient's limit of tolerance. Cross-hatching is finished when skin gets noticeably red. It is performed with frequency of 10 Hz.
2. **Moxa (cautery).** It is performed with electrode probe applying directly to the skin (the electrode probe remains fixed). Short, strongest voltage pulses are delivered. It is performed with frequency of 10 Hz.
3. **Current flow.** The affected part of the body or a BAP is treated with voltage pulses with intensity causing formication but not tenderness. It is performed using specific frequency for the certain organ or nosology, or, if it is unknown, a floating frequency is used.
4. **Rolling by roller electrode.** The rolling is, above all, a non-specific superficial therapy of certain skin areas (Zakharyin-Head tender zones). In terms of acupuncture, the therapeutic effect of rolling can be explained by stimulation of channel divergences in the treated area, which resulted in energy exchange increase between individual meridians.

Connect the roller electrode to the red plug of the patient cable. A patient takes the passive cylindrical electrode (connected to the black plug) into one hand and grips the roller electrode by insulated handle with the other hand.

Usually, a patient performs rolling himself. The areas on the back are rolled by assistant, while the patient holds the electrode in his right hand. An affected area, including zones with related lymph nodes and lymphatic vessels, is treated by the roller electrode with moderate pressure. It is advisable to hold the roller electrode for a while in the center of the affected area to enhance the therapeutic effect.

If possible, areas with regional lymphatic glands are rolled at first, then lymphatic vessels originating from them, and after that an affected area itself, because usually there is a significant lymphatic congestion in such zones.

Rolling duration is 15 minutes. It is possible to repeat the procedure several times during the day, but between sessions the intervals should be for at least 1 hour each.

When conducting the electropuncture therapy, the following simple rules are to be followed:

- Setting voltage values, please note that delivery of pulses should *never* cause any pain (except for moxa and cross-hatching).
- A negative voltage supply to active electrodes results in the conductance value increase (i. e. the energy level increases). A positive voltage supply "rolls out" the energy, the BAP values decrease.
- The more acute the pathological process in the body, the less voltage should be used.
- In chronic disease processes higher voltage is used.
- You should monitor the BAP state on the graph during the therapy process. If there is any sign of deterioration, it is necessary to stop therapy immediately.

Energy imbalance restoration (Conductance therapy)

As theoretically ideal energy state in electropuncture diagnostics is considered a state without value swings and

- the conductivity value (hand–hand lead) is within the normal range of 82–86. Respectively,

- all BAP measurement values should be normal, corresponding to 50.

In that ideal case a patient is healthy in respect of energy state; no therapy in order to align the energy balance is required. Otherwise it is necessary to "roll-in" or "roll-out" the energy.

Therapy in order to "roll-in" the energy is to apply the negative or alternating pulse current with voltage level causing formication (pins and needles sensation) in a patient. Shall be performed as follows:

1. Move to the **Electrotherapy** menu

2. Select any tab (Procedure room, Therapy by nosologies, or Therapy by effects).

3. For the therapy by quadrant leads it is necessary to put second cylinder on the red patient cable plug and give the electrodes into patient's hands (in therapy by the hand–hand lead). When the therapy by the hand–foot or foot–foot lead is carried out,

it is necessary to connect the foot electrode to the corresponding patient cable plug and put the foot electrode under the patient's foot.

4. Set in the program:

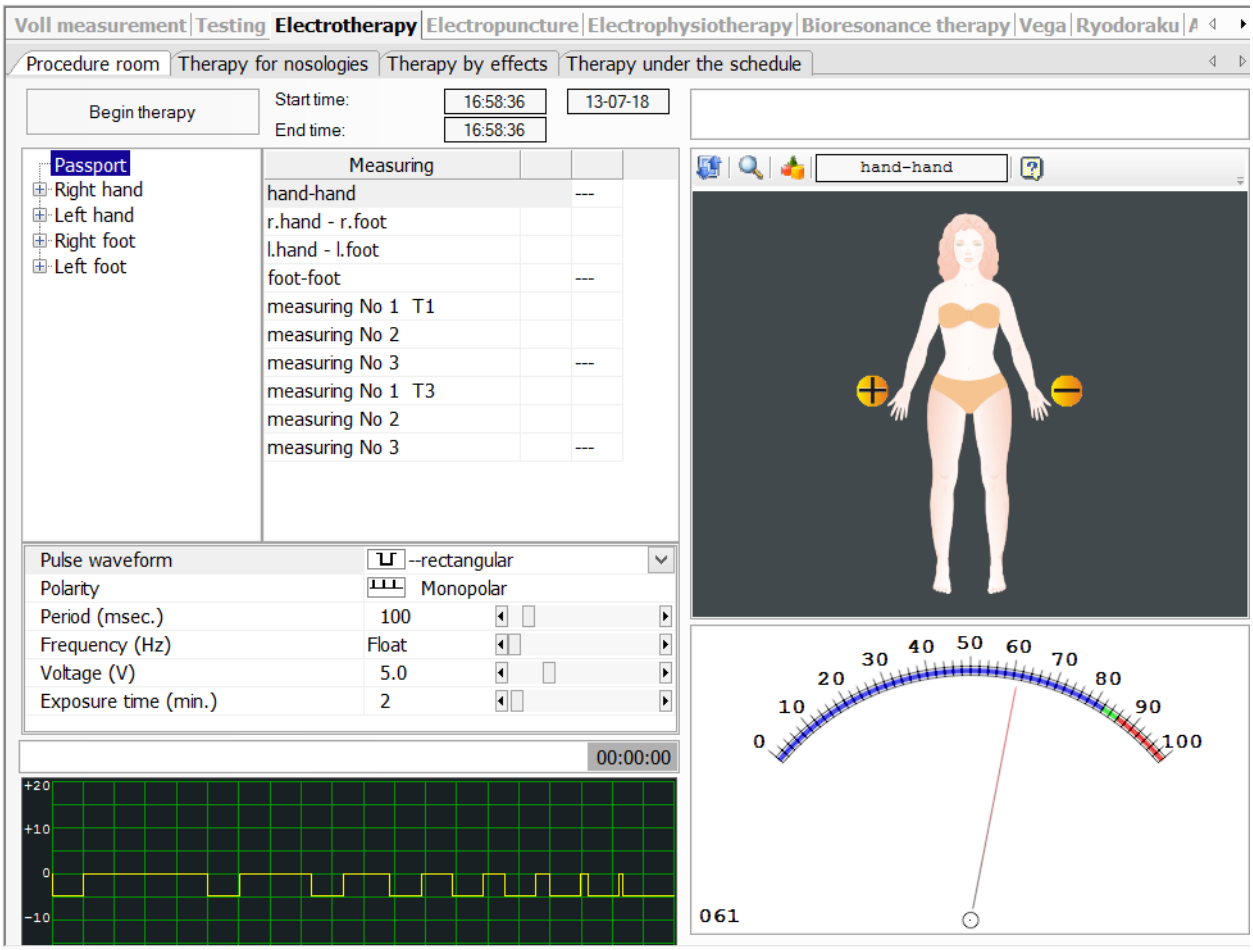
pulse shape **rectangular (negative)**

Duration **100**

Frequency **10 Hz (or floating)**

Voltage **5V (or less)**

Therapy duration **2 minutes**



5. Click the **Begin therapy** button.

6. Monitor closely the conductivity increase in the graph and gradually increase the voltage.

7. The therapy is finished after achievement of normal values.

With the rapid growth, the achieved conductivity value usually does not remain for long. The discomfort is possible along the voltage level increase. It should not last long, otherwise it is necessary to stop the therapy session. The longest lasting session of therapy in order to "roll-in" the energy must not exceed 30 minutes. It is necessary to make pauses of about 20 minutes between sessions.

Therapy in order to "roll-out" the energy usually is performed with use of the low-frequency positive pulses. Shall be performed as follows:

1. Move to the **Electrotherapy** menu

2. Select any tab (Procedure room, Therapy by nosologies, or Therapy by effects).

3. For the therapy by quadrant leads it is necessary to put second cylinder on the red patient cable plug and give the electrodes into patient's hands (in therapy by the hand–hand lead). When the therapy by the hand–foot or foot–foot lead is carried out, it is necessary to connect the foot electrode to the corresponding patient cable plug and put the foot electrode under the patient's foot.

4. Set in the program

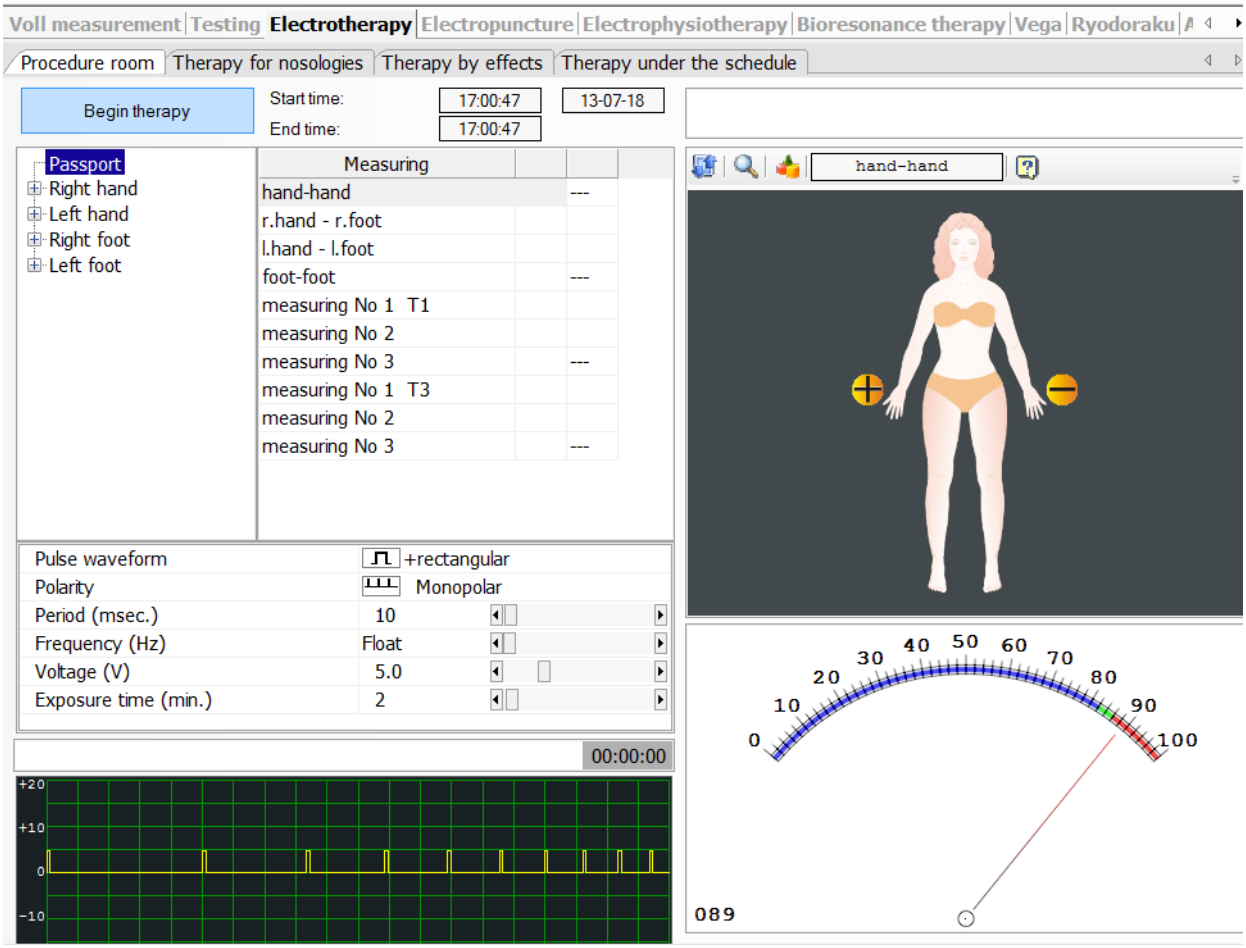
pulse shape **rectangular (positive)**

Duration **10**

Frequency **10 Hz (or floating)**

Voltage **5V (or less)**

Therapy duration **120 s**



5. Begin therapy.

6. Briefly (for 3–4 seconds) increase the voltage level until pins and needles sensation arises in a patient, then reduce it again to 5 V or less.

7. Monitor the value decrease in the graph and repeat the brief voltage increase several times.

8. The therapy is finished after achievement of upper normal level of conductivity.

9. You should stop to “roll-out” the energy if a patient starts to yawn or experience severe fatigue.

Usually every therapy session in order to “roll-out” the energy lasts no more than 15 minutes. It is advisable to make pauses of about 15 minutes between sessions. It is possible to achieve the effect of energy decrease if you just ground a patient.

Often the value decreases no more than 1–2 conditional units. However, even that is enough for vitality enhancement. The long term use of the pulse current can be counterproductive. Once decreased almost to normal range, the conductivity value may increase again as a result of follow-up therapy sessions. In that case you should stop the therapy immediately and try to continue only the next day.

Note. The energy excess is less harmful than the lack of energy.

Indications and contraindications

The electropuncture is the most individual approach to treatment, aimed primarily at normalizing of affected functions of a sick person. Its main effect is harmonization of the body vital activity and stimulation of immunodefences.

The method is effective in treatment of functional disorders related to small organic changes and less effective in diseases related to significant organic changes.

Such diseases as cancer, dysentery, cholera, severe tuberculosis, syphilis, contagious skin diseases, bacterial infections (acute fevers with high temperature and infectious diseases) should be treated with tools of modern medicine.

Electropuncture efficacy is most pronounced in such symptoms and conditions as chill, fever, headache, heaviness in the head, dizziness, buzzing in ears, stiffening of joints, fatigue, insomnia, spinal deformity, backache, pain in forearms and hands, constipation, anemia, neuralgia, as well as in following conditions:

Pulmonary diseases: bronchitis, cough, pleurisy, pneumonia;

Cardiac diseases: arterial hyper- and hypotension, angina pectoris;

Gastroenterological conditions: gastritis, stomach and duodenal ulcer, cholecystitis, heartburn, hiccup, colitis, meteorism, stomach spasms, esophagospasm, obesity;

Neurological disorders: headache, dizziness, depression, thoracal and lumbosacral radiculitis, sleep disorders, cervicobrachial syndrome, different neutrites (of facial, ulnar, fibular, and median nerve);

Arthrological diseases and traumas: arthralgia, joint pain, injuries, contusions;

Otolaryngologic diseases: otitis, rhinitis, tonsillitis, pharyngitis;

Dental illnesses: toothache (complicated tooth decay, pain in parodontosis, etc.), trigeminal neuralgia, stomatitis, parodontosis;

Urological conditions: impotence, urinary incontinence, pyelonephritis, cystitis, nephrolithiasis, urethritis, prostatitis;

Obstetrics & Gynaecology diseases: frigidity, adnexitis, amenorrhea, endometritis, premature menopause.

In general, the electropuncture has no proven side effects, but there are some **contraindications** for this method:

age under one year old and over 75 years old;

different kinds of tumors, regardless of location;

pregnancy (after the fifth month);

acute myocardial infarction;

respiratory and cardiovascular diseases, decompensation stage;

acute febrile diseases of uncertain aetiology;

active tuberculosis;

acute infectious diseases;

acute psychosis;

thrombophlebitis;

state of inebriation;

cachexia;

when a patient has a heart pacemaker.

In addition to the main contraindications, the relative ones should also be considered:

– conditions immediately after physical overwork or psychological shock;

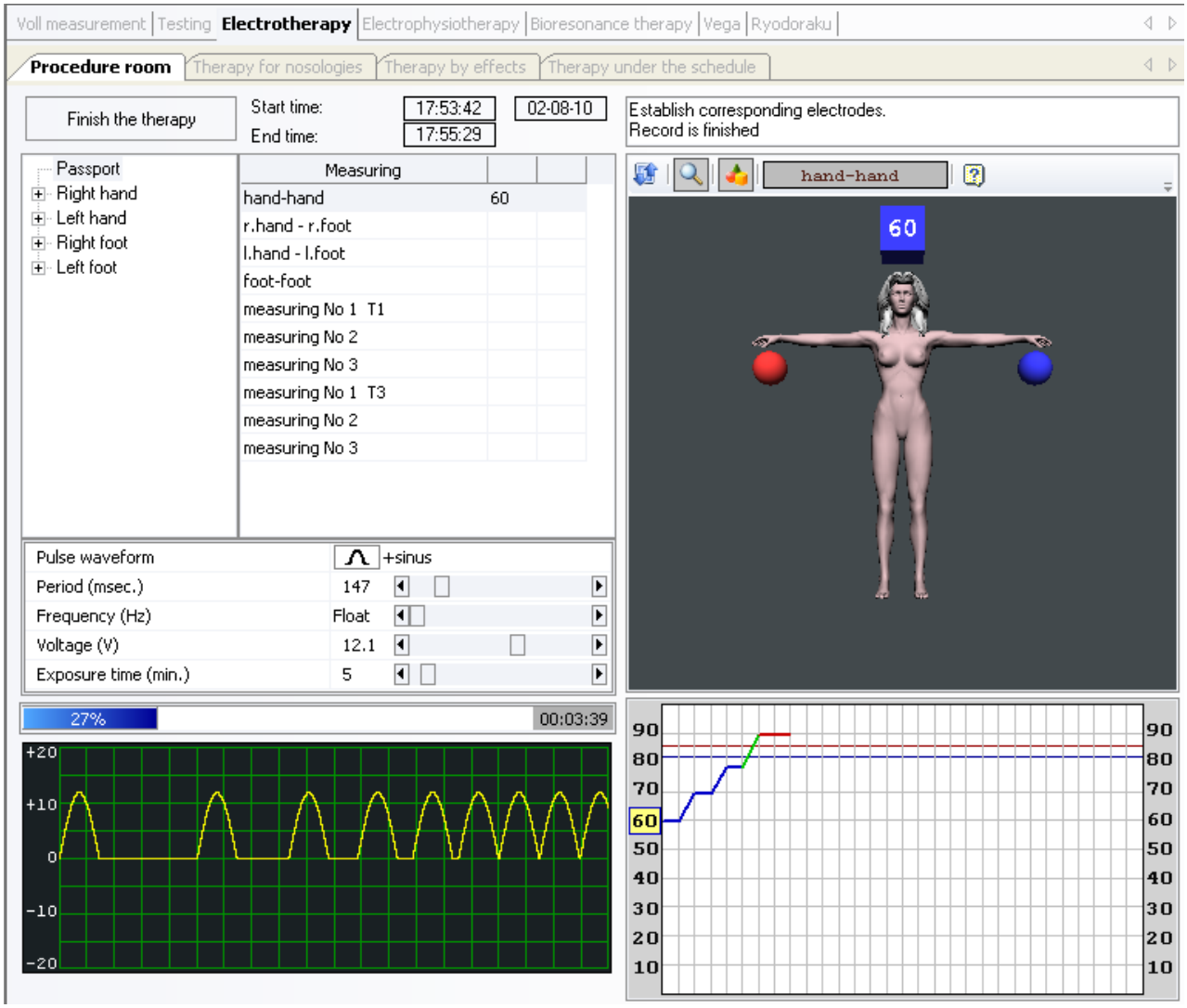
– menses.

During the electropuncture course a patient should avoid all alcohol because it can cause worsening of a pathological process.

Procedure room

This window is for the electrotherapy by all meridian points and quadrant leads. By default, the low voltage value of 5 V is set for the therapy beginning in order not to cause discomfort in a patient. It is possible to change the pulse parameters during the therapy process depending on the displayed graph of the treatment course. You can change shape, duration of impulses or stop therapy at all in the absence of visible improvements.

To start therapy, click the ***Begin therapy*** button. The device will switch to the diagnostic mode, and you can perform necessary measurements and therapy, following instructions and images on the screen. To end therapy, click the ***Finish therapy*** button. To clear therapy results, click the ***Clear*** button. In the right window the image will be displayed. It will show either BAP that you need at the moment, or the quadrant lead, as well as a pointer-type indicator displaying the current measuring value. During therapy session, the graph of therapy impact on the BAP state over time is displayed. After measurements the point factor will be displayed in graphic form in a histogram.



Quadrant leads therapy order

- Connect plugs of device wires to cylindrical electrodes.
- Wet the cylinders a bit.
- Take cylindrical electrodes into the hands with respect to polarity as shown in the image. The cylindrical electrode connected to the red plug is "+", connected to the black plug is "–".
- Click the ***Begin therapy*** button.
- The program will perform the initial testing.
- Wait for the end of the electrotherapy, no taking the electrode off the BAP. The therapy process is displayed as a progress bar.
- Perform the final testing similar to the initial testing.
- According to the results of the final testing, it is concluded whether the factor has improved or not.

BAP therapy order

- Connect the red plug of device wire to the ebonite electrode probe. Connect the black plug of device wire to the cylindrical electrode.
- Click the ***Begin therapy*** button.
- Wet the tip of the probe electrode a bit.
- Press a tip of the probe electrode to the BAP.
- Perform the initial testing of the point shown in the image. The program will perform three measurements consecutively, do not take the electrode off the BAP during all of them. If the measurements were performed correctly, the point factor will be displayed in a histogram. Otherwise, the program will repeat the measurements for the BAP.
- Wait for the end of the point electrotherapy, no taking the electrode off the BAP. The therapy process is displayed as a progress bar.
- Perform the final testing similar to the initial testing.
- According to the results of the final testing, it is concluded whether the factor has improved or not.

You can change parameters during therapy process:

Electric current parameters

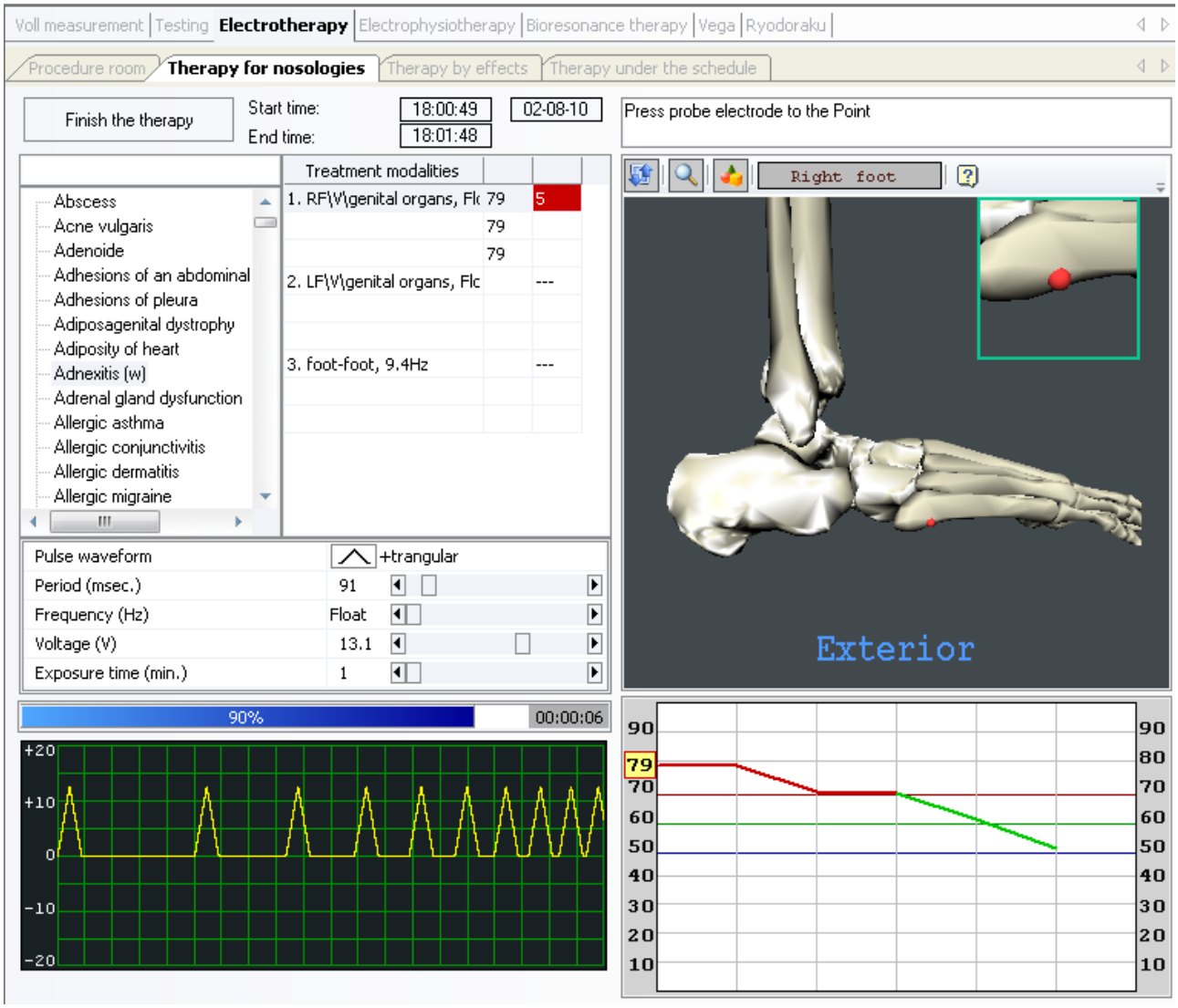
- The pulse shape — rectangular, triangular and sinusoidal (positive or negative)
- Impulse duration (in milliseconds): 1–1000 ms
- Frequency (Hz): floating or in range of 1–20 Hz
- Voltage range (V): 1–20 V

Therapy duration

- Time (in minutes): 1–60 min

Therapy by nosologies

This window is for the electrotherapy by certain diagnoses. The voltage (pulse amplitude) should be so set that the individual patient's threshold of sensitivity is reached in the form of a slight tingling under the electrodes. By default, the voltage value of 5 V is set in order not to hurt a patient. To start therapy, click the ***Begin therapy*** button. The device will switch to the diagnostic mode, and you can perform necessary measurements and therapy, following instructions and images on the screen. To end therapy, click the ***Finish therapy*** button. To clear therapy results, click the ***Clear*** button. In the right window the image will be displayed. It will show the BAP that you need at the moment, as well as a pointer-type indicator displaying the current measuring value. During therapy process the graph of therapy influence on the BAP state over time will be shown. After measurements the point factor will be displayed in graphic form in a histogram.



Therapy order

- Select the diagnosis you need and desired BAP from the list for selected diagnosis.

- Choose the electric current parameters and therapy duration. (Recommended values are selected automatically)
- Click the ***Begin therapy*** button and perform the initial testing of the point. The program will perform three measurements consecutively. If the measurements have performed correctly, the point factor will be displayed in a histogram. Otherwise, the program will repeat the measurements for the BAP.
- Wait for the end of the point electrotherapy, no taking the electrode off the BAP. The therapy process is displayed as a progress bar.
- Perform the final testing similar to the initial testing.
- According to the results of the final testing, it is concluded whether the factor has improved or not.

You can change parameters during therapy process:

Electric current parameters

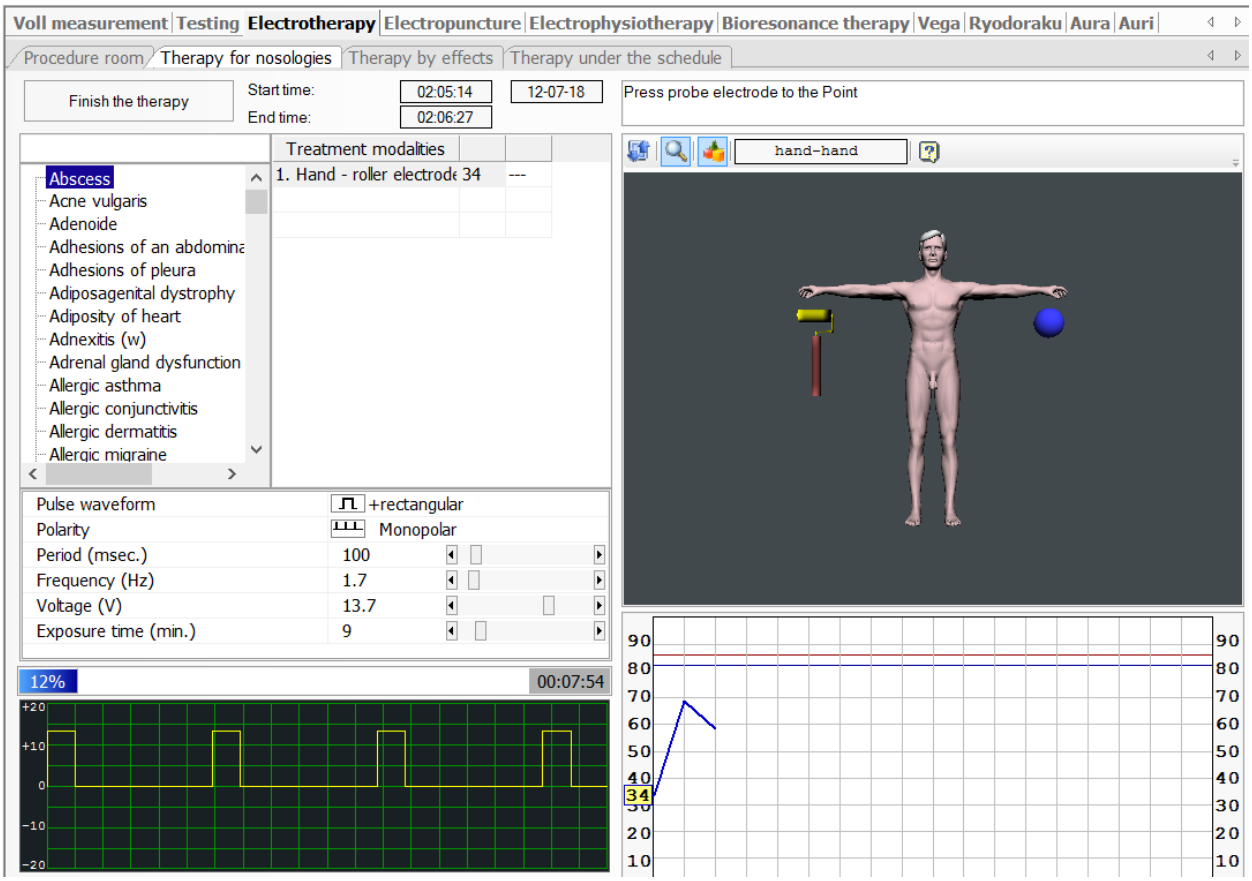
- The pulse shape — rectangular, triangular or sinusoidal (positive or negative)
- Pulse duration (in milliseconds): 1–1000 ms
- Frequency (Hz): floating or in range of 1–20 Hz
- Voltage range (V): 1–20 V

Therapy duration

- Time (in minutes): 1–60 min

Rolling with the roller electrode

According to some kinds of therapy by nosologies (for example, by abscess zones), it is advised rolling with the roller electrode. It is shown in the program:



The rolling is, above all, a non-specific superficial therapy. In terms of acupuncture, the therapeutic effect of rolling can be explained by stimulation of channel divergences in the treated area, which resulted in energy exchange increase between individual meridians.

Connect the roller electrode to the red plug of the patient cable. A patient takes the passive cylindrical electrode (connected to the black plug) into one hand and grips the roller electrode by insulated handle with the other hand.

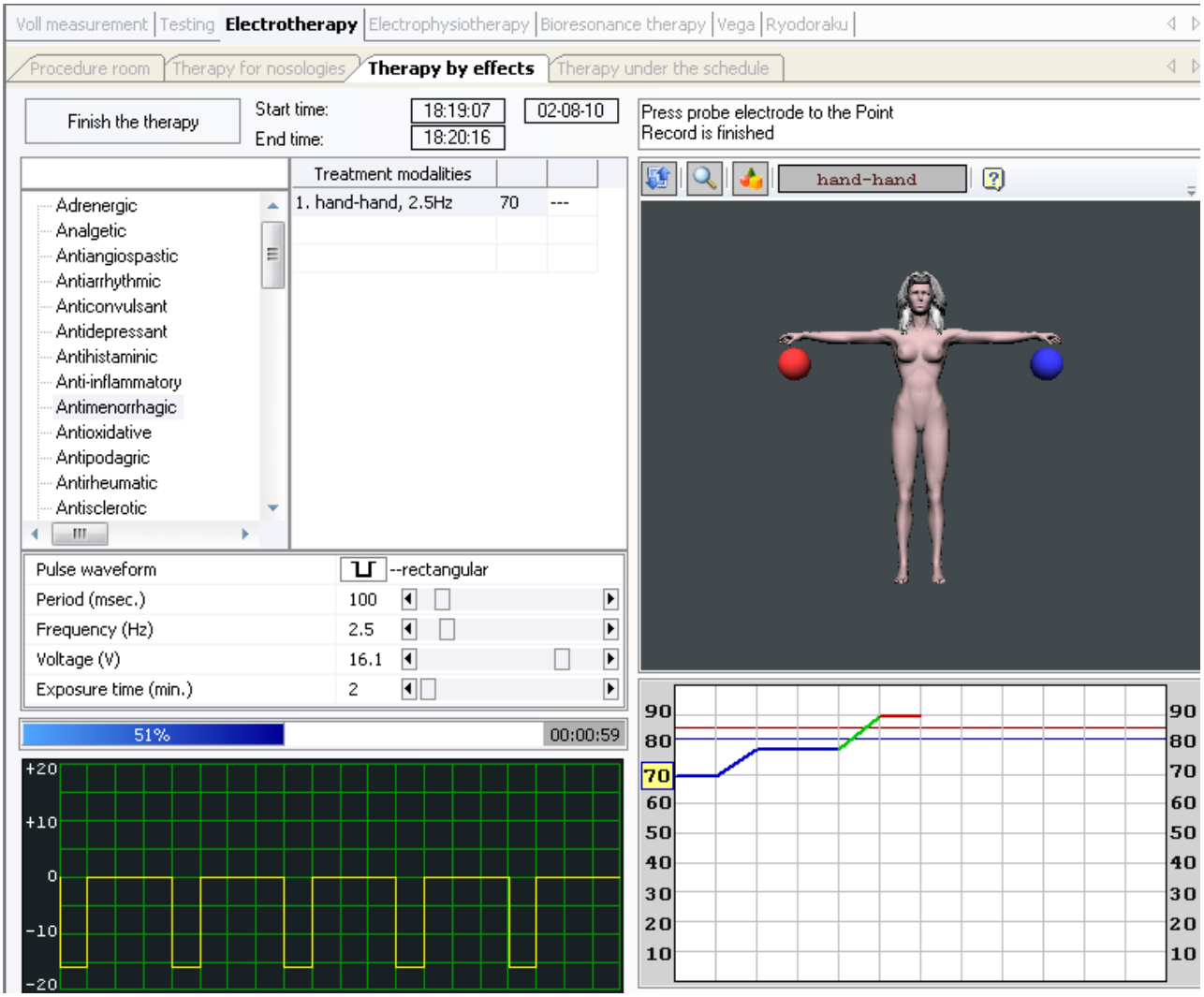
Usually a patient performs rolling himself. The areas on the back are rolled by assistant, while the patient holds the electrode in his right hand. An affected area, including zones with related lymph nodes and lymphatic vessels, is treated by the roller electrode with moderate pressure. It is advisable to hold the roller electrode for a while in the center of the affected area to enhance the therapeutic effect.

If possible, areas with regional lymphatic glands are rolled at first, then lymphatic vessels originating from them, and after that an affected area itself, because usually there is a significant lymphatic congestion in such zones.

Rolling duration is 15 minutes. It is possible to repeat the procedure several times during the day, but the intervals between sessions should be at least 1 hour each.

Therapy by effects

This windows is for the electrotherapy by effects in order to normalize the body state and regulate the certain body functions. The voltage (pulse amplitude) shall be so set that the individual patient's threshold of sensitivity is reached in the form of a slight tingling under the electrodes. By default, the voltage value is 5 V. It is advisable to wet hands or feet. To start therapy, click the ***Begin therapy*** button. The device will switch to the diagnostic mode, and you can perform necessary measurements and therapy, following instructions and images on the screen. To end therapy, click the ***Finish the therapy*** button. To clear therapy results, click the ***Clear*** button. In the right window the image of electrodes location will be displayed (therapy by effects is performed by leads only). It will also show a pointer-type indicator displaying the current measuring value. During therapy process the graph of therapy influence on the body energy level over time will be shown.



Therapy order:

- Select the necessary effect and the desired BAP from the list for the selected effect.

- Choose the electric current parameters and therapy duration. (Recommended values are selected automatically).
- Click the ***Begin therapy*** button and perform the initial testing of the point. The program will perform three measurements consecutively. If the measurements have performed correctly, the point factor will be displayed in a histogram. Otherwise, the program will repeat the measurements for the BAP.
- Wait for the end of the point electrotherapy, no taking the electrode off the BAP. The therapy process is displayed as a progress bar.
- Perform the final testing similar to the initial testing.
- According to the results of the final testing, it is concluded whether the factor has improved or not.

You can change parameters during therapy process:

Electric current parameters

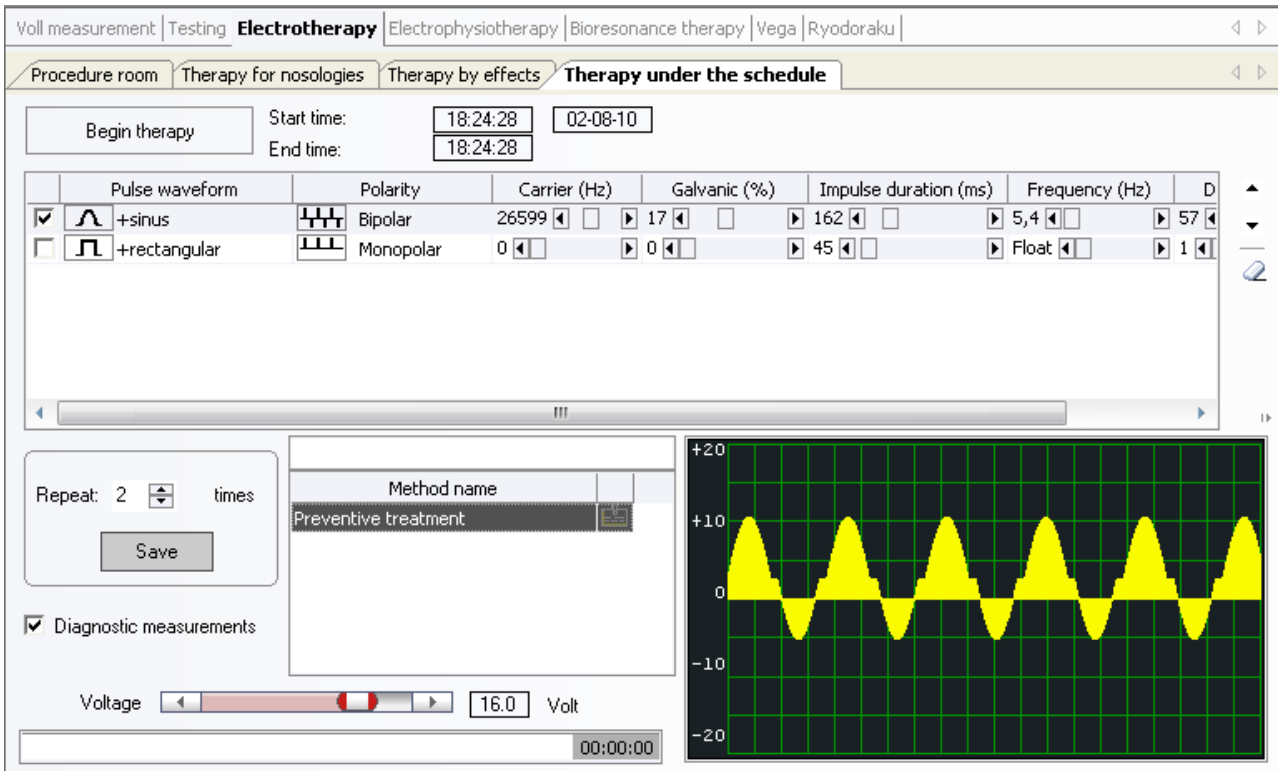
- The pulse shape — rectangular or triangular (positive or negative)
- Pulse duration (in milliseconds): 1–1000 ms
- Frequency (Hz): floating or in a range of 1–20 Hz
- Voltage range (V): 1–20 V

Therapy duration

- Time (in seconds): 10–300 s

Therapy under the schedule

This window is for the electrotherapy under the schedule. This offers to users expanded possibilities for individual therapy scheduling, setting pulse shape, its duration, sensitivity, etc. The technique's name can be saved for further use, all created frequencies will be saved. The pulses obtained as a result of constructing will be displayed on the screen.



To start therapy, click the ***Begin therapy*** button. The device will switch to the diagnostic mode, and you can perform necessary measurements and therapy, following instructions and images on the screen. To end therapy, click the ***Finish therapy*** button. To clear therapy results, click the ***Clear*** button. In the right window the image will be displayed. It will show the current pulse shape or the graph of therapy displaying the current measuring value over time.

Attention This mode implies that a user has a basic knowledge of electrotechnics. If parameter setting is incorrect, the mode may fail to start due to the mutually exclusive values.

Therapy order

- At first, you should make a therapy schedule. You should tick the appropriate boxes and select necessary parameters of electric current as well as exposure in seconds. The pulse duration of zero clearly indicates the treatment discontinuation (in the moment of a such mode the therapy is discontinued).
- If the **Diagnostic measurements box** is ticked, the program performs current measurement of a point by Voll upon completion of the list.
- The number of repeats for the therapy list you can set by selecting the necessary number in the **Retry** field.

- If you need to save the created therapy technique, you should click the ***Save*** button and give a name to the technique.
- Click the ***Begin therapy*** button.
- Wait for the end of the point electrotherapy, no taking the electrode off the BAP. The therapy process is displayed as a progress bar.
- Upon completion of all therapy stages, the program will switch to the testing mode.

You can change parameters during therapy process:

Electric current parameters

- Voltage range (V) is 1–20 V

ELECTROPUNCTURE

There are several ways of influence on biologically active points (BAP): needle therapy, cauterization, acupressure (point massage), thermo-, cryo-, laser-, magneto-, ray puncture, and also electric reflexotherapy. Electric acupuncture or reflexotherapy is a reflex therapy method, based on the influence of electric current of microampere range on BAPs of the human body. By way of impact on BAP two methods are distinguished: electroacupuncture (treatment with use of a needle for acupuncture pre-inserted into the BAP) and electropuncture (treatment without hurting the skin surface).

For the electropuncture direct and pulse currents are used. To lead the current to the BAP, the electrode of less area is used. It is called active. Second electrode is called passive. It is believed that negative active electrode potential leads to the BAP conductivity increase (restorative, stimulating, resolving effects are provided) and positive potential decreases the BAP conductivity (sedative, inhibitory anti-inflammatory effects are achieved). The inhibitory electrotherapy is contraindicated in children and elderly persons.

The BAP electrical properties are constantly subject to change in a wide range depending on severity of the body imbalance. The BAP electrical conductivity increases if the corresponding organ has a disease. When the normal functional state of the organ is restored, the BAP electrical conductivity decreases. In various diseased conditions the lines of corresponding meridians have increased electrical conductivity. A comparison of the BAP increased electrical conductivity and surrounding tissue conductivity allows localization of the BAP. The BAP conductivity during diagnostics are usually measured with straight and reverse polarity. If in case of straight polarity the conductivity value is higher, it indicates an inflammatory process (BAP sedation is required). If in case of reverse polarity the conductivity value is higher, it indicates an degenerative process (the stimulating effect is required). The greater the asymmetry of values during measurements in different polarities, the more significant a disorder. The increase of conductivity asymmetry reflects the information about body immunodefences (the faster the asymmetry develops, the more compromised an immunity).

The electropuncture is effective in the treatment of functional disorders related to small organic changes and less effective in diseases related to significant organic changes. Electropuncture efficacy is most pronounced in such symptoms and conditions as chill, fever, headache, heaviness in the head, dizziness, buzzing in ears, stiffening of the joints, fatigue, insomnia, backache, pain in extremities, constipation, anemia, neuralgia, etc.

The treatment by using the electric reflexotherapy should be started only after thorough medical examination. A doctor has to follow the instructions and bear in mind contraindications for this method of therapy.

Contraindications:

– age under one year old or over 75 years old

– different kinds of tumors, regardless of location

– pregnancy

– acute myocardial infarction

– respiratory and cardiovascular diseases, decompensation stage

– acute febrile diseases of uncertain aetiology

– active tuberculosis

– acute infectious diseases

– acute psychosis

– thrombophlebitis

– state of inebriation

– cachexia

– the presence of an artificial heart pacemaker

– menses

Electropuncture procedure

Usually for one session no more than 5–6 BAPs are used. For influence the BAPs having the highest conductivity value and disbalance are chosen. Duration of exposure on one BAP must not exceed 6 min (duration of exposure must be shorter if much current is used). To localize the BAP more precisely, it is necessary to guide by its topographic location. Avoid hurting major vein and arteries. Do not touch BAPs in the areas of skin damage and neoplasms (warts, lipomas, etc.).

It is necessary to precisely find a BAP for the treatment of chronic painless conditions. In acute and subacute painful conditions it is not necessary to precisely find a BAP. Besides, in that case it is possible to influence not only on BAPs using the classical prescriptions, but also on points of maximal tenderness, hyperemia, etc.

Using a combination of BAPs, you should set the exposure scheme (for example, crisscross order) because the long-term activation of the same BAPs leads to their adaptation. It decreases the therapeutic effect. It is important to adhere to a certain order of influence on the BAP during procedure. If it is necessary to influence BAPs in different body zones, you should

apply the following order: points in the upper body, lower body, back, abdomen. It is preferable to start every time with Yang meridian BAPs, then proceed to Yin meridian BAPs.

First session of electropuncture reflex therapy should be performed with particular caution, avoiding intense irritation and carefully monitoring the body response. Before first session it is necessary to assess patient's general appearance, defenses of the body or asthenization level, determine patient's nervous system type. Depending on these parameters, the BAP influence techniques are selected. During session a doctor should monitor the patient's condition carefully because signs of syncopal condition (cold sweat, nausea, paleness), loss of consciousness or paradoxical response can occur. The blood pressure should be monitored as well. The patient's comfortable posture (sitting or lying) reduces a possibility of negative reactions.

The electric current intensity during therapeutic influence depends on BAP location. Usually, they are located in muscle recesses and conjunctions, in muscle bundles, between skin folds. If BAPs are located under the massive muscular layer (for example, in the gluteal area), it is permitted to use the maximum current (up to 400 μA). For BAPs located in areas of the back, lumbosacral spine and lower extremities, the electric current of 200–250 μA is used, and 70–100 μA for the abdomen area.

To select the electric current intensity, a doctor should be guided by the following rules:

– chronic diseases and asthenization require minimum values of the current intensity;

– when area of maximal tenderness is treated, the current intensity is determined by subjective feeling of a patient.

During the procedure a patient has slight bursting, tingling, warm feelings. That sensation should not be painful, it should be pleasant. Sharp, severe pain in the point of influence is undesirable because it can cause worsening of a disease.

Energetic system of the human body has a meridian structure composed of the main constant meridians, specific meridians and some longitudinal and transverse channels. According to perceptions of the Orient, Yang and Yin meridians are distinguished depending on the organ with which the meridian is associated. The human body organs that have a lot of blood and little energy belong to the group of Yin organs: P (lungs), RP (spleen–pancreas), C (heart), R (kidneys), MC (pericardium), F (liver). Their main function is digestion and accumulation of nutrients, vital energy Qi, blood and fluids of the human body. The organs that have a lot of energy and little blood belong to the group of Yang organs: GI (large intestine), E (stomach), IG (small intestine), V (urinary bladder), TR (three heaters), VB (gall bladder). Their main function is digestion, nutrient intake and elimination of waste from the body. Two meridians (anterior median and posterior median) are so-called "wonderful" meridians. They are not associated with certain organs, but control the whole body. A state of energy balance (Yin and Yang) is a basis for the perfect health.

To normalize energy in the meridian, it is first necessary to influence on sedative and stimulating BAPs. In case of energy excess (Yang symptoms), the sedative BAP is stimulated in the period of maximum energy in the meridian (i. e. during its two-hour activity). In case of energy lack (Yin symptoms), the stimulating BAP is stimulated in the period of opposite meridian two-hour activity time.

Important:

– When there is a significant excess of energy (Yang symptoms), the stimulation is prohibited.

– When there is a deficiency of energy (Yin symptoms) the sedation is prohibited (it is weaken the body additionally).

Influencing on meridian BAPs in chosen combination, the necessary sequence should be strictly followed: in energy excess (for the meridian sedation) you should move against the flow of energy in the meridian; in deficiency of energy you should move to the direction of the energy flow. A failure to follow the principles of stimulation and sedation leads to deteriorating patient condition.

Besides, there are the following four laws for the energy alignment: “Mother-Son”, “Husband-Wife”, coupled (associated) organs, and “Midnight-Midday”.

The “Mother-Son” law is used, if the affected organ is resistant to energization through the stimulating BAPs of the corresponding meridian. In that case the preceding meridian (“Mother”) is stimulated and the subsequent meridian (“Son”) is sedated. It enables unloading of the affected organ which helps to restore its functions.

The “Husband-Wife” law is based on the fact that a disease of an organ, associated with the certain pulse point on the left hand, has an adverse impact on the organ associated with the same pulse point on the right hand (i. e. it is also at risk). This can be called a prophylactic law that indicates an organ at risk. Such organ requires a prophylactic therapy.

The law of coupled (associated) organs recognizes the energetic link between adjacent Yin and Yang organs. In case of affected functions of the Yang organ, the Yin organ associated with it is also at risk, and vice versa.

The “Midnight-Midday” law establishes a link between two organs which daily maximum activity is shifted by 12 h (they are in phase opposition), while the Yang organ is counterposed to Yin organ, and vice versa. According to this law, the stimulation of Yang organ during Yang time results in sedation of counterposed Yin organ. At the same time, the “Midnight-Midday” law indicates a risk for a disease of the organ if its daily minimum activity is coincided with daily maximum activity of the affected organ.

The discussed above four laws of energy alignment in meridians allow identifying the link between affected organ and four organs vulnerable to a disease in that case. Therapy of the one of four coherent organs has a favourable influence on the affected organ as well.

Adverse meridian	Parallel connection	Cross connection	Coupled organs	"Midday–Midnight"
C	P	MC	IG	VB
IG	GI	TR	C	F
V	TR	E	R	P
R	MC	RP	V	GI
MC	R	C	TR	E
TR	V	IG	MC	RP
VB	E	GI	F	C
F	RP	P	VB	IG
P	C	F	GI	V
GI	IG	VB	P	R
E	VB	V	RP	MC
RP	F	R	E	TR

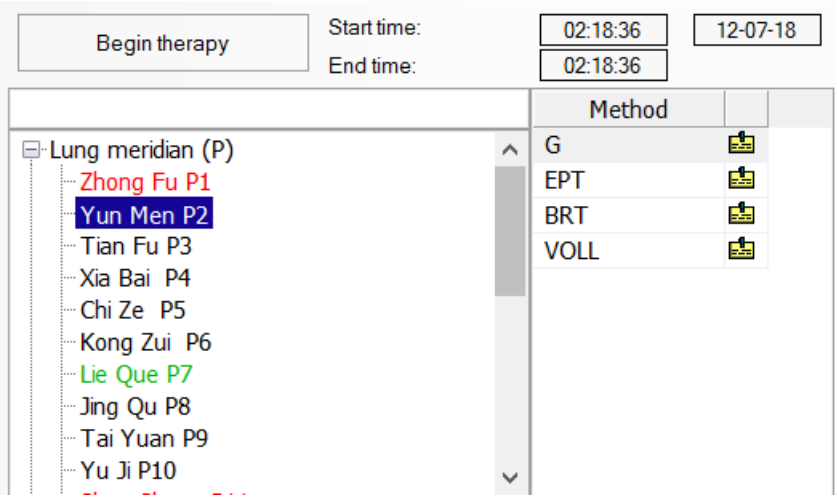
If two coupled main Yang and Yin meridians have imbalance of inner protective energy, it is aligned by Lo Transverse channels. They play regulatory role for the coupled meridians. They function when there are the energy excess in the main meridian (Yang symptoms) and the deficiency of energy in the coupled meridian (Yin symptoms), and vice versa. When there is the deficiency of energy in the main meridian and the energy excess in the coupled meridian, it is necessary to stimulate the ally point (U BAP) of that meridian and sedate the stabilizing linking Lo BAP of the coupled meridian. When there is an energy excess in the main meridian and the deficiency of energy in the coupled meridian, it is necessary to sedate the Lo BAP of the main meridian and stimulate the U BAP of the coupled one.

Meridian	Deficiency of energy		Energy excess	
	Sedate Lo BAP	Tone up U BAP	Sedate Lo BAP	Tone up U BAP

P	G16	P9	P7	GI4
GI	E40	G14	GI6	E42
E	RP4	E42	E40	RP3
RP	C5	RP3	RP4	C7
C	IG7	C7	C5	IG4
IG	V58	IG4	IG7	V64
V	R4	V64	V58	R3
R	MC6	R3	R4	MC7
MC	TR5	MC7	MC6	TR4
TR	VB37	TR4	TR5	VB40
VB	F5	VB40	VB37	F3
F	P7	F3	F5	P9

Especial biologically active points

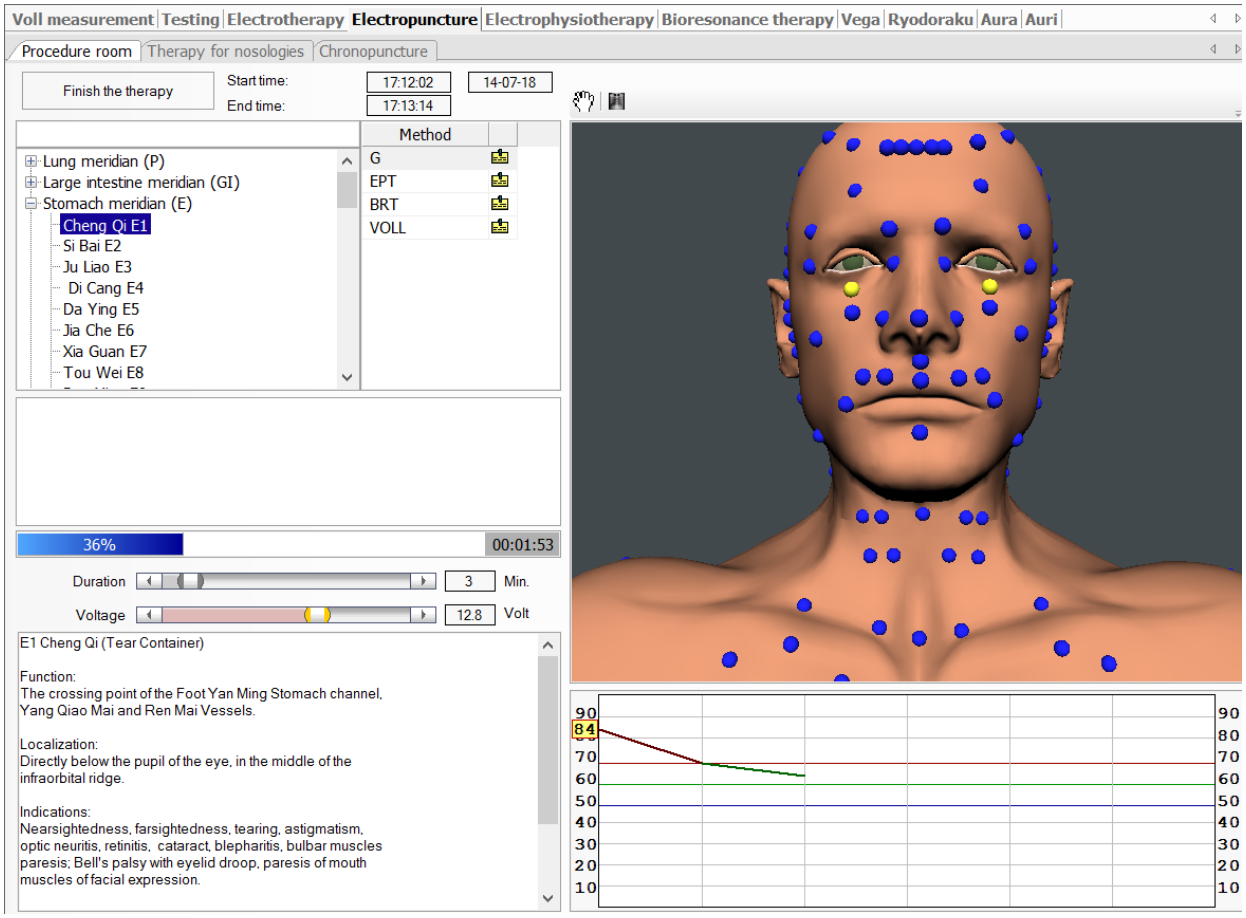
Medical beginners having relatively little experience are not advised using so-called **specific BAPs**. The impact on them can worsen the patient's condition, even to death. You should strictly take into account the time of the day, season of the year, phases of the moon, patient's astrological characteristics, when using these BAPs, and comply with the recommendations on these factors. It is recommended to take special care with BAPs on the neck, temples, and back of hands. Sometimes very low electric current results in such adverse events as nausea, dizziness, changes in heart rate, breath, blood pressure, etc. For example, impact on points GI17 can E30 can help in faintness or, conversely, it can lead to faintness. When exposing on the VC14, the range of effects extends from CPR to lethal outcome. In the program such specific BAPs are marked in red color.



Biologically active points providing general stimulating effect

These are BAPs providing general tonic effect, stimulating body defenses and creating a balance. These BAPs are available for self-treatment to keep physical health. Besides, in the treatment of different diseases it is advisable to add one or two points providing general stimulating effect to the list of BAPs for the therapy, and start sessions from them. In the program such BAPs providing general stimulating effect are marked in **green** color.

Procedure room

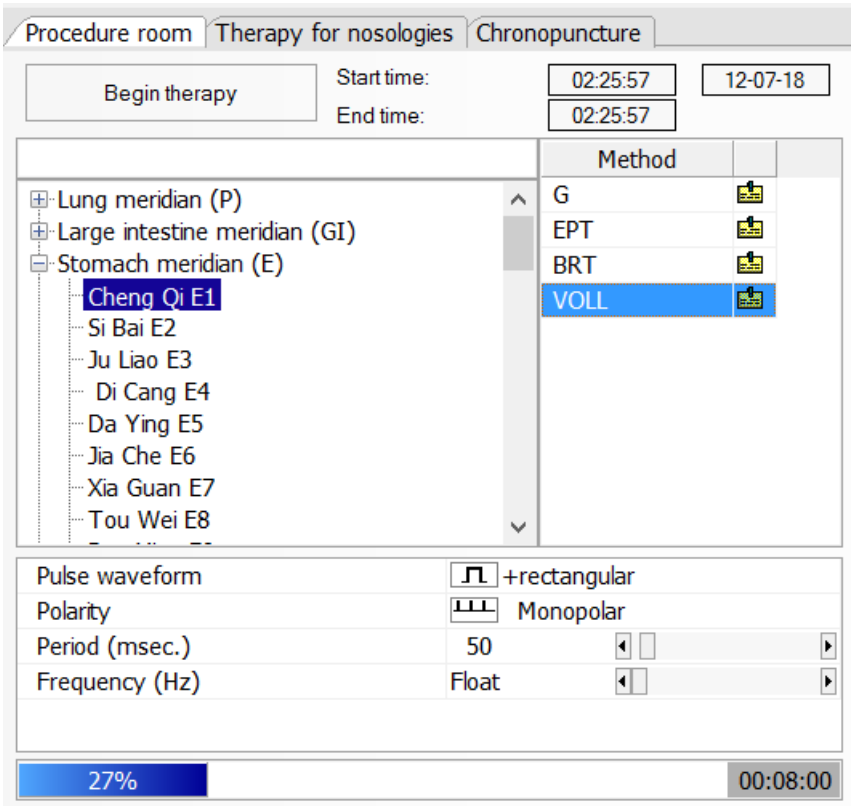


This window is for the electropuncture on BAPs. Besides, this window includes recommendations on stylostixis. To start therapy, click the ***Begin therapy*** button. The device will switch to the diagnostic mode, and you can perform necessary measurements and therapy, following instructions and images on the screen. To end therapy, click the ***Finish therapy*** button. To clear therapy results, click the ***Clear*** button. In the right window the image will be displayed. It will show the BAP that you need at the moment, as well as a pointer-type indicator displaying the current measuring value. During therapy process the graph of therapy influence on the BAP state over time will be shown.

BAP therapy order

- Connect the red plug of device wire to the ebonite electrode probe. Connect the black plug of device wire to the cylindrical electrode.
- Select from the list the electrotherapy technique you need.
- Click the ***Begin therapy*** button.
- Press a tip of the electrode probe to the BAP. The patient holds the cylinder in the hand.
- Perform the initial testing of the point shown in the image.
- Wait for the end of the point electrotherapy, no taking the electrode off the BAP. The therapy process is displayed as a progress bar.

You can change electric current parameters during therapy process and perform therapy using different techniques:



G — galvanic (direct) current

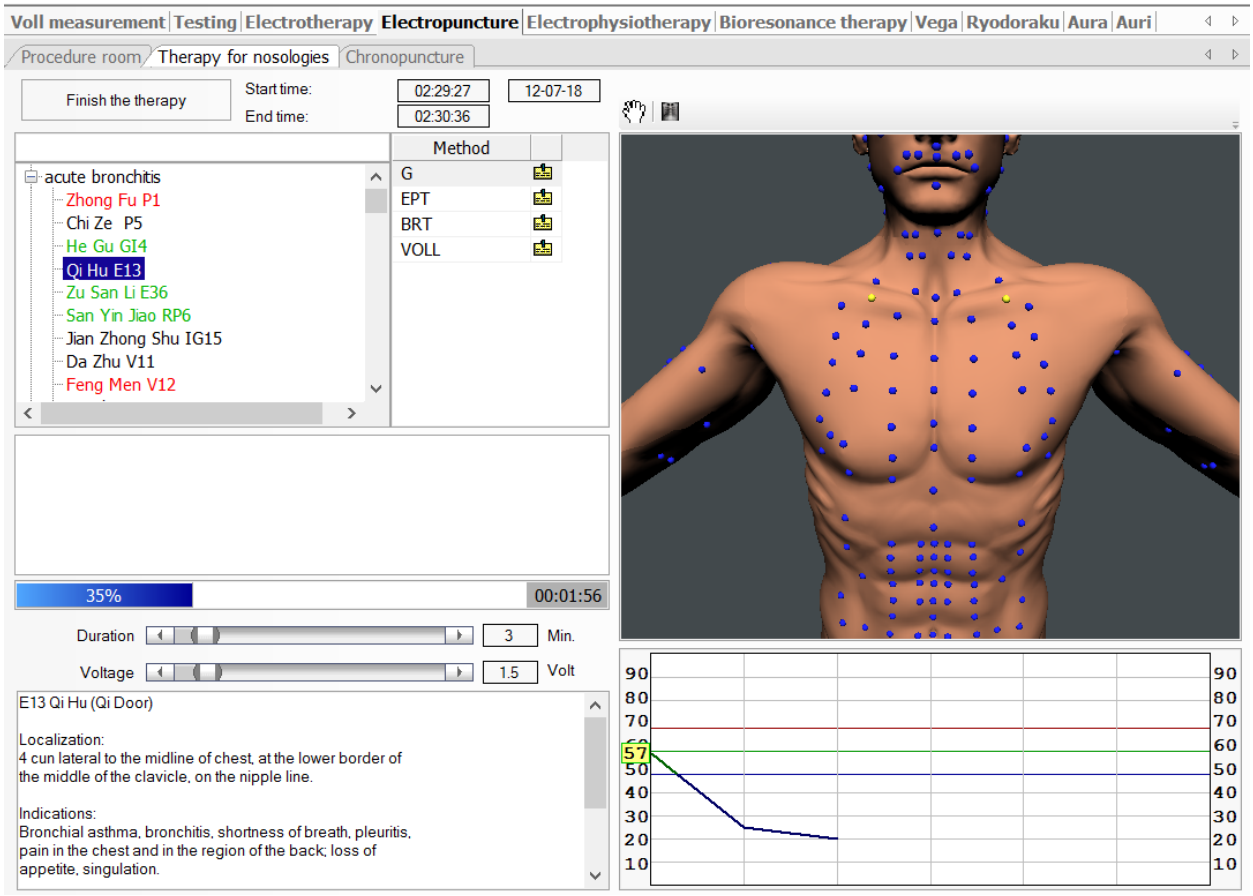
EPT — electropuncture therapy

BRT — bioresonance therapy

VOLL — Voll electrotherapy

For every technique its own signal parameters are set.

Therapy by nosologies



This window is for electrotherapy by nosologies. To start therapy, click the ***Begin therapy*** button. The device will switch to the diagnostic mode, and you can perform necessary measurements and therapy, following instructions and images on the screen. To end therapy, click the ***Finish therapy*** button. To clear therapy results, click the ***Clear*** button. In the right window the image will be displayed. It will show the BAP that you need at the moment, as well as a pointer-type indicator displaying the current measuring value. During therapy process the graph of therapy influence on the BAP state over time will be shown.

Therapy order

Select the diagnosis you need and desired BAP from the list for selected diagnosis.

- Choose the electric current parameters and therapy duration.
- Click the ***Begin therapy*** button.
- Press a tip of the electrode probe to the BAP. A patient holds the cylinder in the ipsilateral hand.
- Wait for the end of the point electrotherapy, no taking the electrode off the BAP. The therapy process is displayed as a progress bar.

You can change electric current parameters during therapy process as in the **Procedure room** window.

Chronopuncture (open point calculation)

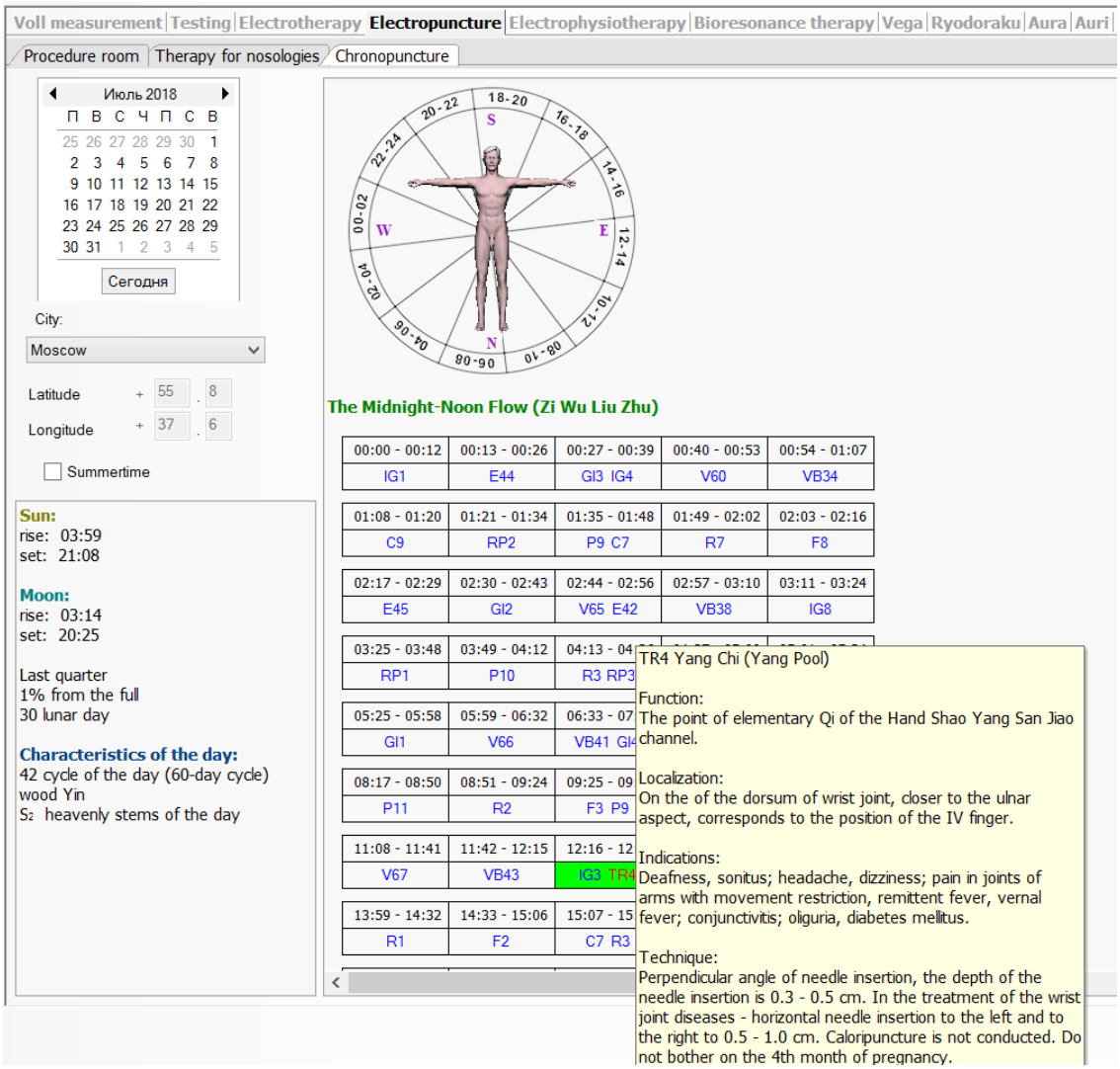
The Chronopuncture module is intended for recommendations about conducting the zhen jiu therapy in certain days depending on lunar, Jupiter and solar calendar, as well as patient location (coordinates on the surface of the Earth).

In ancient times, special attention was paid to understanding of impact of space on human body. No one was ever allowed to heal living beings without understanding and knowledge of aspects of astronomy and cosmology. A lunar calendar was developed and implemented in ancient China. Instructions, restrictions and preferences in regards to conducting the zhen jiu therapy were determined under that calendar. Besides, 60-phase luni-solar calendar was invented. It is largely used for calculation of opening and closing time of biologically active points.

In ancient times people also could tell time at night by the northern Plough location. According to its location, people in ancient China determined a direction of the heaven Qi flow. The ability to work with energy was given particular emphasis in zhen jiu therapy and massage. Primarily, a skill to feel the Qi was taken into account, as well as understanding of a direction of the energy flow, considering eight sides of horizon at different times of day and the year. Therapist position (his/her hands and back) in regards to direction of the heaven Qi flow allowed carrying out the high-quality correction of Yin (Earth) and Yang (Space) energies in a patient. It also allowed a therapist to save his/her own energy and achieve an optimal restoration of the body functions in a short time. Thus, the Big Dipper plays a role of the indicator of space and time. It indicates the changes of Yin and Yang energies during one day and a year, that is important to consider for practical and creative activities.

For more detailed information, the book of Davydov M. may be advised. **The book is called "Space and time in Chinese medicine".**

If the BAPs time is coincided with the present time, they are marked in the program in green color. When the mouse cursor is placed over the point, the description of needle therapy appears. By clicking the BAP, the transition to the **Procedure room** of the exact BAP occurs in order to carry out the therapy.



The program calculates the following day characteristics that may be required for practice:

- time of sunrise and sunset
- time of moonrise and moonset, lunar day characteristics (the moon is **in decrement** on a full moon and in the last quarter; the **increscent** moon is on the new moon and in the first quarter)
- a possibility of solar or lunar eclipse on a particular day
- a day cycle in 60-day cycle according to Chinese calendar calculated for the particular location
- the element of the day
- Heavenly Stem of the day in 10-day cycle according to Chinese calendar calculated for the particular location
- activity time of meridians, considering time of sunrise and sunset
- recommendations on the day according to lunar calendar
- the northern Plough location on a particular day depending on time of day and cardinal directions
- the order and time of antique points opening on a particular day depending on time of sunrise and sunset

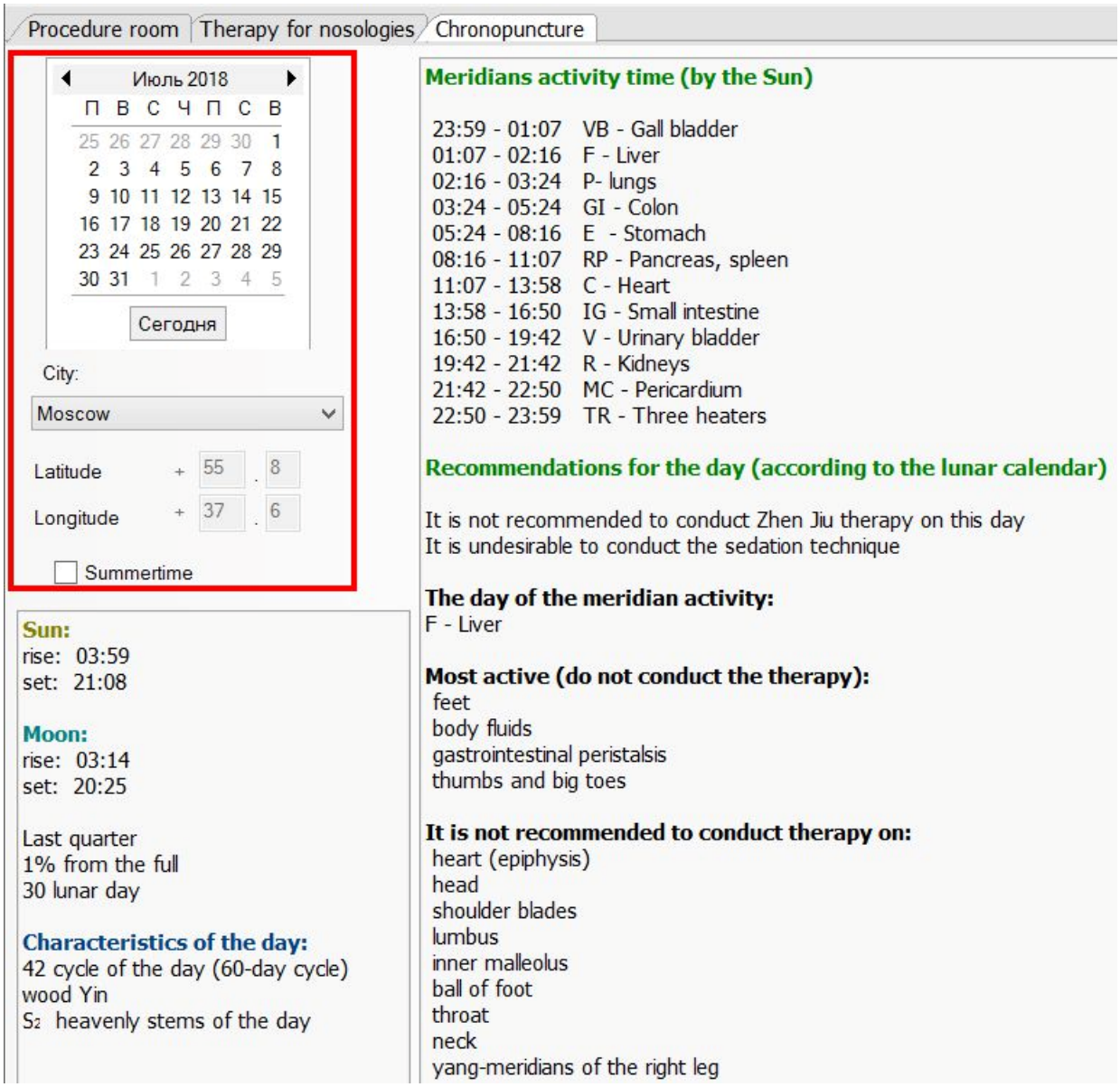
The following methods of open points calculation are provided:

- Method of intercreation of elements (Zi U Liu Zhu)
- Method of combined flows (Liu Zhu)
- Method of one open point (Wai Nei)
- Eightfold method of the Sacred Tortoise (Ling Gui Ba Fa)
- The Eight Methods To Get the Qi To Rise Skywards (Fei Teng Ba Fa)

It should be noted that each of these methods is individual. For practice only one method should be chosen; you should not mix or combine them in your mind.

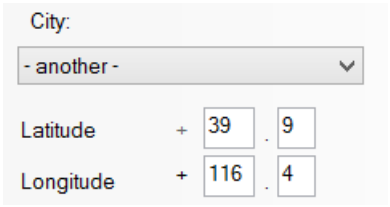
Operation procedure

- Make sure that **Time zone** settings in the program correspond to your location.



- Select from the list your city where you are. If your locality is absent on the list, select the "-other-" item.

- If the "-other-" item is selected, it is necessary to enter your coordinates (latitude and longitude) in degrees to within a tenth of a degree. For example, for **Beijing** in decimal it is **39 degrees, 91 minutes** northern latitude and **116 degrees, 40 minutes** east longitude.



  - There are coordinates on a location map (with some error); sometimes you can find them on the local websites of towns. For the Western Hemisphere (for example, Northern America) the longitude coordinates are negative (it is necessary to put a minus sign before number). **The program does not display data for the Southern Hemisphere. There is no calculation for the negative latitude.**
  - If the "summer time" box unticked, the program calculates data according to astronomical time. If it is daylight-saving (summer) time in the locality at the day of calculation, you should tick this box to make the time clock corresponding to the program calculation time. As the clocks are switched to summer time differently in different countries (it also can be approved or canceled by the legislature), you should follow the changes on your own.
  - Once all settings are selected correctly, the desirable day for calculation in the program calendar should be chosen. In selecting the date, the program displays the day characteristics.

The program information about date, time and location is based on Windows settings, so you should set time and time zone in Windows system correctly. (You can find these settings in the Windows **Control Panel**, in the **Date and Time** window). (Click the **Start** button, then **Control Panel**, **Adjust your computer's settings** and **Clock, Language, and Region**).

Electrotherapy

GENERAL INFORMATION

Electrotherapy consists in dosed effects on the body of current flows and electrical, magnetic and electromagnetic fields. Used for electrotherapy electrical current works as anesthetic and tranquilizer for neuralgia, cramps, paralyses, or as irritant and stimulator for neuromuscular system in case of muscular atrophy, articular rheumatism , some female diseases, neurasthenia, hysteria and others.

ATTENTION: The improper use of the device for electrotherapy or using it for other purposes can lead to undesirable consequences for patient health. Therefore, carry out procedures only under observation of experienced physician.

ELECTROTHERAPY METHODS

Galvanization is a method of using for treatment purposes the direct weak current of low voltage and not varying in time. Under the influence of external electromagnetic field the conduction current arises in tissues, that causes changes in the ions interrelation in cells and in intercellular space.

Therapeutic effects: anti-inflammatory (draining-dehydrating), anesthetic, sedative (on the anode), vasodilatory, myorelaxing and secretory (on the cathode).

Indications: inflammatory gastrointestinal disorders (chronic gastritis, stomach and duodenum peptic ulcer, chronic cholecystitis, hepatitis, colitis), musculoskeletal system diseases, peripheral nervous system disorders (neuralgia, neuritis, plexitis, radiculitis), functional diseases of central nervous system with vegetative and sleeping disorders, idiopathic hypertension of I-II degree, hypotension, eye and ENT organ disorders, skin diseases, chronic diseases of female genital organs, etc.

Contraindications: acute and purulent inflammatory processes of various localization, dermal sensitivity disorders, individual intolerance of electric current, skin damage in areas of placing of electrodes, eczema.

Parameters: For galvanization, the maximum current applied to extremities is 20–30 mA, and to trunk is 15–20 mA. For galvanization of face, the current magnitude usually does not exceed 3–5 mA, and for treatment of mouth and nose mucosae is 2-3 mA.

Electrophoresis is a combined action on a body of the direct current and the medicine that is taken into the body with the direct current.

Therapeutic effects: potentiation of galvanization effects and specific pharmacological action of a medicine taken into the body with the current.

Indications: depend on pharmacological properties of a medicine and indications for galvanization.

Contraindications: besides those to galvanization, the contraindications for certain medicines.

Parameters: The same current parameters as for galvanization and impulse electrotherapy. The total amount of electricity passed through the tissues should not exceed 200 C (coulombs). The amount of medicine usually does not exceed its single dose for parenteral or peroral administration.

Electric sleep therapy is an impact of pulse current on hypnogenic brain structures.

Therapeutic effects: somnolent, sedative, spasmolytic, trophic, secretory.

Indications: diseases of the central nervous system (neurasthenic, reactive and asthenic conditions, nocturnal sleep disorders, logoneurosis), cardiovascular system diseases (atherosclerosis of brain vessels at an early stage, cardiac ischemia, effort angina of I–II functional class, idiopathic hypertension of I–II degree, gastric and duodenal peptic ulcer, bronchial asthma, neurodermatitis, eczema, uracrasia).

Contraindications: epilepsy, decompensated heart diseases, electric current intolerance, inflammatory diseases of eyes (conjunctivitis, blepharitis).

Parameters: For electric sleep therapy square-wave impulses with current frequency of 5–160 imp*s^{-1} and duration of 0,2–0,5 ms are used. Impulse current intensity usually does not exceed 8–10 mA. Choosing pulse recurrence rate, take into account a condition of a patient.

Electrostimulation is a form of stimulation when pulse currents are used for restoration of activity of injured nerves and muscles as well as internal organs having the smooth muscles in their walls (bronchi, gastrointestinal tract).

Therapeutic effects: myoneurostimulating, trophostimulating, vasodilatory, catabolic, plastic.

Indications: primary muscular atrophy as a result of peripheric motor nerves damage (poliomyelitis, polyneuritis, plexitis, radiculoneuritis, traumatic neuritis, degenerative disc disease with severe radicular syndrome, cerebral paralysis), flaccid paralysis with pain syndrome and severe trophic disorders, secondary muscle atrophy as a result of physical inactivity, long-term immobilization after bone fracture, joint diseases and injuries, fatigue, uracrasia, atony of smooth muscles of internal organs (stomach, intestine, biliary system and urinary bladder).

Contraindications: acute inflammatory purulent processes, spastic paralysis and paresis, hyperelectroexcitability of muscles, conjugate pathological muscle contraction, early stages of

contracture development, joint ankylosis, bone fractures until their consolidation, varicose and post-thrombotic syndrome, hemorrhagic stroke.

Parameters: for electrostimulation it is necessary to choose a shape of impulse current, pulse recurrence rate and adjust the amplitude so as to reach the intense painless rhythmic contractions of patient muscles. Duration of impulses for electrostimulation is 1–1000 ms. For facial and hand muscles the current intensity should be 3–5 mA, for muscles of shoulders, shins and hips it should be 10–15 mA.

Diadynamotherapy is a therapeutic influence on the body of diadynamic pulse currents.

Therapeutic effects: myoneurostimulating, anesthetic, vasodilatory, trophostimulating.

Indications: acute and subacute diseases of peripheral nervous system (radiculitis, neuritis, radiculoneuritis, sympathalgia, spinal cord traumas), acute traumatic injuries of musculoskeletal system (injury of ligaments, contusion, myalgia, periarthritis, muscular atrophy), diseases of arteries and veins, idiopathic hypertension of the I–II stage, bronchial asthma, diseases of gastrointestinal tract (noncalculous cholecystitis, biliary tract dyskinesia, atonic and spastic colitis, pancreatitis), rheumatoid arthritis, enuresis, arthropathy deformans, Bekhterev's disease, chronic inflammatory diseases of female genital organs, peritoneal adhesions.

Contraindications: Bone fractures with non-immobilized bone fragments, urolithiasis and cholelithiasis, thrombophlebitis, acute viscerogenic pain (ischemic heart disease, exertional angina of class III, myocardial infarction, renal colic, labor, surgical manipulations), idiosyncrasy to electric current, multiple sclerosis.

Parameters: The diadynamic currents are used, i. e. impulses of the semisinusoidal shape with exponentially lengthen trailing edge, frequency of 50 and 100 Hz and amplitude in the range between 2–5 and 15–20 mA. To decrease adaptation of excitable tissues to such currents, the sequential order of pulses and the character of their combinations should be changed. Currently 5 main combinations (types) of these currents and 2 types of their wave modulation are used. For carrying out diadynamotherapy procedures the specific devices are used. They generate 8 types of pulse currents of various duration, frequency and shape with various polarity and duration of pauses between pulses. Besides, there is a constant component intensifying effects of diadynamic currents.

Amplipulse therapy is influence of sinusoidal modulated currents on a body.

Therapeutic effects: neuromyostimulating, anesthetic, vasodilatory, trophic.

Indications: diseases of central nervous system with motor, vegetovascular and trophic disorders, diseases of peripheral nervous system with pain syndrome (causalgia, neuromyositis, neuralgia, lumbago, radiculitis, sympathalgia), hypertensive disease of I-II class,

respiratory tract diseases (chronic bronchitis, bronchial asthma), gastrointestinal tract disorders (functional gastric disorder, gastroduodenal ulcer, reflux esophagitis, diskinetic

constipation, dyskinesia of biliary tract), diseases of joints (rheumatoid arthritis, arthropathy deformans, periarthritis), pelvic inflammatory diseases, enuresis.

Contraindications: acute and subacute inflammatory diseases of internal organs, fractures with non-immobilized bone fragments, cholelithiasis and urolithiasis, idiosyncrasy to electrical current, psychosis, multiple sclerosis, postthrombotic disease.

Parameters: for amplipulse therapy the alternating sinusoidal (harmonic) currents with frequency 5 kHz, modulated by frequency in the range of 10–150 Hz are used. Depth of their amplitude modulation reaches 100 %. For medical purposes alternating and constant generation modes are used. In the first case the amplitude current pulsations are formed, in the second case, the monopolar sinusoidal pulses. Amplitude of modulating current should not exceed 50 mA. Amplipulse therapy is carried out with delivering of separate series of current oscillations, which follow in certain sequence defining an operation mode (five main operation modes are distinguished).

There are following general contraindications for electrotherapy:

- Inflammatory diseases and diseases accompanied by fever
- Pregnancy
- Patients with cardio- or other implanted electrostimulators
- Malignant tumors
- Convulsive disorder
- Skin damage in the areas of therapy
- Presence of implants containing metal in the areas of therapy
- Acute stage of myocardial infarction
- Acute stage of a cerebral vascular accident
- Fractures of bones before their consolidation (synostosis).
- Dermatoses
- Bleedings, hemorrhagic tendency
- Severe arterial hypertension
- Atrial fibrillation
- Renal and hepatic failure
- Renal, urinary bladder or gall bladder calculi (in case of therapy in the region of abdomen and loin)
- State after surgical suturing of a divided nerve, tendon or vessel within three weeks after surgery.

ATTENTION: The electrode for electrotherapy should be as large as possible. Be sure that electrodes are placed in such position that the widest part of lining is in touch with the skin. Attach electrodes so that they stick to the skin tightly, without unsticking. Always remember that a patient may have skin sensitivity disorder, therefore a person can inadequately assess intensity of current. Be particularly careful using currents with high galvanic component (G, UR, IG 30, T/R, DF, MF, CP, LP, and others in monopolar mode with pulse duration over 50 ms and pauses shorter than 200 ms). Never exceed recommended current density of 0.1 mA/cm^2 on the surface of active electrode. If during the procedure you use electrodes of different size, choose current intensity as for the smallest one.

Many kinds of therapy are preferably applied in two-phase mode as it allows avoiding risk of chemical burns even at high current intensity. Two-phase currents are more easily tolerated, that is very important for patients with high sensitivity.

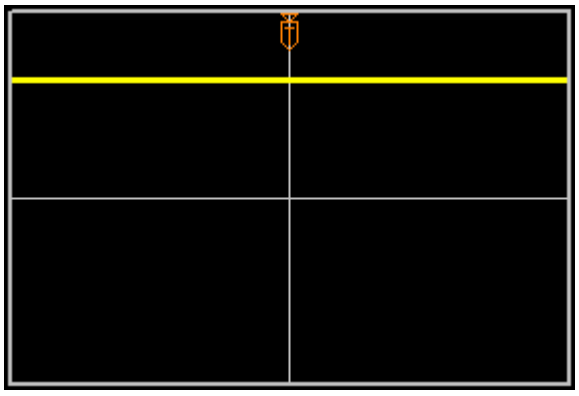
Different sizes of electrodes and maximum current intensity used:

The electrode area (cm^2)	Maximum current intensity (mA)
10	1
50	5
100	10
200	20

MAIN TYPES OF CURRENTS REALISED IN THE DEVICE:

(G) Galvanic current

Direct current without any fluctuations and interruptions.

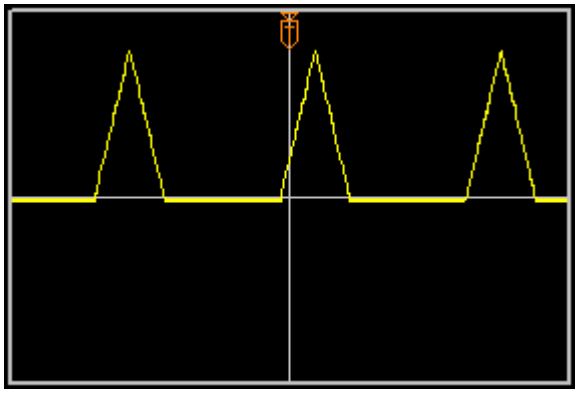


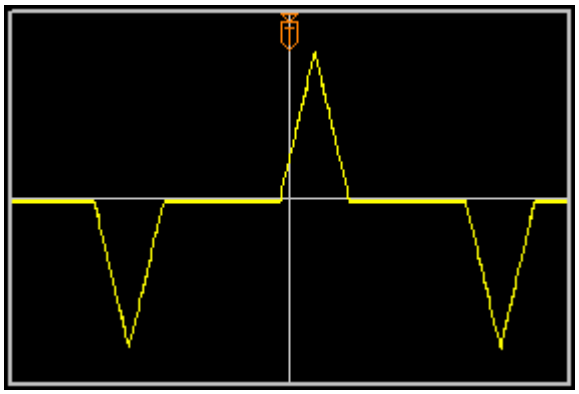
Application: ionophoresis, background therapy of paralyzes and atrophy, hyperemic effect.

Attention	Be careful when you apply galvanic current. Put slightly wet viscose bandage on patient's skin. Apply the bandage firmly. Current intensity should not exceed 0.1 mA/cm² of electrode work surface!

(IG 30) Galvanic impulse current (30)

Pulse shape: triangular, impulse duration (T) is 10 ms. Pause duration (R) is 50 ms. Stimulation frequency is about 12 Hz. Monophasic/biphasic.

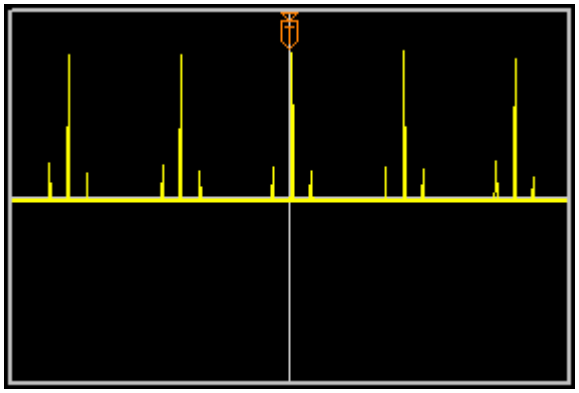


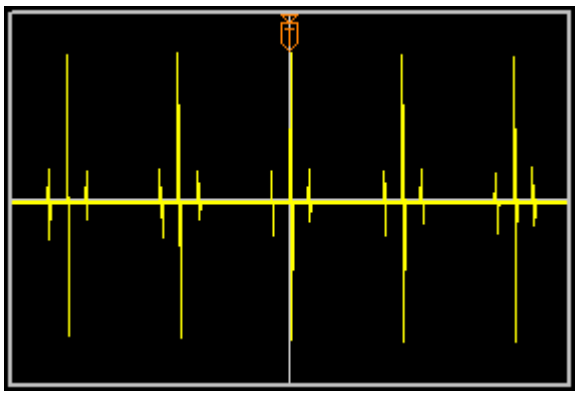


Application: stimulation of blood circulation, pain treatment.

(IG 50) Galvanic impulse current (50)

Pulse shape: triangular, pulse duration (T) is 1 ms. Pause duration (R) is 20 ms. Duration of amplitude modulation wave is 50 ms. Duration of amplitude modulation pause is 70 ms. Stimulation frequency is about 8 Hz. Monophasic/biphasic.

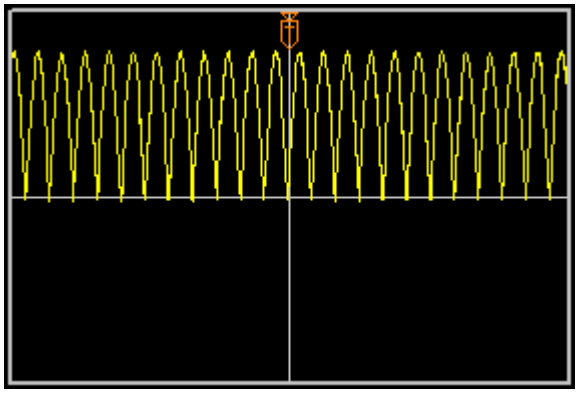




Application: induction of muscle tremor for stimulation of blood circulation, for pain treatment, muscle tension relief and hematoma resorption.

(DF) Two-half-period continuous (TH) diadynamic current

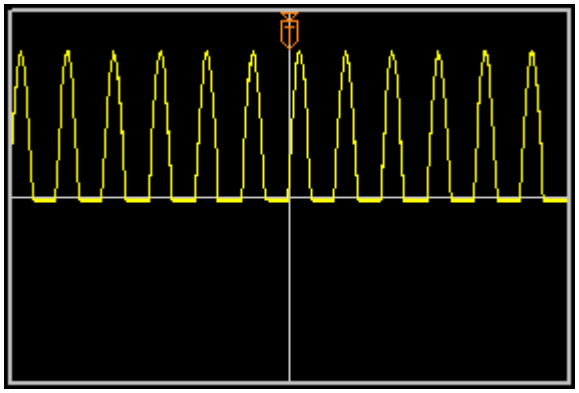
Pulse shape: sinusoidal half-waves following one after another continuously, without pauses. Pulse duration (T) is 10 ms. Galvanic noise is 5 %.



Application: classical current for the pain treatment in neuralgia and chronic pain, for sympathetic block. It has prominent analgesic and vasoactive effect, causes fibrillar muscle twitching, fine and diffuse vibration.

(MF 1) One-half-period continuous (OH) diadynamic current

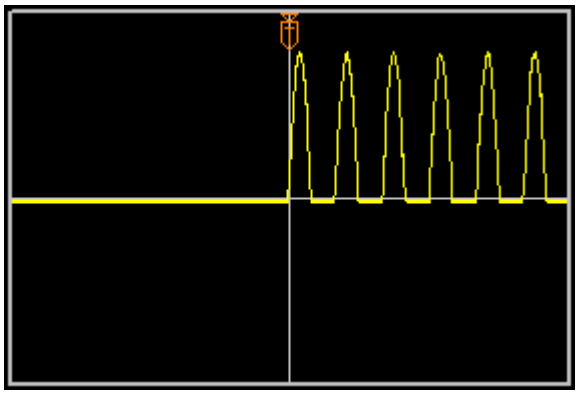
Pulse shape: half-sine impulses alternate with pauses at regular intervals. Pulse duration (T) is 10 ms. Galvanic noise is 5 %.



Application: pain treatment. It has prominent irritative and myostimulating effect, up to tetanic muscle contraction. It causes large unpleasant vibration in a patient.

(MF 2) One-half-period rhythmic (OP) diadynamic current

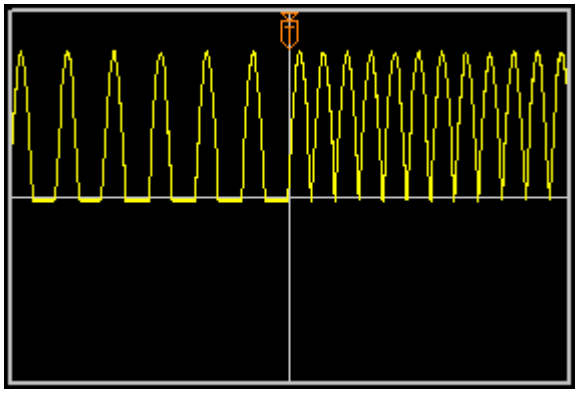
Pulse shape: OP signal consists of one-half-period continuous signal (IT) followed by the pauses at regular intervals. Duration of signal/pauses is 1 sec. Galvanic noise is 5 %.



Application: It has the most intense myostimulating effect, when the current pulses are sent. That period are followed by full muscle relaxation during a pause.

(CP) Diadynamic current modulated by a short period (SP)

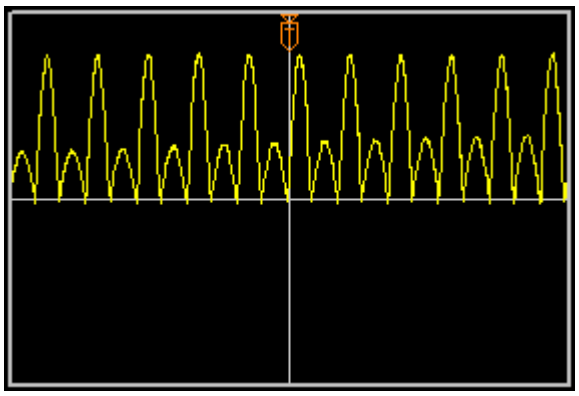
Pulse shape: sequential combination of two-half-period continuous (TC) and one-half-period continuous (OC) signals that follow as a pulse delivery consisting of 1 sec pulses. Pauses between TC and OC parts of SP signal are absent. Galvanic noise is 5 %.



Application: pain treatment, facilitation of absorption. At the beginning of a treatment session this current has neurostimulating effect, and in 1–2 min it causes analgesia. It causes periodic sensations of large and gentle vibration in a patient.

(LP 1) Diadynamic current modulated by long period (LP)

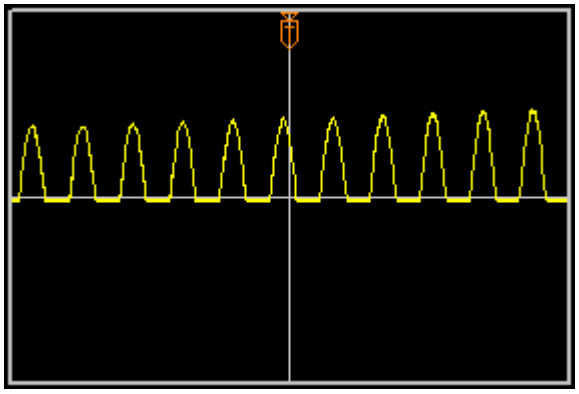
Pulse shape: simultaneous combination of the following pulse deliveries: one-half-period continuous (OC) current with duration of 4 sec and two-half-period continuous (TC) current with duration of 8 sec. The impulses of OC current during 4 sec are supplemented by smoothly rising and descending (during 2 sec) pulses of TC current. Galvanic noise is 5 %.



Application: neuromyostimulating effect of such currents decreases and its analgesic, vasoactive and trophic effects smoothly increase. Patient's sensations are similar to those of SP exposure.

(LP 2) One-half-period wave (OW) diadynamic current

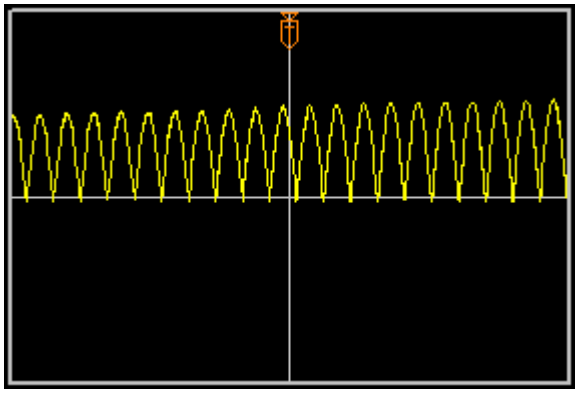
Pulse shape: pulse deliveries of one-half-period continuous current with frequency of 50 Hz and duration of 4 sec, with gradual amplitude increase and decrease. Pulse deliveries are followed by pauses with duration of 4 sec. Galvanic noise is 5 %.



Application: It has prominent neuromyostimulating effect.

(LP 3) Two-half-period wave (TW) diadynamic current

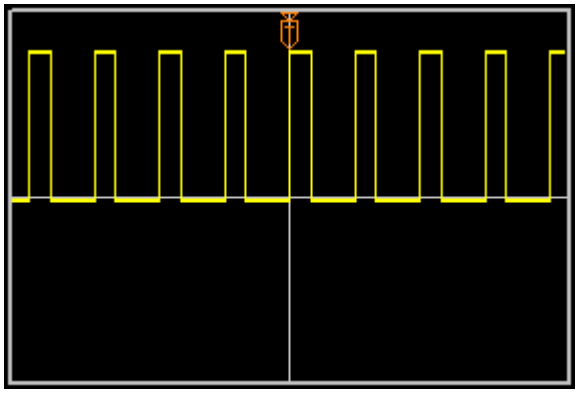
Pulse shape: pulse deliveries of two-half-period continuous current with frequency of 100 Hz and duration of 4 sec, with gradual amplitude increase and decrease. Pulse deliveries are followed by pauses with duration of 4 sec. Galvanic noise is 5 %.

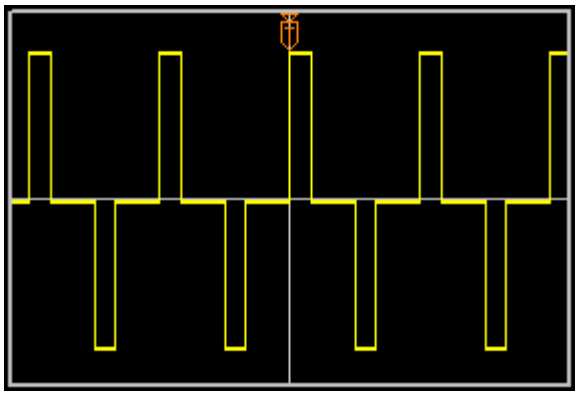


Application: It has prominent neurotrophic and vasoactive effect.

(UR) Trabert hyperstimulation current

Pulse shape: rectangular. Pulse duration (T) is 2 ms. Pause duration (R) is 5 ms. Stimulation frequency is about 143 Hz. Monophasic/biphasic current.

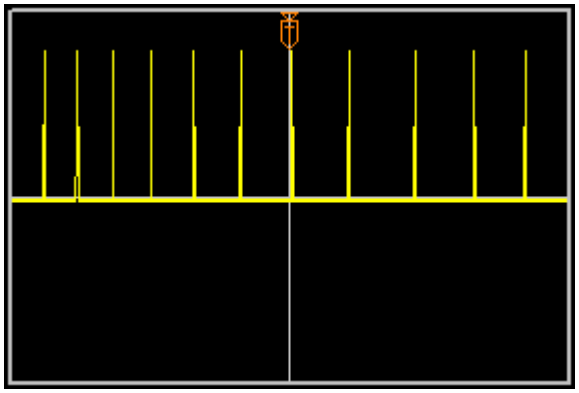


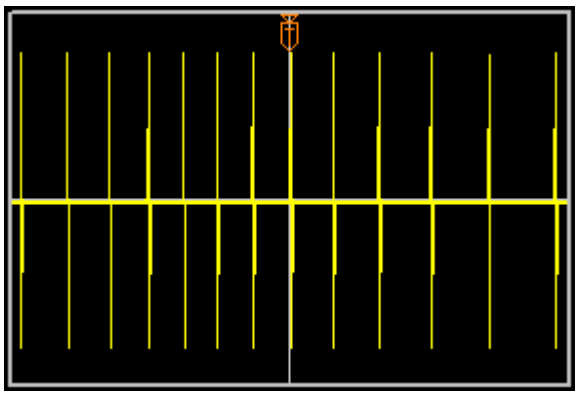


Application: pain due to increased muscle tension, arthrosis and degenerative disc disease.

(FM) Frequency-modulated current

Pulse shape: triangular. Pulse duration (T) is 1 ms. Pause duration (R) is 70–142 ms. Stimulation frequency is 7–14 Hz. Monophasic/biphasic current.

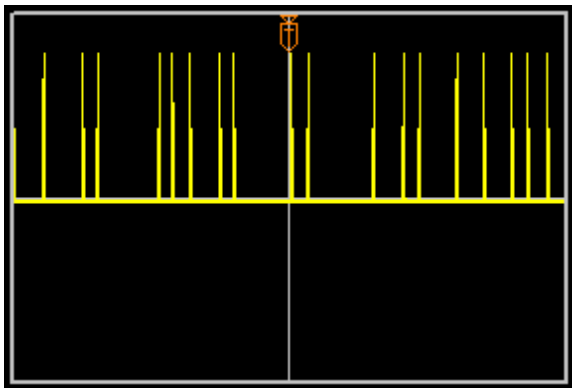


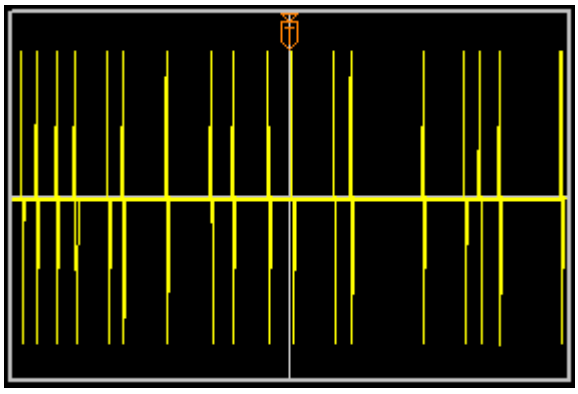


Application: induction of muscle tremor with automatically changed stimulation cycles for improving of blood circulation, reduction of muscle tension, for the pain treatment and physiotherapy for athletes having slight pain.

(STOCH) Stochastic current

Pulse shape: triangular. Pulse duration (T) is 1 ms. Pause duration (R) is 10–100 ms. Stimulation frequency is 10–100 Hz. Monophasic/biphasic current.

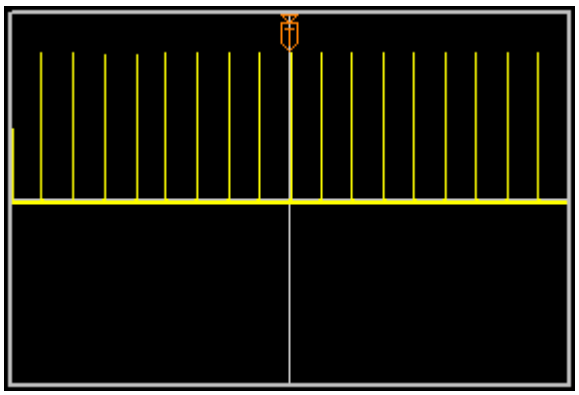


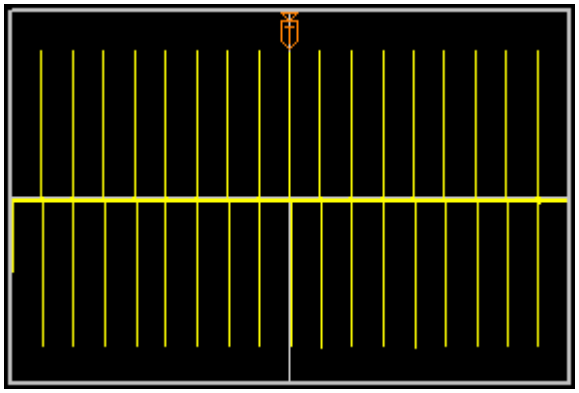


Application: electrical stimulation with random generation of impulses for stimulation of blood circulation and pain relief; minimum adaptation to therapy.

(TENS) Transcutaneous electrical nerve stimulation

Pulse shape: rectangular. Pulse duration (T) is 250 µc. Frequency bands are 1–150 Hz, 70–150 Hz. The fixed frequency is 1–200 Hz. Monophasic/biphasic current.

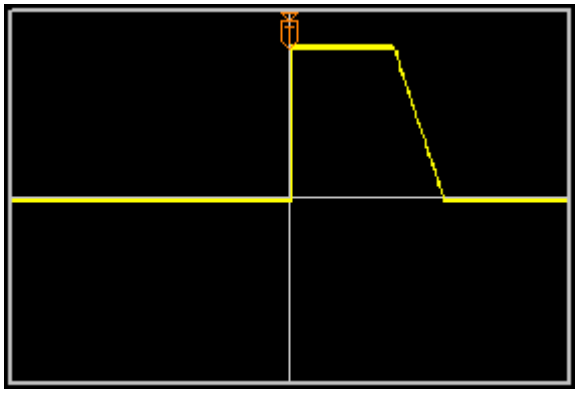


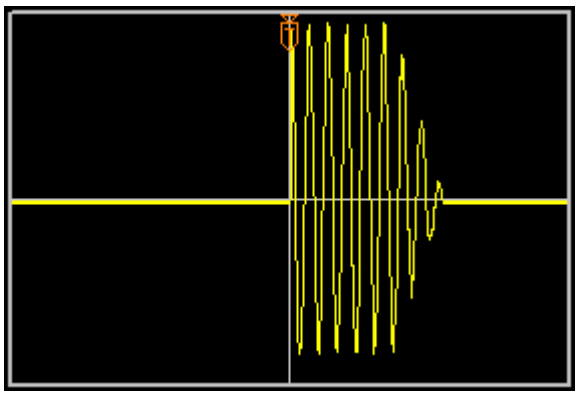


Application: pain treatment in case of chronic neuralgia and myalgia; rheumatic pain relief.

(T/R) Impulse current with adjustable parameters

Pulse shape: square, 3 trapezoid, triangular. Carrier frequency (Fbas) is 2–10 kHz. Pulse duration (T) is 10–500 ms. Pause duration is 1–7 sec. Monophasic/medium frequency.

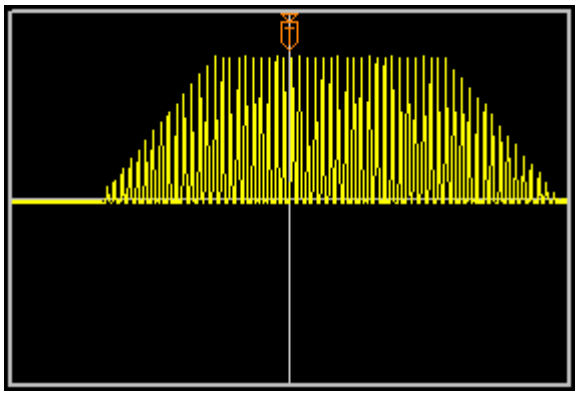


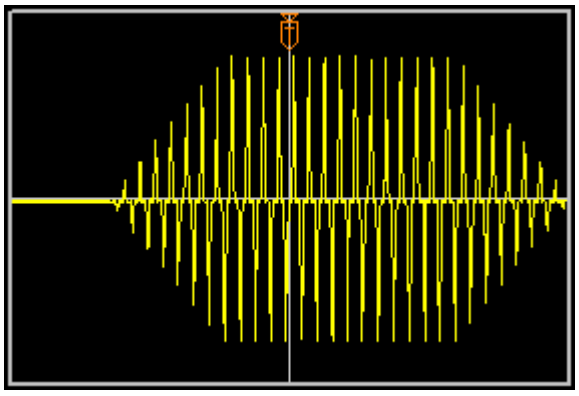


Application: treatment of peripheral paralysis, selective muscle stimulation.

(FaS) Faradic current with amplitude modulation

Pulse shape: triangular. Pulse duration (T) is 1–10 ms (classical duration is 1 ms). Duration of contraction is 1–60 sec. Pause is 1–60 sec. Monophasic/biphasic current.

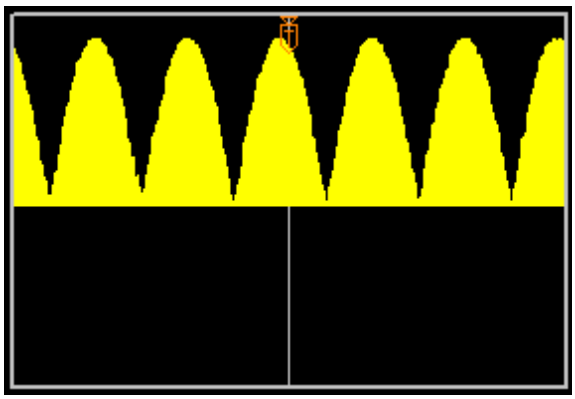


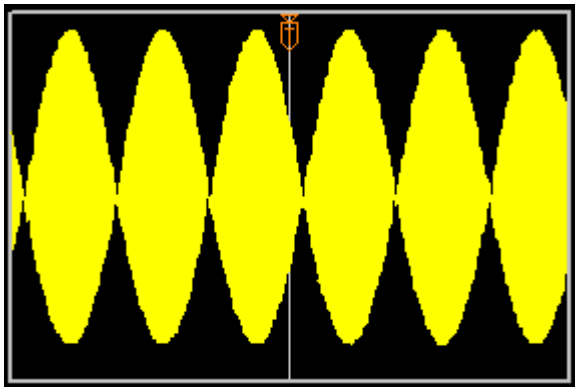


Application: treatment of muscular atrophy, Ferster gymnastics for muscles, electrogymnastics, muscle training for athletes, coordination of movements training.

(AMF 1) Amplitude-modulated current of average frequency (1st operation mode)

Pulse shape: sinusoidal waves. Carrier frequency (Fbas) is 2–10 kHz. Modulating frequencies are 0–250 Hz. Modulation depth is 0 %, 50 % and 100 %. Pre-defined frequency bands are 1–50 Hz, 1–250 Hz, and 100–250 Hz. Monophasic/biphasic current.

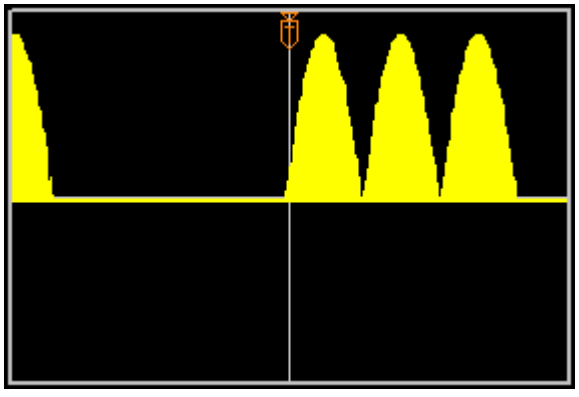


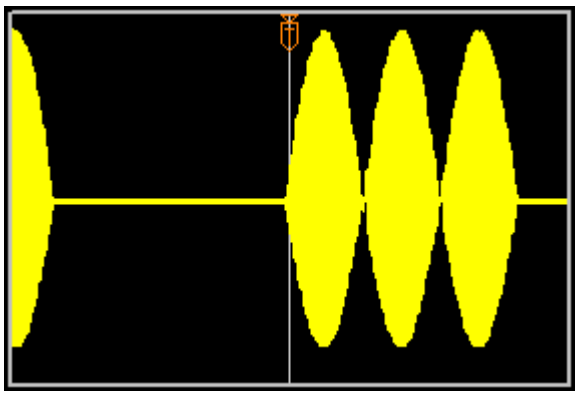


Application: depending on the chosen parameters: pain treatment, blood circulation stimulation, muscle tension relief, etc.

(AMF 2) Amplitude-modulated current of medium frequency (2nd operation mode)

Pulse shape: sinusoidal waves. Carrier frequency (Fbas) is 2–10 kHz. Modulating frequencies are 0–250 Hz. Modulation depth is 0 %, 50 % and 100 %. Monophasic/biphasic current. Combination of electric current pulse deliveries of carrier frequency, modulated by one frequency, with pauses. Duration of electric current pulse deliveries is discrete within 1-6 sec.

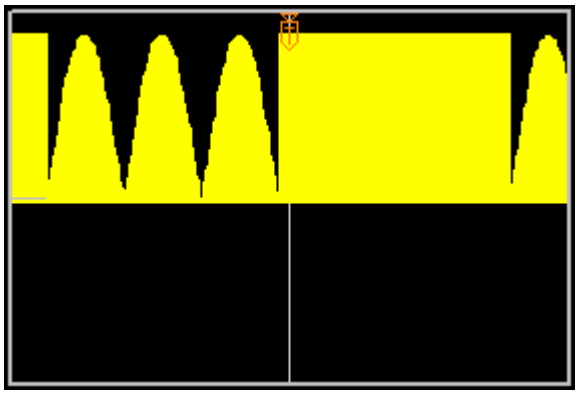


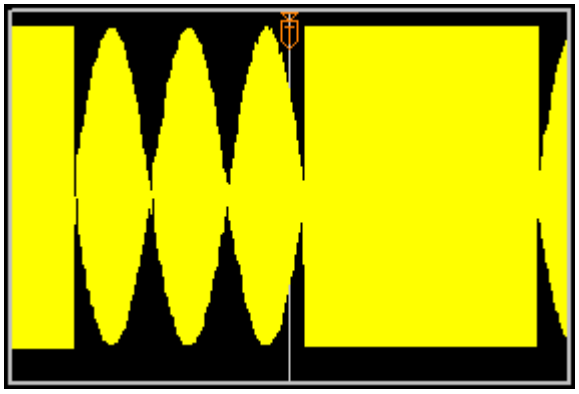


Application: This mode provides intense contrast of action of sinusoidal modulated currents against pauses. It has the most significant neuromyostimulating effect.

(AMF 3) Amplitude-modulated current of medium frequency (3rd operation mode)

Pulse shape: sinusoidal waves. Carrier frequency (Fbas) is 2–10 kHz. Modulating frequencies are 0–250 Hz. Modulation depth is 0 %, 50 % and 100 %. Monophasic/biphasic current. Combination of electric current pulse deliveries modulated by certain frequency and unmodulated electric current pulse deliveries. Duration of current supply should be within 1–6 sec.

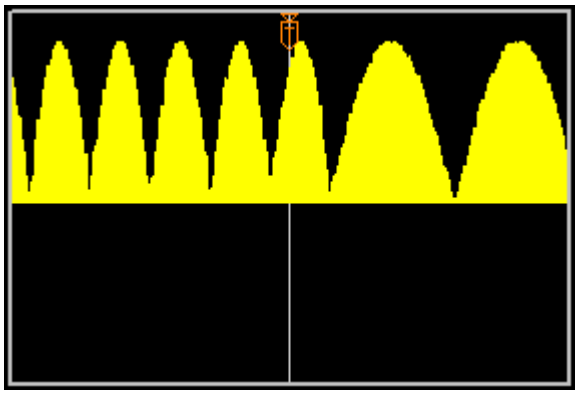


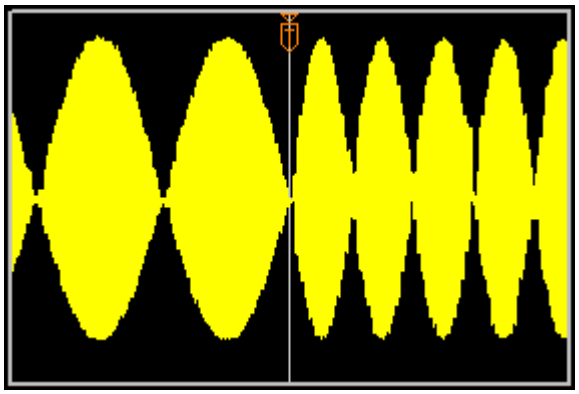


Application: stimulating effect of sinusoidal modulated currents in such combination is expressed less than in 2nd operating mode, but analgesic effect starts to develop.

(AMF 4) Amplitude-modulated current of medium frequency (4th operation mode)

Pulse shape: sinusoidal waves. Carrier frequency (Fbas) is 2–10 kHz. Modulating frequencies are 0–250 Hz. Monophasic/biphasic current. Combination of alternating electric current pulse deliveries with modulation frequency of 150 Hz and different modulation frequencies (the range is 1–250 Hz).

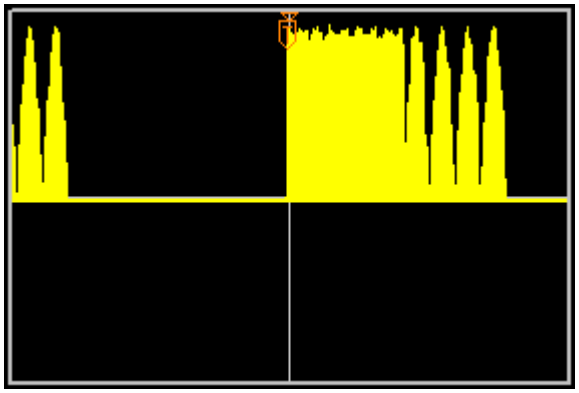


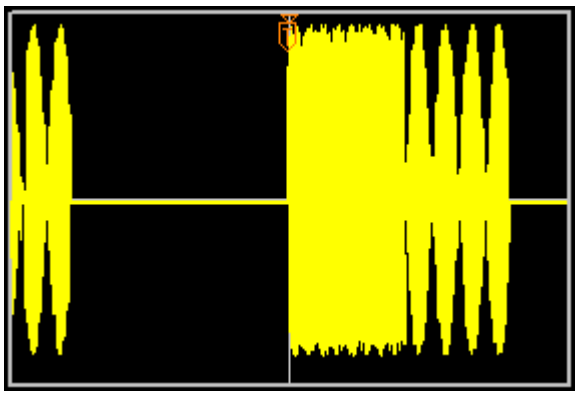


Application: In that case sinusoidal modulated currents have the most significant analgesic effect which increases as the difference between selected first and second modulation frequency reduces.

(AMF 5) Amplitude-modulated current of medium frequency (5th operation mode)

Pulse shape: sinusoidal waves. Carrier frequency (Fbas) is 2–10 kHz. Modulating frequency range is 1–250 Hz. Monophasic/biphasic current. Combination of alternating electric current pulse deliveries with different modulation frequencies within the range of 0–250 Hz and pauses between them.

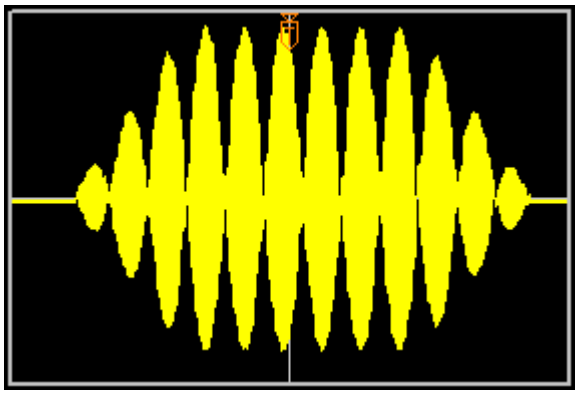




Application: such mode provides mild contrast of sinusoidal modulated currents against pauses and has mild neuromyostimulating and trophic effect.

(MT) Current of medium frequency for muscle training

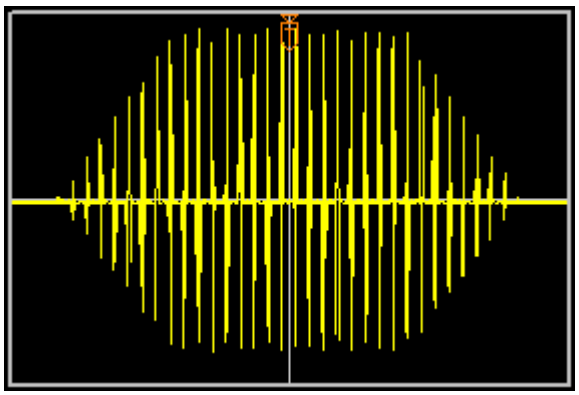
Pulse shape: sinusoidal waves. Carrier frequency (Fbas) is 2–10 kHz. Modulating frequency range is 1–150 Hz. Two-phase. Duration of contraction is 1–60 sec. Pause duration (R) between contractions is 0–60 sec.



Application: muscle training.

(KOTS) Current of medium frequency for Kots muscle training

Pulse shape: sinusoidal waves. Carrier frequency (Fbas) is 2–10 kHz. Two-phase. Pulse duration (T) is 10 ms. Pause duration (R) is 10 ms. Duration of contraction is 1–60 sec. Pause duration (R) between contractions is 0–60 sec.

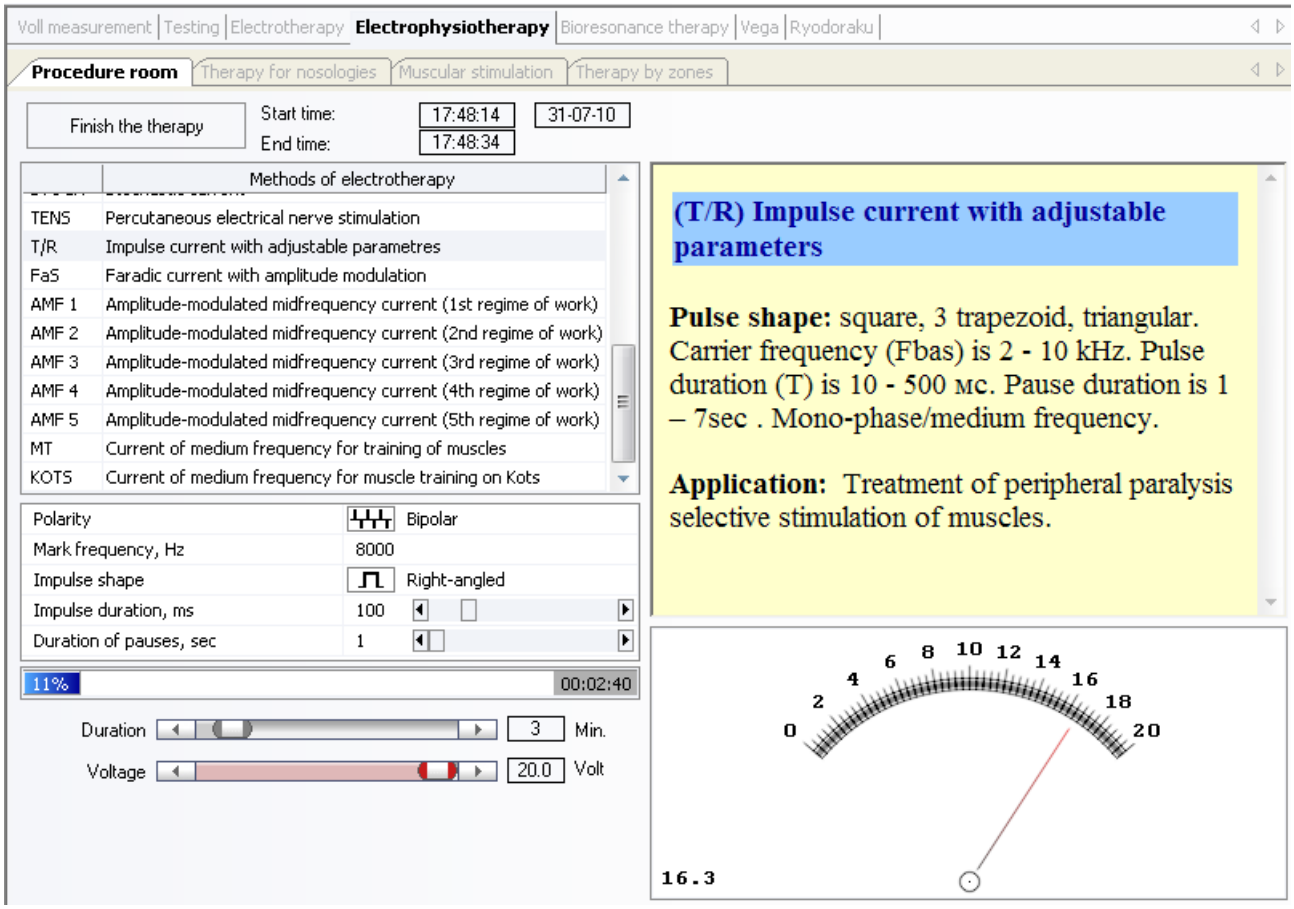


Application: muscle training.

Procedure room

This window is for different types of electrotherapy. To start therapy, click the ***Begin therapy*** button. The device will switch to the therapy mode and the selected current shape with corresponding parameters is given to the device output. To end therapy, click the ***Finish therapy*** button. To clear therapy results, click the ***Clear*** button. In the right window a brief description of selected technique will be displayed as well as a pointer-type indicator displaying the current value of current intensity during therapy. To get the current on electrodes **up to 20 mA** it is necessary to connect the device to the 220 V mains supply. If the device is powered by USB port only, the current for the electrotherapy will be low.

ATTENTION: Do not use the device for the electrotherapy if you have not the professional knowledge in this field. The improper use of this mode may be harmful to health!

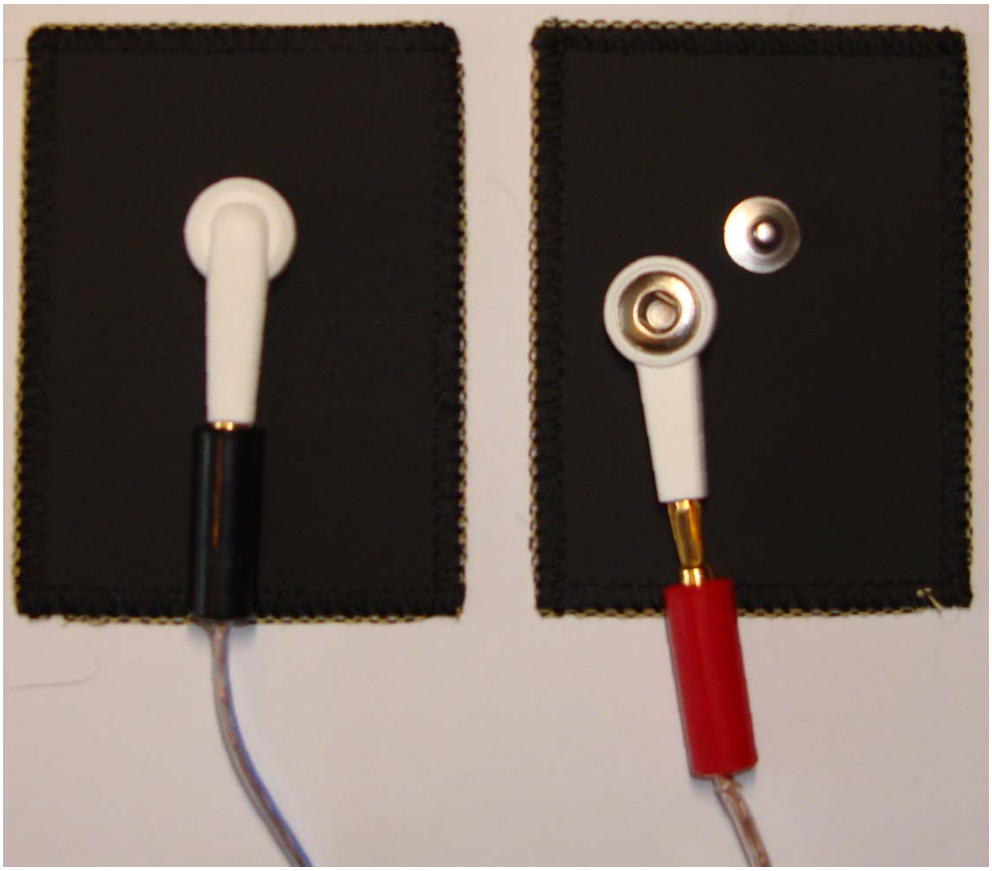


Therapy order

- For different electrotherapy types the corresponding electrodes are used. The electrodes must have the appropriate size. However, they should be as large as possible. It is unacceptable that electrode size be so small that the current density exceeds 0.1 mA/cm^2! The dry electrodes should not be used because this can cause the pain due to incomplete contact of the electrode surface and skin! Usually for improvement of the electrical contact between electrodes and patient's skin the pads for electrotherapy are used (wetted with water). Pads are expendable material. Replace expended pads timely. Place electrodes such a way to provide the best contact between patient's body and entire surface of electrodes. Ensure the proper polarity of electrodes! The patient skin under electrodes should not be damaged or have scars. More information about electrodes shape and their placement is available in a guidance on corresponding electrotherapy method.
- Fix electrodes on the body with use of Martens elastic bandage, adhesive BINTLI tape or any other way (using bag of sand, adhesive plaster, etc.).
- Set the needed electrotherapy time.
- Click the ***Begin therapy*** button. The program will switch to the therapy mode; do not take electrodes into the hands during this mode!
- Smoothly increasing amperage by the slider, achieve required value for the therapy. At the same time, the sense of discomfort or burning in a patient should be avoided.
- Wait for the end of therapy.
- Remove electrodes.

You can change electric current parameters during therapy process too. The scale displays the electric current in milliamperes.

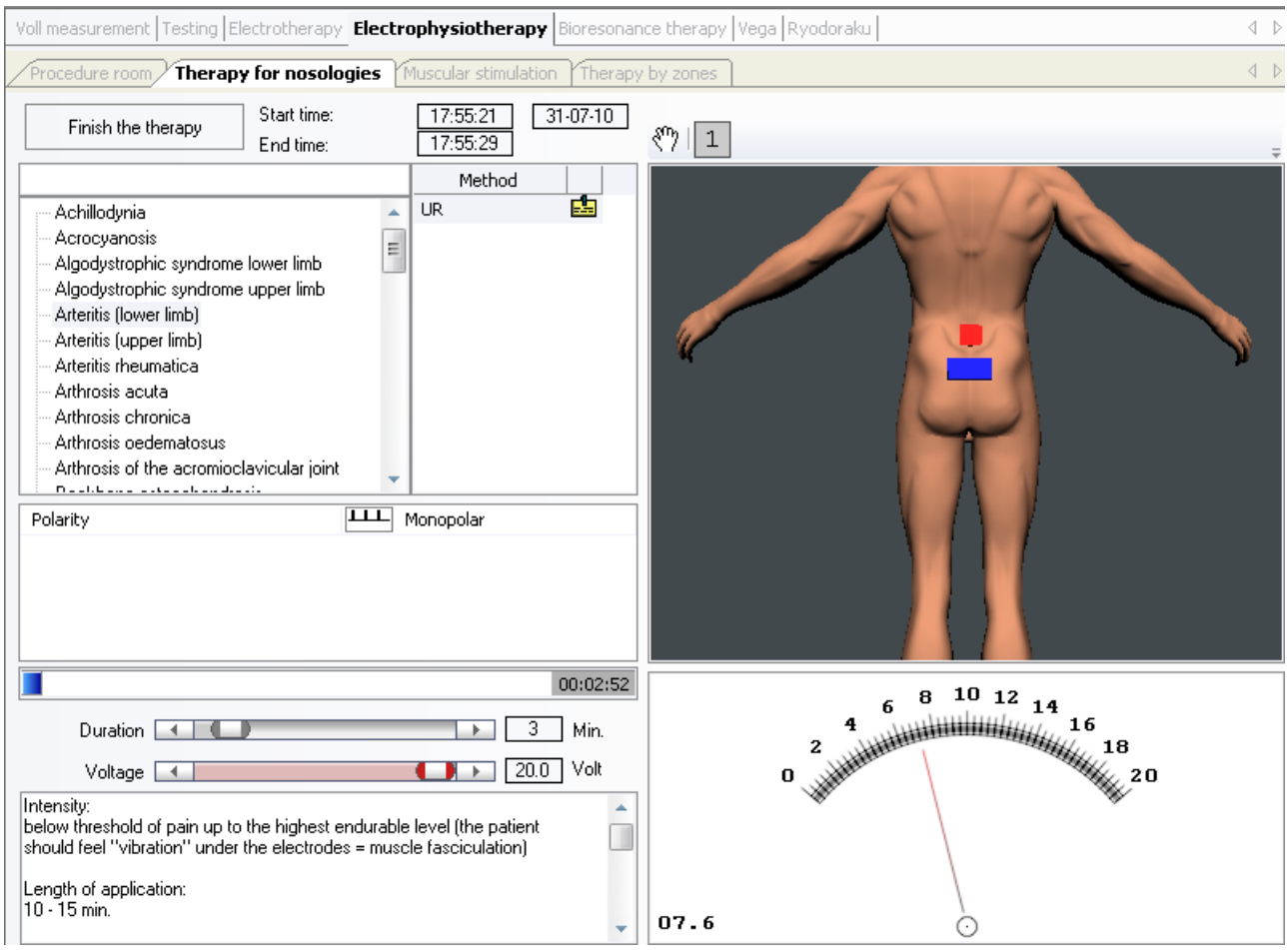
Special plug-snap connectors to connect the electrodes for physiotherapy produced by outside manufacturers (for example, Fiab company, Italy) are included in the delivery set. Connectors are put against the stop on the ends of patient wire plugs, which in turn are locked onto the electrode snap.



Therapy by nosologies

This window is for electrotherapy by nosologies. To start therapy, click the ***Begin therapy*** button. The device will switch to the therapy mode and the selected current shape with corresponding parameters is given to the device output. To end therapy, click the ***Finish therapy*** button. To clear therapy results, click the ***Clear*** button. In the right window a brief description of selected technique will be displayed as well as a pointer-type indicator displaying the current value of current intensity during therapy.

ATTENTION: Do not use the device for the electrotherapy if you have not the professional knowledge in this field. The improper use of this mode may be harmful to health!



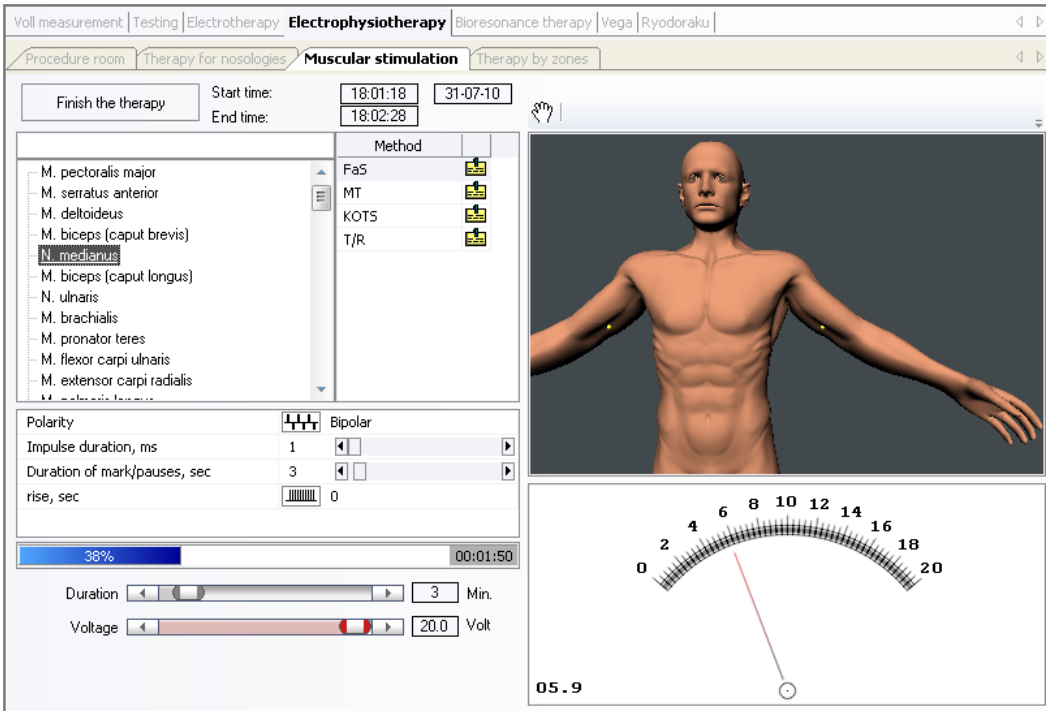
Therapy order

- For different electrotherapy methods the corresponding electrodes are used. It is possible to use electrodes that are not included in the delivery set of the hardware-software complex. The electrodes must have the appropriate size. However, they should be as large as possible. It is unacceptable that electrode size be so small that the current density exceeds 0.1 mA/cm^2. Dry electrodes cannot be used, this can cause pain! Usually for improvement of the electrical contact between electrodes and patient's skin the pads for electrotherapy are used (wetted in water). Pads are expendable material. Replace expended pads timely. Place electrodes such a way to provide the best contact between patient's body and entire surface of electrodes. **Red** color means a positive electrode, **blue** color means a negative electrode (it has a black plug). Ensure the proper polarity of electrodes! The patient skin under electrodes should not be damaged or have scars. More information about electrodes shape and their placement is available in a guidance on corresponding electrotherapy method.
- Set the necessary therapy duration.
- Click the ***Begin therapy*** button. The program will switch to the therapy mode; do not take electrodes into the hands during this mode!
- Smoothly increasing amperage by the slider, achieve required value for the therapy. At the same time, the sense of discomfort or burning in a patient should be avoided.
- Wait for the end of therapy.
- Remove electrodes.

You can change electric current parameters during therapy process.

Muscle stimulation

This window is intended for the electrostimulation of muscles. To start therapy, click the ***Begin therapy*** button. The device will switch to the diagnostic mode, and the selected current waveform is given to the unit output. To end therapy, click the ***Finish therapy*** button. To clear therapy results, click the ***Clear*** button. In the right window a brief description of selected therapy method will be displayed, as well as a pointer-type indicator displaying the actual value of electric current intensity during therapy.



Electrostimulation is a healing method consisting of impulse currents exposure for strengthening of muscles and nerves as well as for restoring their performance capability.

Therapeutic effects: myoneurostimulating, neurotrophic, vasoactive, topical anesthetic.

Indications: Flaccid pareses and paralyses of face, neck, trunk and extremities muscles due to injuries and diseases of peripheral and central nervous system; traumatic neuritis; plexitis; poliomyelitis; polyneuritis; amyotrophy as a result of the hypodynamia, prolonged immobilization due to bone and joint fractures, operative treatment; smooth muscle atony of internal organs (stomach, intestinal tract, biliary tract, ureter, urinary bladder); pareses and paralyses of laryngeal and diaphragmatic muscles; sexual neurosis, enuresis.

Contraindications: Atrial fibrillation, complete heart block (complete atrioventricular block), polytropic extrasystoles, significant arterial hypertension, active rheumatic disease, frequent vascular crises, hemorrhagic tendency and haemophilia, extensive trophic ulcers and

wounds, acute inflammatory (especially purulent) processes, fever, spastic paralyses and pareses, muscle hyperexcitability to electrical stimulation, concomitant convulsions, precursory symptoms of contracture, ankyloses of joints, bone fractures until fracture union, neurosuture, suture of blood vessel or tendon within the first month after the surgical intervention, as well as general contraindications for electrical physiotherapy. Besides, general contraindications for the electrophysiotherapy.

There are two ways to place the electrodes. **The monopolar location** of electrodes means that the small (differential, positive) electrode with a red plug is placed on the object of stimulation (a nerve or a muscle), and the big (indifferent, negative) electrode with a black plug is placed on the trunk. A point electrode is usually used as a small electrode. The indifferent electrode should be large enough not to cause stimulation. The monopolar location of electrodes is usually preferred in stimulation of small surfaces, for example, when using stimulating currents for nerves and muscles, face or hand muscles. **The bipolar location** of electrodes means that both electrodes which usually have the same size are placed on the area of stimulation (for example, for longitudinal muscle contraction). This technique is used if there are no points of motor stimulation (points of muscular stimulation), but it is required to provide stimulation of the greatest possible quantity of fibers. The selected size of electrodes should correspond to the anatomic proportions of a patient. It is necessary to make sure that muscular contractions are not interfered by the size of electrodes or their position. If it is possible, use flexible electrodes and make sure that a fixing tape does not create a hollow. The closer the location of a muscle is to its original position and attachment, the easier its contraction. In stimulation of cross-striated muscles, the electrodes are placed on certain sites (motor points of nerves and muscles). The motor point of a nerve is a site where the nerve is located under the skin superficially and accessible for influence. The motor point of a muscle is the location where the motor branch of a nerve enters the muscle. It is an area of the most excitability of the muscle. To define the motor points location, the Erb's table is used. However, taking into account the variability of their location in each particular case, a therapist should define the location of these points. The first procedure must be carried out at his presence. The found motor points are delineated to avoid the search for them before the subsequent procedures.

First of all, it is necessary to check, if it is possible to carry out the stimulation by currents of medium frequency (MT/KOTS). If muscles do not response to these types of current, for the stimulation the triangular pulses should be used.

ATTENTION: Do not use the device for electrotherapy if you have not professional knowledge in this field. The improper use of this mode may be harmful to health!

Therapy order:

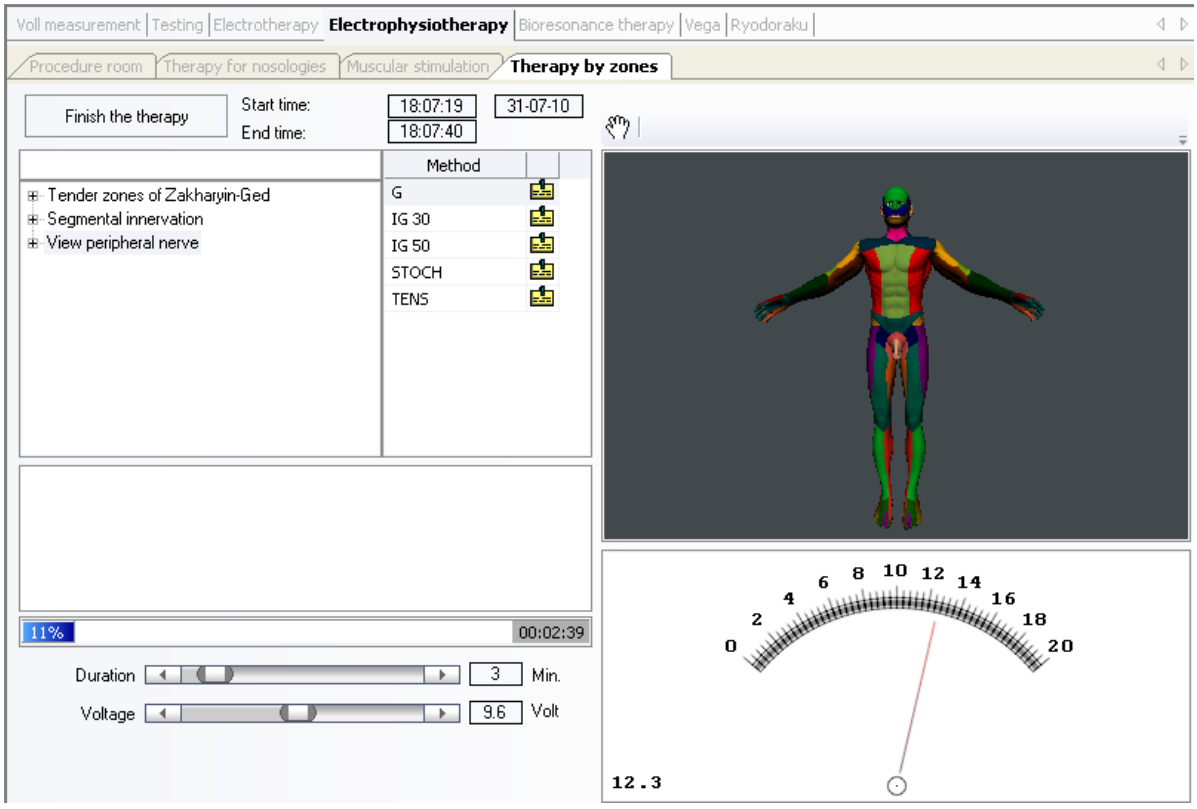
- Place the corresponding electrodes according to the selected scheme of therapy.
- Set the required time of electrotherapy.
- Press the ***Begin therapy*** button. The device will switch to the therapy mode. Do not hold the electrodes in your hands when this mode is on!

- Smoothly increasing amperage by the slider, achieve required value for the therapy. At the same time, the sense of discomfort or burning in a patient should be avoided. Make sure that muscles are not loaded excessively, as it can lead to their damage. Do not increase the intensity if during procedure it becomes obvious that contractions are decreased and exhaustion symptoms appear! If such symptoms appear, stop the procedure immediately.
- Remove electrodes when therapy is completed.

It is possible to change electric current parameters during therapy session.

Therapy by zones

This window is intended for the electrotherapy by different body zones and parts. To start therapy, click the ***Begin therapy*** button. The device will switch to the therapy mode, and the selected current waveform with corresponding parameters is given to the unit output. To end therapy, click the ***Finish Therapy*** button. To clear therapy results, click the ***Clear*** button. In the right window a brief description of selected therapy method will be displayed, as well as a pointer-type indicator displaying the actual value of electric current intensity during therapy.



The main fields used in physical therapy include:

• General effects (natural and hardware-generated);• Local effects (area of an abnormal focus, cavity, projection of joints, organs, endocrine glands);• Metameric-receptor fields (reflexo-segmental fields, hyperalgesia zones according to Zakharyin-Head);• Neural fields (peripheral nerves projections, Erb's motor points, neurotruncular fields);• Trigger spots (periosteal-ligamentous and myogenic);• Vasoreceptor fields ("hemophysiotherapy")

• Traditional acupuncture points (physioacupuncture)

• Alternative topical systems (alternative medicine)

General effects

The general-purpose techniques include modalities when the entire skin surface is treated (mostly, this a treatment with natural factors)

Local effects

These methods are targeted at the pathologic focuses, affected organs, tissues, and body cavities. The energy of physical factors influences them directly.
If there is a pathology of hollow organs, the local influence by physical therapy methods is used mostly in order to relieve a spasm (or correct atony) of unstriated muscles. Pulse currents of low and medium frequency, electrophoresis with antispasmodic agents, and thermal procedures are used.
In pathology of parenchymal organs, the methods of physiotherapy are prescribed to improve the tissue trophism and relieve the interstitial edema. The medicine electrophoresis with macro- and microelements, electromagnetic fields of high, ultra-high, medium, and short-wave frequency, ultrasound and peloids are used.
The local influence according to the transverse technique of electrophoresis is permissible during remission of a disease. In classical physiotherapy, the transverse technique for the brain, heart, spleen, endocrine glands, and gonads are not used because of high sensitivity of that group of organs.
In the acute stage of diseases, considering the vast autonomic innervation of internal organs, the reflexo-segmental techniques are indicated for treatment. In that case, the influence is performed in accordance to longitudinal (indirect) techniques, paravertebrally, in the area of the respective dermatomes or skin hyperalgesia (Zakharyin-Head) zones.

Segmental body structure

In the course of embryonic development, each body segment acquires the respective spinal nerve. Thus, every spinal nerve is associated with one or another skin area. Skin areas in the form of bands enclosing the body from the anterior midline to posterior midline are called segments. The following spinal segments are distinguished:

eight cervical segments (C1–C8.);
12 thoracic segments (D1–D12);
five lumbar segments (L1–L5); and
five sacral segments (S1–S5).

In the 19th century, British researcher Ged and Russian clinicist G. A. Zakharyin noted that diseases of internal organs caused the increased sensitivity of certain skin areas. Later, these areas became known as the Zakharyin-Ged zones (**tender zones**). In addition to increased sensitivity, the tension and tenderness of muscles can be observed in these zones. Experimental studies showed that the signs of the internal organ diseases, along with the increased sensitivity, might be as follows:
— bands of extended skin in the area of the spine in inflammatory process in the spine;
— the same bands combined with the hair loss in the pulmonary tuberculosis;
— unilateral sweating in pneumonia;
— increased temperature of the affected side during pleurisy, etc.

Identification of reflectory changes

The easiest ways to identify reflectory changes of the skin, caused by pathologic processes in the internal organs, are as follows:

1. Run the blunt end of a needle across the skin (the touch should be gentle, without pressure). In a zone of tenderness (hyperalgesia), the touch is felt as sharp and stitching.

2. Touch the skin slightly with the sharp end of the needle. In a hyperalgesia zone, the touch is painful.

3. Tickle a patient. In a hyperalgesia zone, the tickling is not felt.

4. Slightly pinch the skin and pull it away with your thumb and forefinger. In a hyperalgesia zone, the dull, compressing or sharp pain is felt.

5. Measure the temperature. In a hyperalgesia zone, it is usually increased.

Besides, the diseases of internal organs can be identified as follows:
— on closer examination of skin surfaces (there may be hollows, rough or soft swelling);
— by measurement made with an elastomer device;
— by means of point percussion.
The point percussion makes it possible to identify the difference in the tension of the connective tissue. It is carried out by a series of short slight slaps with the palm surface of one finger on the skin.
To identify the superficial reflectory changes in the connective tissue, it is possible to use the following techniques:

1. Put an open palm with slightly bent fingers on the skin surface and press a bit, with the help of another hand moving the examining hand forward. The healthy skin responds to pressing, while the resistance of refectory changes skin raises, and the skin indentation is almost invisible.

2. Fold a small skin area and pull it perpendicular to the body axis. The healthy skin is stretched well, but if there are refectory changes, a patient has an unpleasant feeling of intense pressure.

3. Press the skin slightly with tips of the third and fourth fingers placed at an angle of 40-60 degrees to the skin surface. Then slowly move the skin upwards. Fingers easily slide over the healthy skin, the formed skin fold is evident, and the skin is moved in a narrow band. If the resistance of the connective tissue is increased, the fingers move with difficulty, the skin fold is unclearly seen, and the skin is moved in a wide band (7-8 cm in width).

The refectory changes in muscles lead to tenderness, local or spreading hypertonicity, and myogeloses.
They can be identified by the following ways:

1. Pinch a small portion of a muscle with your thumb and forefinger to form a fold. Then, keeping the thumb fixed, move the tissue with the forefinger. In a hyperalgesia, a patient feels the dull pressing pain, followed by sharp and stitching pain.

2. Press the muscle hard with the bent fingers. If there are reflectory changes in the muscle tissue, you can feel the resistance rising with the pressure increase.

3. Touch the skin with vertically set fingers and make circular movements over the skin. This technique helps determine skin areas having greater resistance than the surrounding tissues. If a patient feels sharp pain during the procedure, this indicates the local hypertonicity.

4. Put all fingers except for the thumb across muscle fibers and move the hand over the skin with a slight pressure. If you find more dense skin sites than the muscle sites with hypertonicity (myogeloses), pinch them hard with two fingers. The pain resulting from that procedure is not corrected by pain treatment, and myogeloses keep their shape.

To identify the reflectory changes in the periosteum, you should slide apart soft tissues with the tips of vertically set fingers. During this procedure, the periosteum will be painful. You can also detect dents, hardened spots, swelling, and impaired contours of bone structures.
All tissues have points that can be painful when pressing them. These points are called maximal. They can be identified using a small ball with the diameter of 10 mm. To do this, you should place the ball on the skin surface and make circular movements with a slight pressure. The dull or sharp stitching pain indicates the location of a maximal point.
Maximal points can be identified without a ball. To determine their location in the muscle, you should press it slightly with vertically set fingers. In the location of a maximal point the pain occurs, resembling the sting of a needle.
Maximal points in the periosteum can be determined by rotating movements of the thumb, second and third fingers.

Segmental innervation of internal organs (according to Hansen-Staa and Dittmar)

Organ	Segments of spine
Heart, ascending part of aorta	C3-4, D1-8
Lungs and bronchi	C3-4, D3-9
Stomach	C3-4, D5-9
Intestine	C3-4, D9-L1
Rectum	D11-12, L1-2
Liver, gall bladder	C3-4, D6-10
Pancreatic gland	C3-4, D7-9
Spleen	C3-4, D8-10
Kidneys, ureters	Cl, D10-12
Urinary bladder	D11- L3(S2-S4)
Prostate	D10-12(L5),(S1-3)
Testicles, epididimes	D12 - L3

Uterus	D10 - L3
Ovaries	D12 - L3

Note: C — cervical segments; D — thoracic segments; L — lumbar segments; S — sacral segments.

It happens that the reflex zones in diseases of different internal organs overlap. Thus, zones overlap in diseases of heart and lungs, duodenum and liver, etc.
However, sometimes in disease of one organ, Zakharyin-Ged zones are located in different places at a significant distance from each other. Thus, painful areas in coronary spasm are located on the frontal surface of the shoulder, entire inner surface of the left arm, frontonasal part of face, and on the neck.
The fact that some internal organs correspond to one Zakharyin-Ged zone, and others correspond to two or more zones, can be explained by complex connections of organs to the central nervous system.

Among these connections, the following can be distinguished in the first place:
— overlay or overlap: in the process of development of embryonal nervous plexus, the fibers of one nerve root may become part of several peripheral nerves, and vice versa, one nervous stem can include fibers of several nerve roots;
— Aengley-Lavrentiev multiplication: Nerve fibers, coming from each cell, branches out in the sympathetic ganglion and overlaps several cells of postganglionic fibers passing to different organs. Those organs are not always located within one segment;
— double innervation of many internal organs: sympathetic and somatic innervation.
Besides, segmental reflectory changes in tissues take place in accordance to the law of homolaterality: depending on anatomical arrangements and innervation, changes in tissues occur in that side of the body where the diseased organ is located.
It is accepted to relate all azygos internal organs to the left and right sides of the body. The right side includes the liver, gall bladder, duodenum and one-quarter of stomach, while the left side includes heart, pancreas, spleen, three-fourths of the stomach, small intestine, descending colon, and sigmoid colon.
In acute conditions, secondary complications and spreading of the pathological process from one organ to others, the segmentation rule can be violated.

Landmarks for influence on internal organs

Organ	**The organ topical landmarks**	**Metamer**
Heart	Borders of relative heart dullness (the top border is a III rib, the right border is 1 cm to the right of the sternum edge, the left border is 1–2 cm medial to the left midclavicular line)	C3–C4, D1–D8 (left)
Lungs	The thoracic cage (the top borders are supraclavicular regions, the lower borders are edges of costal arches)	C3–C4, D3–D9

Liver	Right hypochondrium (the top border is a VI rib, the lower border is the edge of a costal arch)	C3–C4, D6–D10 (right)
Kidneys	Angle between XII rib and long muscles of the back (ThXII–LII vertebrae level)	D10–L1
Spleen	Posterolateral part of the left hypochondrium	C3–C4, D7–D10 (left)
Prostate	Area of perineum or rectum	D10–D12, S1–S2
Ovaries	Groin	D10–L2
Stomach	Area of the left hypochondrium (the upper pole is the ThXI–ThXII vertebrae level, the pylorus is LIII vertebra, sinus is LIII–LIV vertebrae level)	C3–C4, D5–D9, (left)
Duodenum	Epigastric region, on the right of midline, at the level of LII–LIII vertebrae	C3–C4, D6–D10 (right)
Gall bladder	The intersection of the lateral border of the rectus abdominis muscle and the right edge of a costal arch	C3–C4, D6–D10 (right)
Small intestine	Sigmoid and cecum is at the border of middle and external one-third of linea umbilicoiliaca (to the left and right); ascending and descending colon are in the lateral areas of abdomen, transverse colon is 2 cm below the stomach border	C3–C4, D9–D12 (right)
Rectum	Area of perineum or rectum	S2–S4
Urinary bladder	Pubes	D11–L1, S2–S4
Ureters	The top border is a lateral border of the rectus abdominis muscle at the level of umbillicus (or on the back paravertebrally at the level of L1 vertebra); the lower	D10–L1

	border is at the level of linea bispinalis in the pubic spine area	
Uterus	Hypogastrium	D10–L1, S1–S4

Use of zones of endocrine glands projection for physiotherapy must be extremely cautious, because often there is no clear information available on the anatomical-functional condition of one or another gland. It is necessary to control clinico-laboratory profile (the hormonal "mirror"). Besides, an endocrinologist should take part in the treatment.
Effective methods of impact on zones of endocrine glands are the extremely high frequency and ultra high frequency-wave therapy, sinusoidal modulated currents, low- or medium-intensity ultrasound therapy. The paravertebral techniques or local impact using an extrafocal longitudinal (tangential) technique are mainly applied.

Metameric-receptor fields

The metamere is a segment of the spinal cord including sensitive fibers from an individual pair of spinal roots. The dermatome is a dermal area (accordingly, the myotome is a muscle area, the sclerotome is a connective tissue region, the splanchnotome is an organ-related area) where sensitive and autonomic fibers are distributed.
Neural cells of segmental formations of the autonomic nervous system outnumber the neurons in the brain, that emphasizes the importance of the segmental system.
When conducting "segmental physiotherapy," it is necessary to impact on dermatomes (myotomes, sclerotomes) corresponding to metameric innervation. This is pathogenetically based on the belonging of affected skin areas and underlying tissues to the category of "oligotrophic" regions. The improvement of metabolism, blood circulation and trophism of these tissues, taking place due to the treatment, facilitate the normalization of functioning of the internal organs, especially in long-term chronic somatic conditions.
Segmental innervation is represented by eight cervical (cervicalis) C1–C8, twelve dorsal (dorsalis) D1–D12, five lumbar (lumbalis) L1–L5, five sacral (sacralis) S1–S5 and 1–5 coccygeal (coccigea) Co1–Co5 neurometameres. The labeling of vertebrae is consistent with distinguishing marks of neurometameres (C, L, S, Co) except for thoracic spine (Th — thoracalis). The metameres are marked with Arabic numerals (1, 2, 3, etc.), and the vertebrae are marked with Roman numerals (I, II, III, etc.).
There is a disparity between the length of the spinal cord and spine column. In cervical region of vertebral column the cerebrospinal segments are located one level higher than the next vertebra, in the upper thoracic region they are located two vertebrae higher, and in the bottom thoracic region they are located three vertebrae higher. The lumbar segments are projected on the level of ThX, ThXI, ThXII, and the sacral segments are on ThXII–LI. The cauda equina is located below the LII level.
The cerebrospinal nerve roots of each segment come from the spine column at the level of the corresponding vertebrae. Therefore, the paravertebral physiotherapeutic protocols are not based on segments but on vertebrae. For the accurate determination of these zones, usually bone

landmarks accessible for palpation and levels of dermatome innervation are used.
The detailed general examination is needed prior to the treatment.
For instrumental physiotherapy the low (threshold) or medium intensity is used.
In case of hyperalgesia, the segmental physiotherapy is ineffective due to the low level of perception and afferent influences.
Determining the places for influence, a doctor should rely on the dermatome, sclerotome, myotome and periostal changes, identified by means of specialized diagnostic techniques, or on paravertebral projections of cerebrospinal nerve roots corresponding to neurometameres.

Methods of detecting changes in surface tissues (O. Gleser, W. Dalicho, 1962)

Detection methods	Detected changes	Methods of physiotherapy
Dermatome changes — Zakharyin-Ged zones of hyperalgesia		
Identified by means of patient's history and during sensitivity examination	Local itching, burning. When running slightly the blunt end of a needle across the skin, it causes pain. When folding the skin, burning and stitching pain occurs. The touch with a soft brush is not accompanied by the tickling sensation.	Local galvanization, electrophoresis of anesthetics, pulse currents of low frequency, darsonvalism, red laser, extremely-high-frequency therapy, heat carriers, massage (effleurage)
Sclerotome changes in the connective tissue		
Kibler test: pinch the skin with the thumb and forefinger and move this fold along the spine towards the lateral surface.	Difficulties with pulling away the skin. Delay of the rate of the skin shifting on the ill side. Cohesion of skin and underlying layers (the peau d'orange). Crepitation ("parchment crackle"-type) during auscultatory percussion.	Pulse currents of low and medium frequency, infrared laser, laser, decimeter-wave therapy, peloids, massage (vibration, rubbing, petrissage, fulling, "sawing")
Myotome muscle changes		
Detected by means of deep muscle palpation	MacKenzie zones (painful sites of muscles); Cornelius hypertonicity (small "balls" accessible for malaxation); Muller hypertonicity (spindles of medium size); Shade myogeloses (large dough-like infiltrations); Lange myogeloses (muscular bands).	Pulse currents of low and medium frequency, infrared laser therapy, peloids. Massage: delicate (in case of small myogeloses) or intense (large myogeloses) vibration, petrissage

Periostal changes

Detected by means of palpation of bony prominences	Local tenderness (without signs of periostitis) in the area of mastoid bones, napex, orbits, spinous processes of vertebrae, sternum, ribs and other palpated bony prominences.	Infrared laser, decimeter-wave frequency therapy, peloids. Massage (circular rubbing, vibration, intense pressure).

Neural fields

The projections of peripheral nerves are skin zones innervated by separate peripheral nerves. Such abnormalities are common to neuropathies related to the spinal column pathology, as well as mono and polyneuropathies of traumatic, toxic or infectious origin.

The criterion of their localization is the nature of motor (paresis, paralysis) and sensation disorders in the corresponding area.

Usually for treatment the following methods are used: longitudinal techniques of galvanization, medicine electrophoresis, pulse currents of low and medium frequency (the anode is placed proximally, the cathode is placed distally), magnetotherapy with use of solenoids, laser therapy with “flying-spot”.

Scheme of Autonomous Sensitive Innervation Topography (V. Ya. Neretin et al., 2003)

Peripheral nerves, spinal roots, nerve plexuses	**Zone of autonomic innervation dysfunction**
N. radialis	External surface of proximal phalanx of the I finger
N. ulnaris	V finger and ulnar surface of the hand
N. medianus	II and III fingertips
N. musculocutaneous	Radial surface of the forearm
N. axillaris	Deltoid region, upper segments of external surface of the shoulder
Upper primary bundle of plexus brachialis	Deltoid region, external surface of the shoulder and radial surface of the forearm
Middle primary bundle of plexus brachialis	Radial surface of the back of the hand and dorsum of the thumb
Lower primary bundle of plexus brachialis	Palmar surface of the hand and fingers, little finger and ulnar surface of the hand
C5	Deltoid region and external surface of the shoulder
C6	Thumb, radial surface of the palm
C7	Third finger of the hand
C8	The little finger, ulnar surface of the hand

N. femoralis	Internal surface of the shin
Lumbar plexus	Frontal, lateral and internal surfaces of the thigh
L3	Internal surface of the lower third of the thigh
L4	Internal surface of the shin
N. peroneus superficialis	Absent, or there is a small area on the anteromedial surface of the back of the foot
N. peroneus profundus	II toe
N. peroneus communis	I–IV toes
N. tibialis	Plantar surface of the foot
N. ischiadicus	Posteroexternal surface of lower two-thirds of the shin, the entire foot excluding its medial column
Sacral plexus	Posterior surface of the thigh, the foot excluding its medial column
L5	I–II toes
S1	V toe and the lateral column of the foot

*CAUTION**: Unqualified users are strongly not recommended to use segmental effects.***

ATTENTION: It is prohibited to use the device for exposure on the area of frontal heart projection.

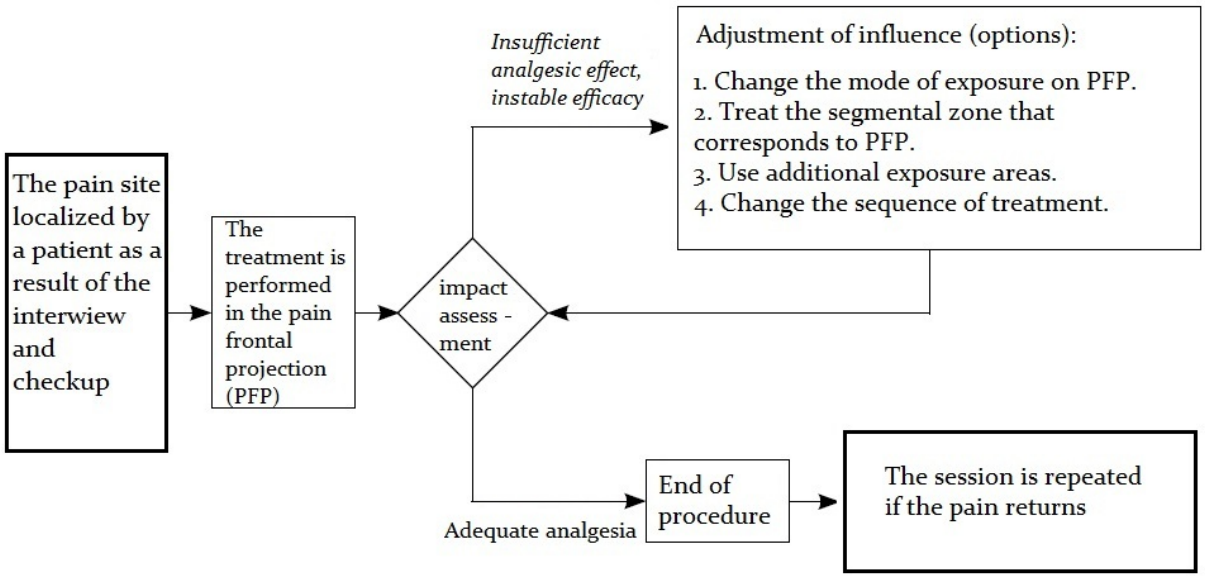
The procedure can be performed in three ways of treatment: stable, instable, and stable-instable. The stable way (the electrodes are in fixed position) is used when exposure on small areas is required or when it is necessary to treat areas with skin changes (surgical or post-burn scars, edema, etc.). The procedure can be performed using standard electrodes for electrotherapy.

In the instable way, the electrodes are moved along the exposure area smoothly at speeds of 0.5 to 3 sm/sec, without detachment from the skin surface. This should be done in a reciprocating, circular, spirally and other way of motion, depending on the size and relief of the treated area. Influence in areas of skin damage is prohibited. In that case it is desirable to use rigid paired electrodes produced by outside manufacturers or a roller electrode, connecting it to the red plug and placing the negative electrode near the treatment area. The intensity of pressure on the skin depends on patient's subjective feeling.

The stable-instable way combines both exposure ways.

Average duration of one session for adults is up to 40 minutes. It is advisable to treat no more than 3 zones during one session.

The general algorithm for the treatment of painful conditions



Therapy order:

- Place corresponding electrodes in accordance to the selected scheme of therapy.
- Set up the required duration of the electrotherapy.
- Click the ***Start Therapy*** button. The device will switch to the therapy mode. Do not take the electrodes in your hands when this mode is on!
- Smoothly increasing amperage by the slider, achieve required value for the therapy. While doing this, it is necessary to avoid unpleasant feelings or burning in a patient.
- When the treatment ends, remove the electrodes.

You can change the electric current parameters during the therapy session.

BIORESONANCE THERAPY (BRT)

The basis of BRT method is the body self-regulation process. The human body produces and emits its own physiological (healthy) electromagnetic waves. Psychological stress, infections and adverse environmental factors can result in pathological waves. The device registers body signals, makes an inversion of physiological waves and reintroduces them to the body to create resonance. In such a way the physiological waves are strengthened, and the pathological waves are reduced. The process of body self-regulation takes place. A human body sets up the device by itself and shows what to do for the treatment. Bioresonance therapy has not many contraindications.

It is possible to perform general BRT (by quadrant leads) for a general healing effect or BRT on BAPs based on Voll diagnostics for the impact on the target affected organ.

Bioresonance therapy in combination with homeopathy works very well. The best results are achieved in the treatment of allergy regardless of cause or duration of a disease. It is possible to make antipreparations using a device. It is possible to make an information copy of the drug, record only positive effect on a carrier, and give this electronic copy to a patient. You can also make for a patient "healing granules" (the record of the individual nosode to a carrier) that are optimal regulating remedy. When a person is in good health, the information should be recorded on a carrier (sugar granules) by transference of the person's waves. In case of disorder, a person should take that remedy to activate the self-regulatory mechanism.

Two kinds of BRT are implemented in the device.

Endogenous (internal) bioresonance therapy is a treatment with person's own electromagnetic waves after their special processing.

Exogenous (external) bioresonance therapy is a treatment with external signals. These waves (for example, electromagnetic fields produced by special generators) create resonance with separate body organs and systems.

1. **Endogenous bioresonance therapy.** It is aimed at treatment of the certain organ or system and performed on the basis of diagnostics results.

- There are the most pathological BAPs on every meridian.
- It is offered to select from these BAPs for subsequent treatment.
- The data is recorded from selected BAP using the electrode probe.
- Obtained data is specially processed and reintroduced to the BAP. An electrode should not be taken off the BAP during therapy process.
- It is possible to record an individual nosode on a carrier after therapy completion.

According to widely recognized type of endogenous BRT, the following procedure is performed: electromagnetic waves obtained from the passive electrode (having a **black** plug) are sent to the active electrode having a **red** plug.

In the "hand–hand" lead, the input electrode having a **black** plug (from which wave spectrum is transmitted) is placed into the left hand and the active electrode having a **red** plug (from which the inverted waves are introduce to the body) is placed into the right hand.

For BRT on BAPs, the worst BAP on the list is selected. Then the cylindrical electrode is connected to the black plug placed into opposite hand. The electrode probe is connected to the red plug and the biologically active point is fixed. Therefore, inverted signals from the entire body are sent to the point. This treatment provides a better effect than using "hand–hand" leads.

Duration of pauses between BRT sessions depends on nature of the disease. For example, in ARI you can perform BRT sessions daily or even several times per day. In case of chronic diseases, sessions are carried out once in two or three days until stable positive effect.

2. **Antiparasitic bioresonance therapy by Clark method** (Hulda Regehr Clark). It is performed as exogenous BRT.

A patient holds a cylindrical electrode in each hand (the positive electrode having a red plug should be in the right hand).

BRT is performed during 7 minutes.

In case of acute diseases, the following procedure is advised. After start of the therapy, a patient should hold cylindrical electrodes in the hands for 7 minutes. Usually a patient feel nothing during the session due to low voltage on electrodes. In case of unpleasant feelings, it is recommended to reduce the voltage. After that, it is necessary to pause for 20–30 minutes and repeat a procedure for 7 minutes. Pause again for 20–30 minutes and repeat a procedure the last time for 7 minutes. Therapy scheme looks like this: 7–20–7–20–7. Three-time session for 7 minutes with pauses is obligatory!

General antiparasitic therapy is carrying out at the frequency of 30 000 Hz. Additionally in ***Master*** complex the ability of therapy by certain protozoa and other parasites is implemented, with use of specific resonant frequencies. There are several variants of resonant frequency for each parasite. It is selected for the certain patient empirically.

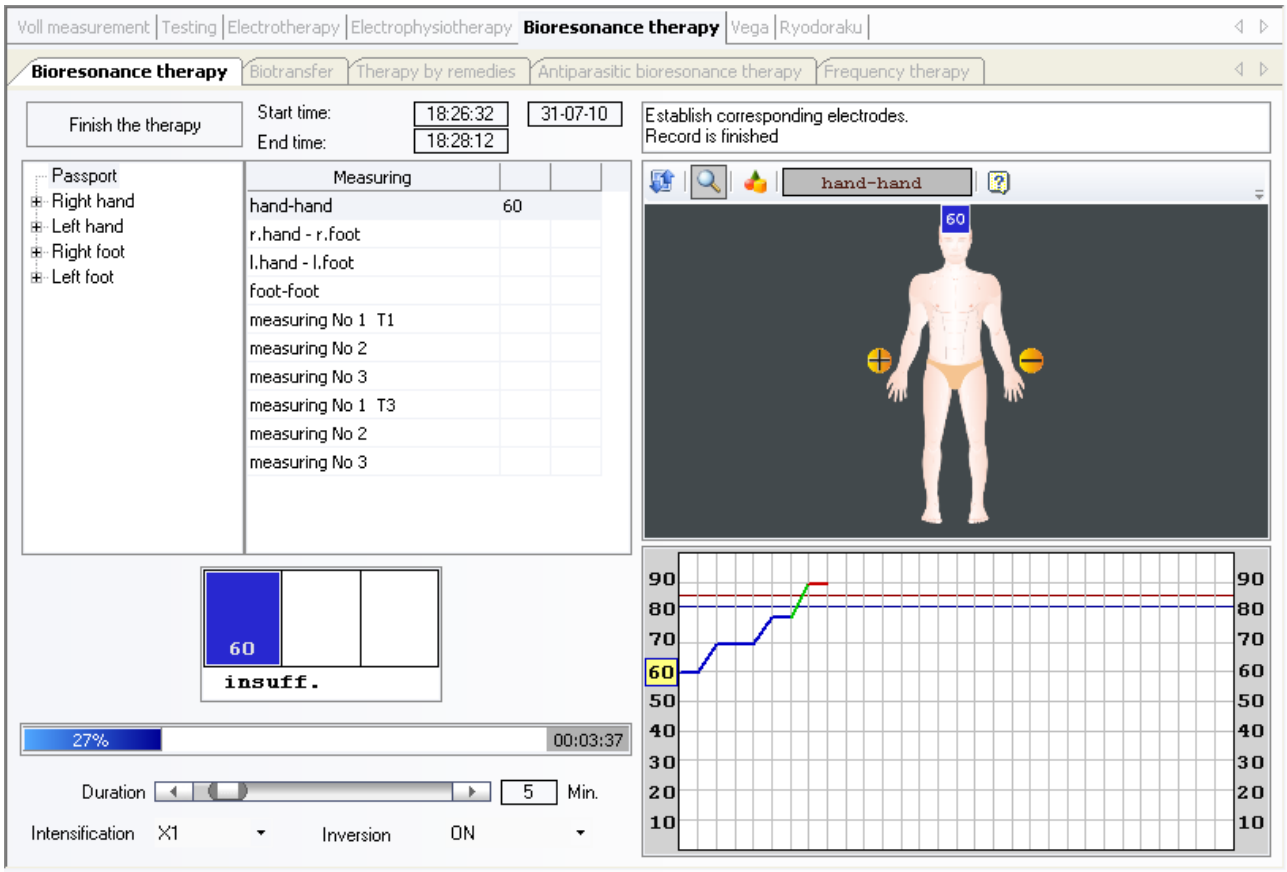
3. **Exogenous (external frequency) bioresonance therapy.** The basic idea of applying the external frequencies for resonance creation consists in the following. If the treatment frequency is selected correctly, even in very low amplitude of external signals the normal (physiological) body waves are significantly strengthened, and the pathological waves are reduced. The frequencies of exposure were determined experimentally and in clinical trials with use of biopotentialography. The ***Master*** device has a therapy module, which is a pulse generator intended for creation of specifically modulated frequencies of up to 500 kHz with accuracy of 0.1 Hz. A frequency, pulse shape and procedure can be set manually. Besides, there are ready-to-use therapy programs developed by Paul Schmidt, Royal Rife, Wolfgang Ludwig, etc. Exogenous frequency bioresonance therapy well combines with other therapy types.

This is a contact influence on a patient by applying electrodes made of conductive rubber to the skin directly over the area of concern or over the organ projection. In certain cases, it is permissible to apply electrodes to extremities. Hand (cylindrical) electrodes are used in the treatment of organs located above the diaphragm. Foot electrodes (pads) are used in the treatment of organs located below the diaphragm.

The intensity (pulse amplitude) is set in such a way that a personal sensitivity threshold of the patient is achieved (tingling feeling in area under electrodes).

Bioresonance therapy procedure

This window is for the internal BRT by autonosode with specified amplification. To start therapy, click the ***Begin therapy*** button. The device will switch to the diagnostics mode, and you can perform necessary measurements and therapy, following instructions and images on the screen. To end therapy, click the ***Finish therapy*** button. To clear therapy results, click the ***Clear*** button. In the right window the image will be displayed. It will show the BAP that you need at the moment or quadrant leads, as well as a pointer-type indicator displaying the current measuring value. During therapy process the graph of therapy influence on the BAP state over time will be shown. After measurements the point factor will be displayed in graphic form in a histogram.



Therapy order using quadrant leads

- Connect plugs of device wires to cylindrical electrodes.

- Wet the cylinders a bit.
- Click the ***Begin therapy*** button.
- Take cylindrical electrodes into the hands with respect to polarity (as shown in the image). The cylindrical electrode connected to the red plug is '+', connected to the black plug is '–'.
- Press the Space bar.
- The program will perform the initial testing.
- Wait for the end of the electrotherapy, no taking the electrode off the BAP. The therapy process is displayed as a progress bar.
- Perform the final testing similar to the initial testing.
- According to the results of the final testing, it is concluded whether the factor has improved or not.

BAP therapy order

- Connect the red plug of device wire to the ebonite electrode probe. Connect the black plug of device wire to the cylindrical electrode.
- Click the ***Begin therapy*** button.
- Wet the tip of the electrode probe a bit.
- Press a tip of the probe electrode to the BAP.
- Perform the initial testing of the point shown in the image. The program will perform three measurements consecutively, do not take the electrode off the BAP during all of them. If the measurements have performed correctly, the point factor will be displayed in a histogram. Otherwise, the program will repeat the measurements for the BAP.
- Wait for the end of the point electrotherapy, no taking the electrode off the BAP. The therapy process is displayed as a progress bar.
- Perform the final testing similar to the initial testing.
- According to the results of the final testing, it is concluded whether the point factor has improved or not.

You can change parameters during therapy process:

Therapy duration

- Time (in seconds): 20–300 s.

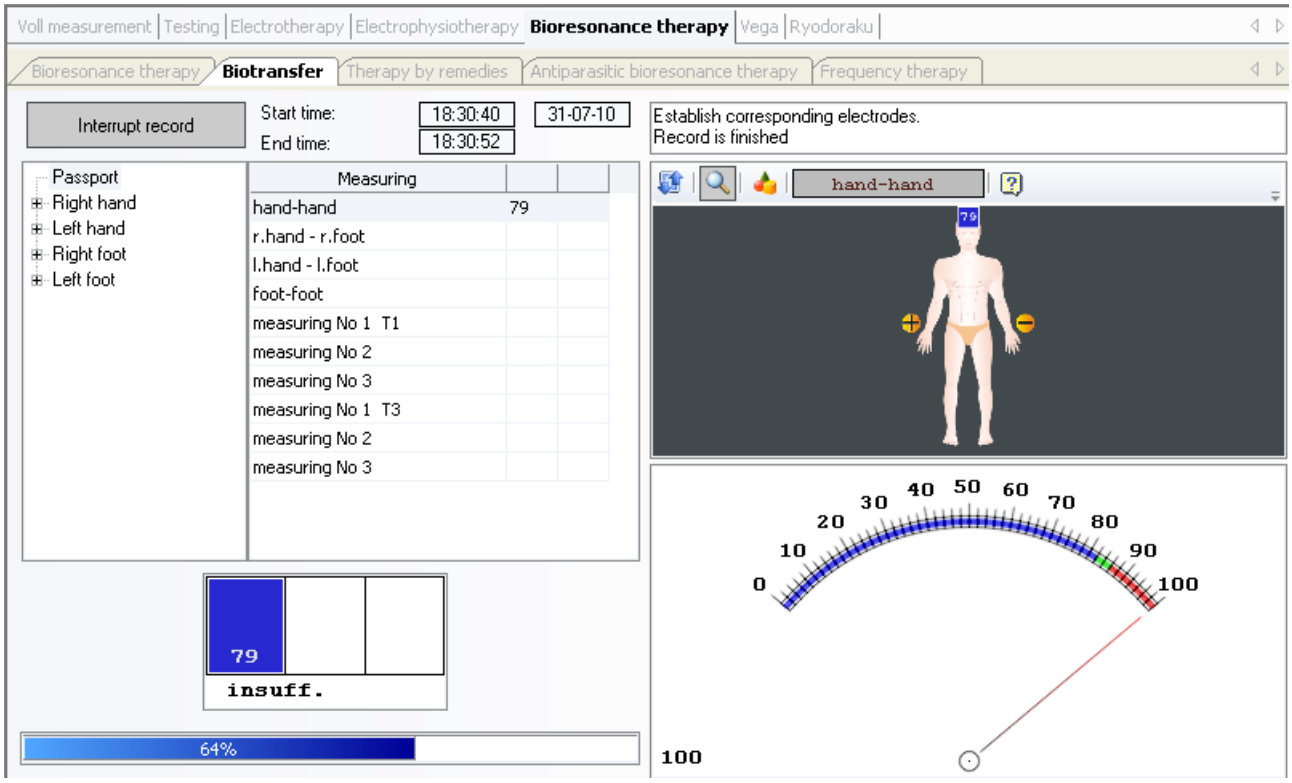
Information transference and saving (autonosode)

This window is for transference of the information from the patient's BAP to water (sugar granules) or saving the bioresonance medicine (autonosode) on a hard disk of the computer.

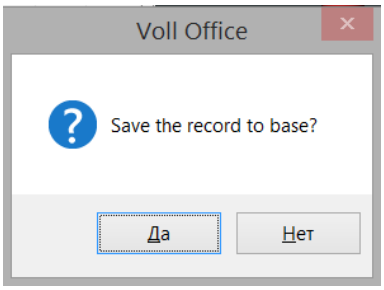
Autonosode is an instant sample of patient's psychoemotional and physiological state at a given moment. It can, so to speak, "invert", cancel that state. It is a sort of analog of homeopathy, because every homeopathic remedy cancels a disorder that the corresponding substance causes when it is taken by healthy person in high poisonous doses. At autonosode preparation, we create a homeopathic medicine that fully characterizes the individual properties of the disease. Therefore, an effect of a such medicine is the most potent.

General type of autonosode is usually taken from the leads (for example, “hand–hand”). This type of medicine has a mild general stimulating effect on the immune system. Prepared autonosode from BAP is clearly more potent in impact, but it is not advised at later stages of a disease.

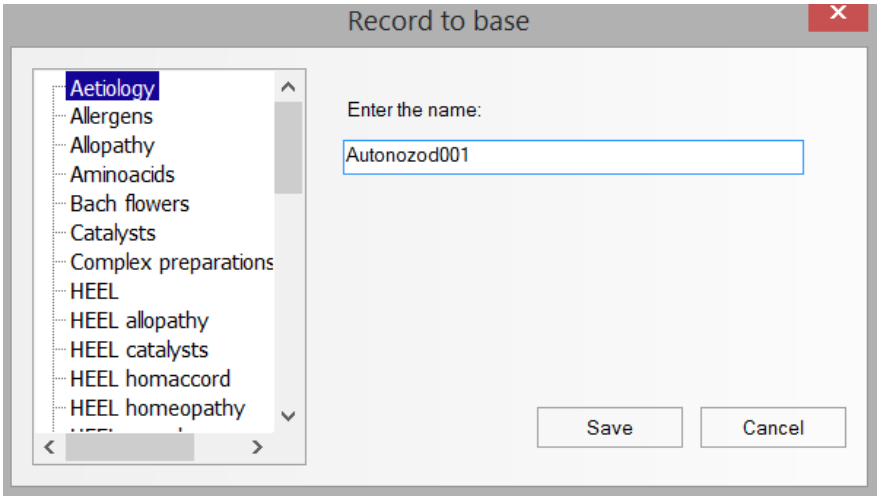
To begin the information recording, click the ***Begin record*** button. The device will switch to the diagnostics mode, and you can record information from the point (or quadrant leads), following instructions and images on the screen. To begin the transference after recording, click the ***Begin transference*** button. In so doing, water (sugar granules) should be in the cup and all electrodes should be closed on the cup. To clear therapy results, click the ***Clear*** button. In the right window the image will be displayed. It will show the BAP that you need at the moment or quadrant leads, as well as a pointer-type indicator displaying the current measuring value. After measurements, the point factor will be displayed in graphic form in a histogram.



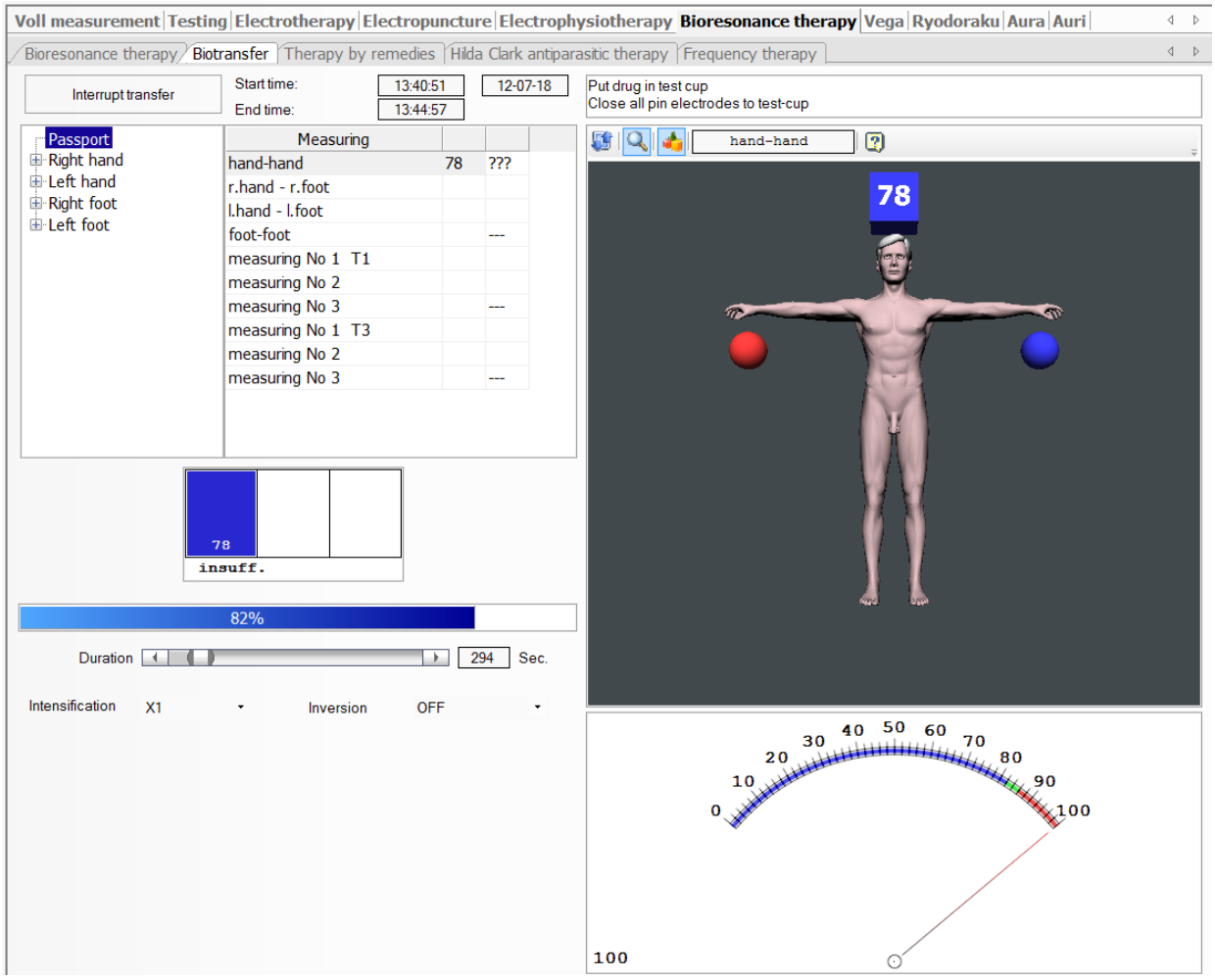
At first, the information is read from BAP or quadrant leads. On the completion of autonosode reading, the program offers to save the obtained information to the hard disk database.



Enter the name of the recorded autonosode:



Upon saving of autonosode, the program will continue the medicine transference to the carrier. Put the medicine into the cup, close red and black patient cable plugs on the cup and click the ***Begin record*** button.



Procedure of transference from quadrant leads

- Connect wire plugs of device wires to cylindrical electrodes.

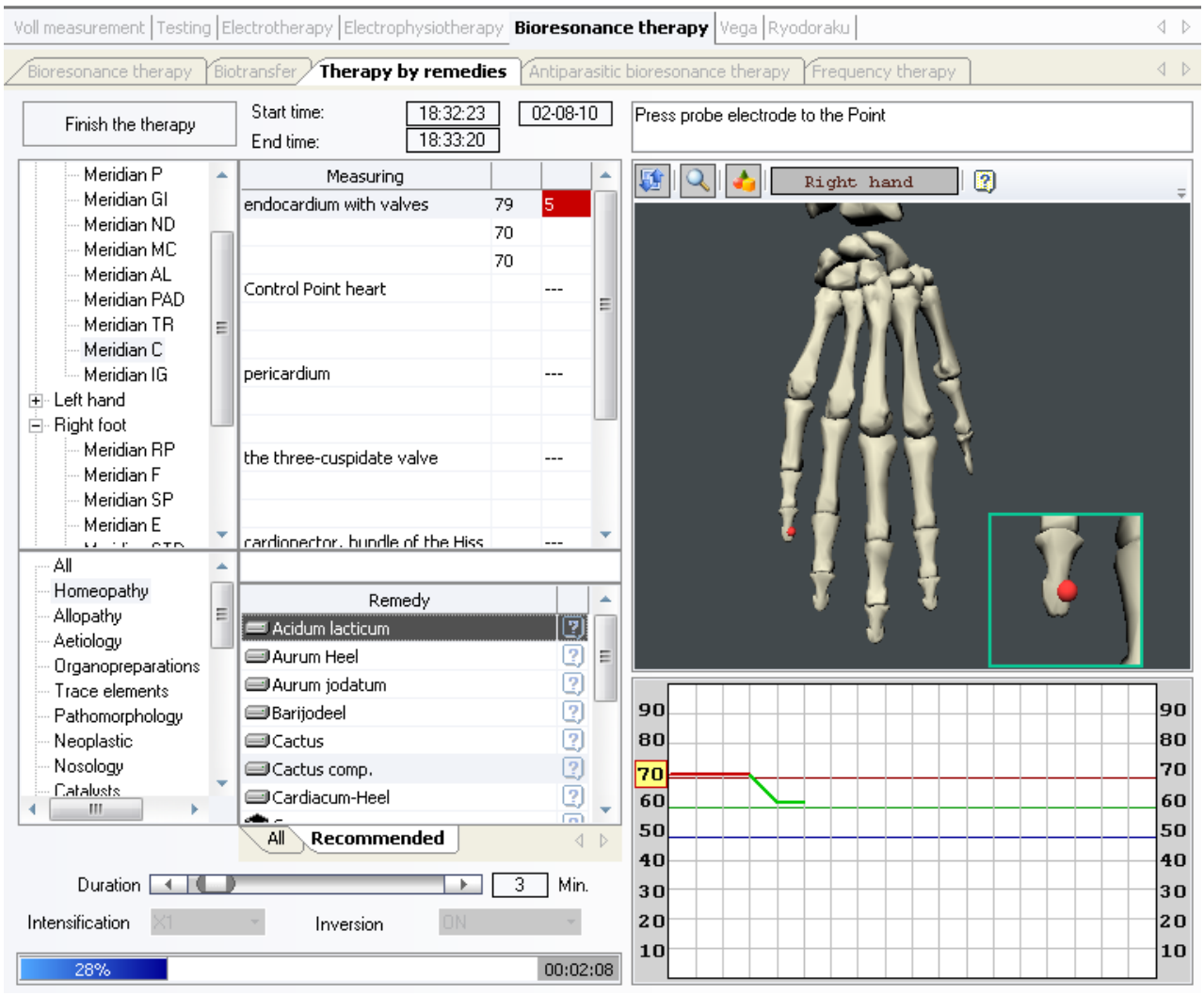
- Wet the cylinders a bit.
- Click the ***Begin record*** button.
- Take cylindrical electrodes into the hands with respect to polarity (as shown in the image). The cylindrical electrode connected to the red plug is '+', connected to the black plug is '–'.
- Press the Space bar.
- The program will perform the initial testing.
- Wait for the end of the information recording, no taking the electrode off the BAP. The recording process is displayed as a progress bar.
- Upon completion of the recording, put sugar granules (a glass of water) in the cup and close all electrodes on the cup.
- Select necessary amplification for the transference (X1–X32).
- Click the ***Begin record*** button. The transference process is displayed as a progress bar.
- Record the autonosode to the database, if you want to.
- Upon completion click the ***Clear*** button.

Procedure of transference from BAP

- Connect the red plug of device wire to the ebonite electrode probe. Connect the black plug of device wire to the cylindrical electrode.
- Click the ***Begin record*** button.
- Wet the tip of the electrode probe a bit.
- Press a tip of the probe electrode to the BAP.
- Perform the initial testing of the point shown in the image. The program will perform three measurements consecutively, do not take the electrode off the BAP during all of them. If the measurements have performed correctly, the point factor will be displayed in a histogram. Otherwise, the program will repeat the measurements for the BAP.
- Wait for the end of the information recording, no taking the electrode off the BAP. The recording process is displayed as a progress bar.
- Upon completion of the recording, put sugar granules (a glass of water) in the cup and close all electrodes on the cup.
- Select necessary amplification for a transference (X1–X32).
- Click the ***Begin record*** button. The transference process is displayed as a progress bar.
- Record the autonosode to the database, if you want to.
- Upon completion click the ***Clear*** button.

Therapy by medicines

This window is for BRT with electronic analogs of medicines that are transferred directly to a patient, bypassing any carrier. It is preferable to choose for the therapy one of the worst BAPs determined during the diagnostic process or perform therapy by quadrant leads. You can find medicines in the **Medicine testing** menu. To start therapy, click the ***Begin therapy*** button. The device will switch to the diagnostics mode, and you can perform necessary measurements and therapy, following instructions and images on the screen. To end therapy, click the ***Finish therapy*** button. To clear therapy results, click the ***Clear*** button. In the right window the image will be displayed. It will show the BAP that you need at the moment or quadrant leads, as well as a pointer-type indicator displaying the current measuring value. During therapy process the graph of therapy influence on the BAP state over time will be shown. After measurements the point factor will be displayed in graphic form in a histogram.



Work sequence for quadrant leads therapy

- Connect plugs of device wires to cylindrical electrodes.
- Wet the cylinders a bit.
- Select the medicine for therapy from the offered list.
- Click the ***Begin therapy*** button.
- Take cylindrical electrodes into the hands with respect to polarity (as shown in the image). The cylindrical electrode connected to the red plug is '+', connected to the black plug is '–'.
- Press the Space bar.
- The program will perform the initial testing.
- Wait for the end of the electrotherapy, no taking the electrode off the BAP. The therapy process is displayed as a progress bar.
- Perform the final testing similar to the initial testing.
- According to results of the final testing, it is concluded whether the factor has improved or not.

BAP therapy order

- Connect the red plug of device wire to the ebonite electrode probe. Connect the black plug of device wire to the cylindrical electrode.
- Select the medicine for therapy from the offered list.

- Click the ***Begin therapy*** button.
- Wet the tip of the electrode probe a bit.
- Press a tip of the probe electrode to the BAP.
- Perform the initial testing of the point shown in the image. The program will perform three measurements consecutively, do not take the electrode off the BAP during all of them. If the measurements have performed correctly, the point factor will be displayed in a histogram. Otherwise, the program will repeat the measurements for the BAP.
- Wait for the end of the point electrotherapy, no taking the electrode off the BAP. The therapy process is displayed as a progress bar.
- Perform the final testing similar to the initial testing.
- According to the results of the final testing, it is concluded whether the point factor has improved or not.

You can select medicines and their amplifications during the therapy. Moving to the new medicine occurs after the next intermediate measurement.

You can change parameters during therapy process:

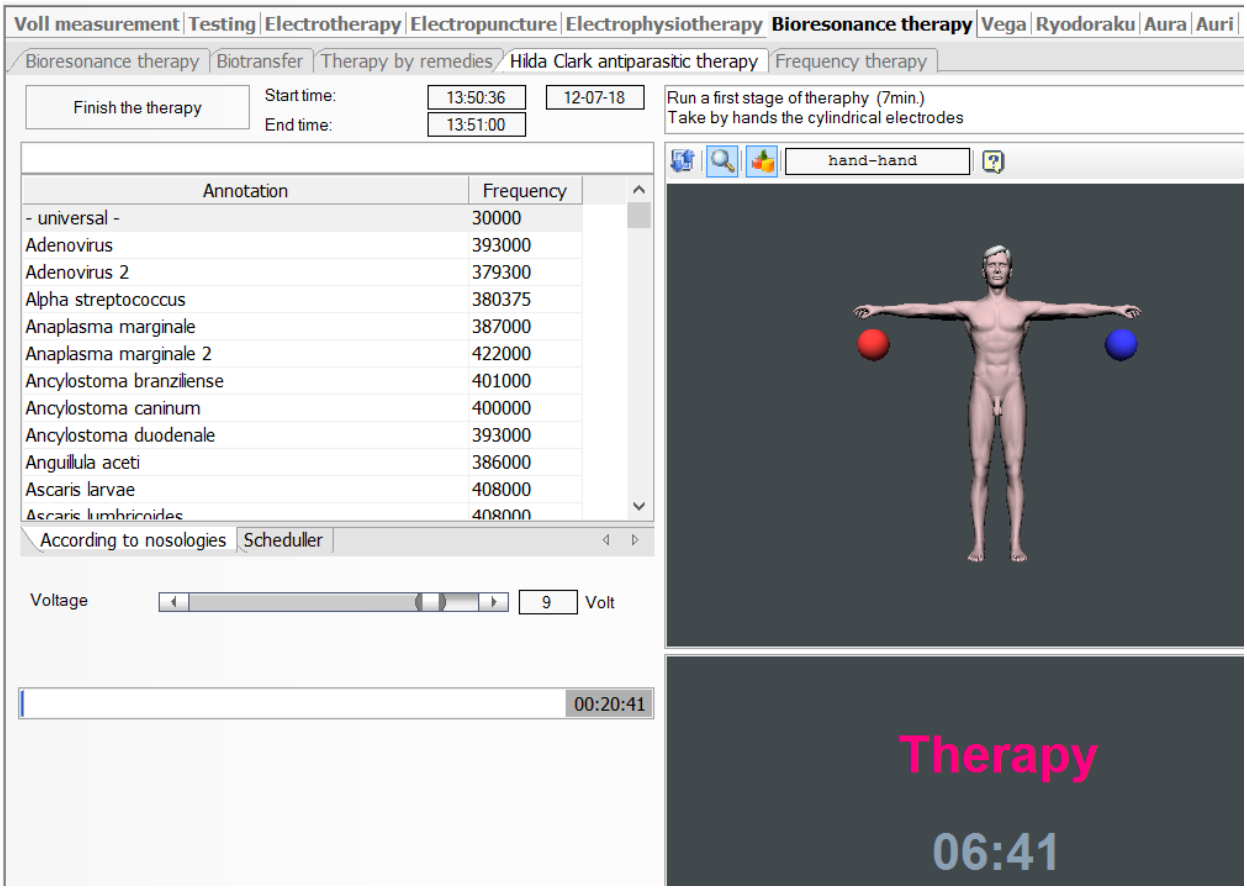
Therapy duration

- Time (in minutes): 20–300 s

Antiparasitic BRT

This window is for the antiparasitic therapy by Hulda Regehr Clark. Generally, the therapy is performed with frequency of 30 000 Hz. There are treatment frequencies for therapy by certain parasite types. They should be selected for every patient empirically.

To start therapy, click the ***Begin therapy*** button. To end therapy, click the ***Finish therapy*** button. To delete the results, click the ***Clear*** button. In the right window the image will be displayed. It will show the quadrant lead you need at the moment.



Therapy order:

- A patient takes the corresponding electrodes into the hands as shown in the image. It is advisable to wrap cylindrical electrodes in cotton wipe wetted with saline solution. Otherwise, the electrochemical degradation of electrodes occurs, and, albeit small, the metal ions intake.
- Select therapy voltage and duration.
- Click the ***Begin therapy*** button. The therapy process is displayed as a progress bar and information in the window.
- Upon completion click the ***Clear*** button.

Therapy is performed in two phases. There is 20 minute pause between phases. The program is paused automatically.

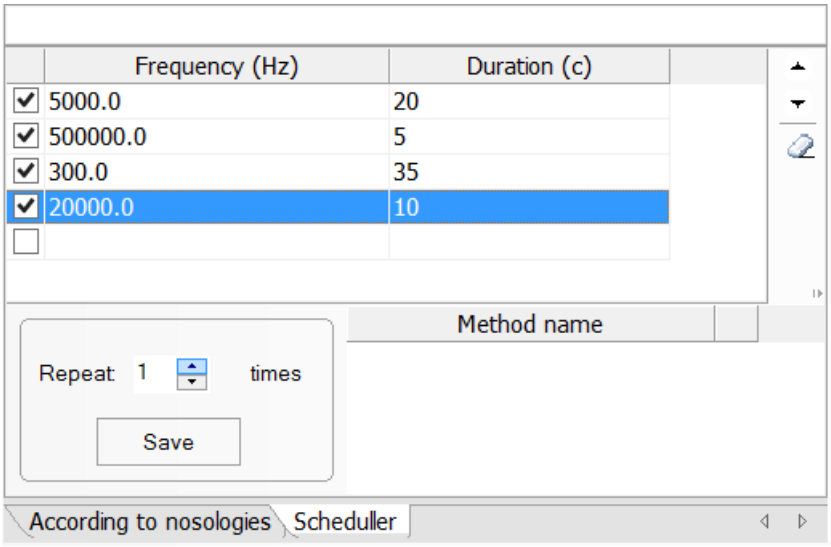
You can change parameters during therapy process:

Electric current parameters:

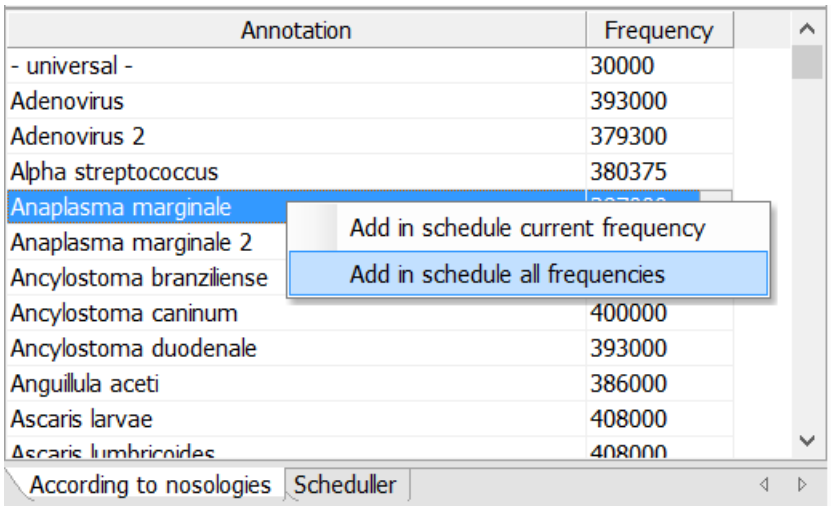
- Voltage range (V): 5–10 V

Personal techniques creation

In the Scheduler mode a user can create his own techniques himself for various nosologies or patients. To do that, create the list of frequencies in Hertz and durations of impact in seconds during therapy. Zero frequency corresponds to rest. The maximum frequency for meander is 500 000 Hz. Number of retries is a number of repeats of therapy session that is set in a schedule. To transfer frequencies from the general list to the Scheduler, click the nosology name with the right mouse button. After data input, click the ***Save*** button and enter the technique name that will be displayed on the list of created techniques. Besides, it is possible to write a comment for every personal technique. To do that, click the technique name with the right mouse button.

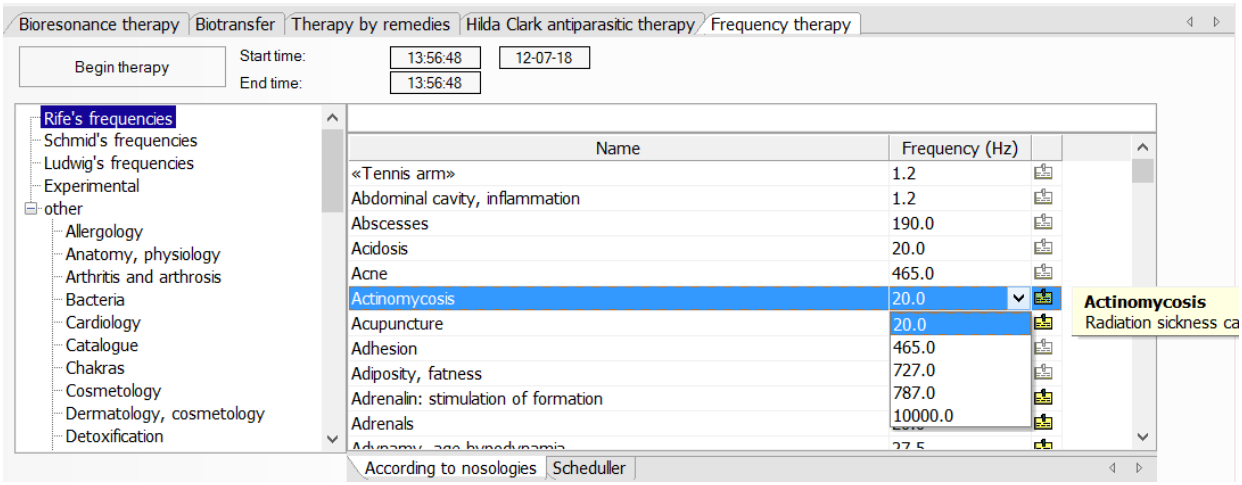


To add the existing frequencies to the schedule, click them in the general menu with the right mouse button:



Frequency BRT

This window is for the frequency therapy according to different researchers' methods (all frequencies are taken from publicly available sources; we cannot guarantee the accuracy of that data). Besides, you can create your own therapy technique. To start therapy, click the ***Begin therapy*** button. To end therapy, click the ***Finish therapy*** button. To delete the results, click the ***Clear*** button. You can see the whole frequency list for the certain nosology by clicking a frequency value. When you place the mouse cursor over the yellow square on the right of a frequency value, a prompt message will appear.



Therapy order:

- Place corresponding electrodes on necessary areas of the patient body.
- Select therapy voltage and duration as well as electric current parameters.
- Click the ***Begin therapy*** button. The therapy process is displayed as a progress bar.
- Upon completion click the ***Clear*** button.

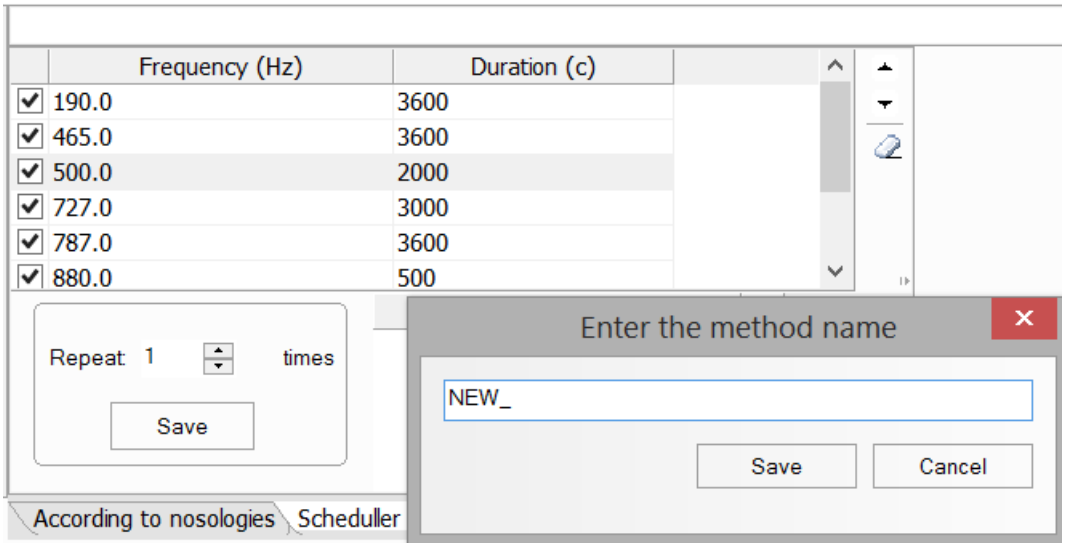
Electric current parameters:

- Voltage range (V): 5–10 V

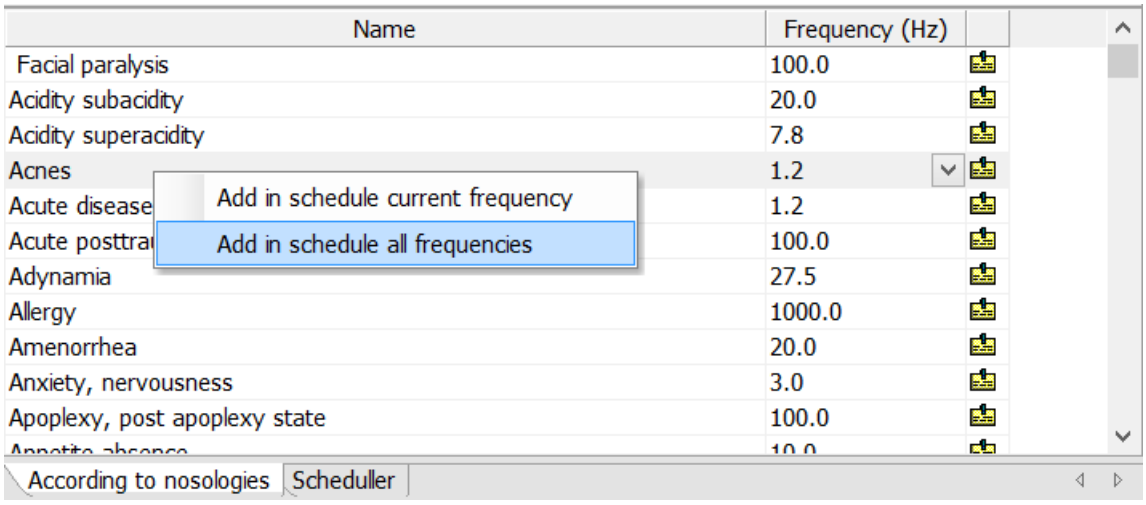
Personal techniques creation

In the Scheduller mode a user can create his own techniques himself for various nosologies or patients. To do that, create the list of frequencies in Hertz and durations of impact in seconds during therapy. Zero frequency corresponds to rest. The maximum frequency for meander is 500 000 Hz, for sine is 70 000 Hz. Number of retries is a number of repeats of therapy session that is set in a schedule. To transfer frequencies from the general list to the Scheduller, click the nosology name with the right mouse button. After data input click the ***Save*** button and enter the technique name that will be displayed in the list of created techniques. Besides, it is possible to write a comment for every personal technique. To do that, click the technique name with the right mouse button.

For example, in this tab you can create the mode of therapy for a total duration of more than 3600 sec. After clicking the **Save** button, you should enter the technique name.



To add the existing frequencies to the schedule, click them in the general menu with the right mouse button:



VEGETATIVE RESONANCE TEST (VRT)

Technique description

Development of the Voll method for BAP diagnostics have led to the emergence of vegetative resonance test (VRT). This method is based on the measurement of electric conductivity of the point, when a testing medicine is included into the measuring circuit. The method was developed in Germany by a Dr. H. Schimmel in 1978. It is based on electropuncture diagnostics and medicine testing according to R. Voll and bioelectronic functional diagnostics by V. Schmidt and H. Pflaum. However, if for Voll's method 250–500 biologically active points (BAP) are used to meet the challenges of diagnostics and medicine testing, during VRT only one reproducible point is used.

Over more than 15 years of studies of Dr. Schimmel and his followers, this method has become one of the most effective diagnostic tool, primarily by development and use of special medicines and frequencies for testing, as well as very low measuring currents.

Implementation of VRT into clinical practice is carried out by the VEGA company (Germany). It developed the first devices called *VEGA-TEST*, realizing capabilities of BAP measurement according to this method.

In contrast to other methods of electropuncture diagnostics, the vegetative resonance test allows moving from the general to the special. At first, an indication to any disorders of certain organs and systems (or impact of adverse factors) is given, such as radiation exposure, electromagnetic fields of force, infectious agents, and other exogenous factors, on the "yes-no" principle.

If "yes" (a positive result), it is possible to identify:

— "where" — which organ or system are affected by adverse factors;

— "what" — the form of a disease (it is clarified by nosodes);

and answer the question:

— "with what" and "how" to eliminate the detected pathology in an optimal manner, using different therapy methods. This approach helps significantly reduce the diagnostics time, select optimal methods and therapeutic strategies as well as provide better monitoring of therapy effectiveness.

As the method is very similar to Voll diagnostics (the basic difference is that the pressure of the probe on BAP during testing must not be more than 100–200 g, i.e. two times less than during Voll diagnostics), it has the same indications, contraindications, as well as a doctor, patient and work place requirements.

There are several options for carrying out the vega test, but generally the test procedure is performed in three stages:

1. Before measurements the provocation test (the functional load) is carried out: the current with frequency of 12 Hz for 15–30 sec is sent either by main leads or on the end points of lymphatic system meridian described by Voll (**LI1** on the right and on the left). It should be noted that some doctors consider that this stage affects the initial body state before testing and do not perform it. So this stage in our program has moved to separate menu.

2. So-called reproducible BAP for measurements is identified using **build-up** (triple smooth increase and reduce pressure on the BAP, without jolts). When such a BAP is found, the device switches to the high-sensitivity mode and the scale is expanded. Usually the BAP of allergy meridian **AL1**, the BAP of connective tissue degeneration meridian **STD1**, the BAP of endocrine system meridian **TR1** are used. A point is considered reproducible if during three-time pressure on that BAP with the same intensity the device pointer shows the same value. It means the following. Let's assume that BAP conductivity after measurement is 50. Then you should reduce the pressure on the BAP slightly (do not take off the probe from the point). The indicator will drop (almost to zero) and you should increase the pressure again. The pointer will return to 50. It repeats three times. It is desirable to wet the probe tip with water. If the pointer does not return to the initial value or the organ or system associated to the point has some functional disorders, the point is not considered representative and you should find another suitable BAP. When the same value is reached three times, the device switches to the vega testing mode, and that initial measured value is normalized to 80. The device's scale changes its view.

Measurement duration on the tested BAP should not exceed three seconds. The pressure on the BAP should be done smoothly, without jolts or abrupt pressure change. If the pressure on the BAP is too intensive or prolonged, the BAP can become unusable for measurements.

3. The Vega test itself. Measure the conductivity of the found representative point, sequentially introducing different homeopathic remedies (placed into the container for testing or connected to the device **Test** socket with special wire) in the measuring circuit. It is estimated that if device readings reach 80 (an initial value), the medicine has no effect (it is not suitable). If the pointer does not reach 80, the medicine influences the body (it is suitable). In that case you can use the medicine for the treatment of diseases with similar symptoms. Such measurement is called direct.

For example, the detection of an affected organ:

Indication to the affected organ — an organopreparation in D4 (for example, D4 — the liver)

It means that during an organopreparation testing in a D4 potency (particularly, the liver organopreparation) the initial measuring level of 80 c. u. reduces after build-up (for example, to 20 c. u.). Therefore, a patient has a liver disease (or other organ disorder depending on the choice of organopreparation). The down arrow (⇓) given after organopreparation refers to positive answer.

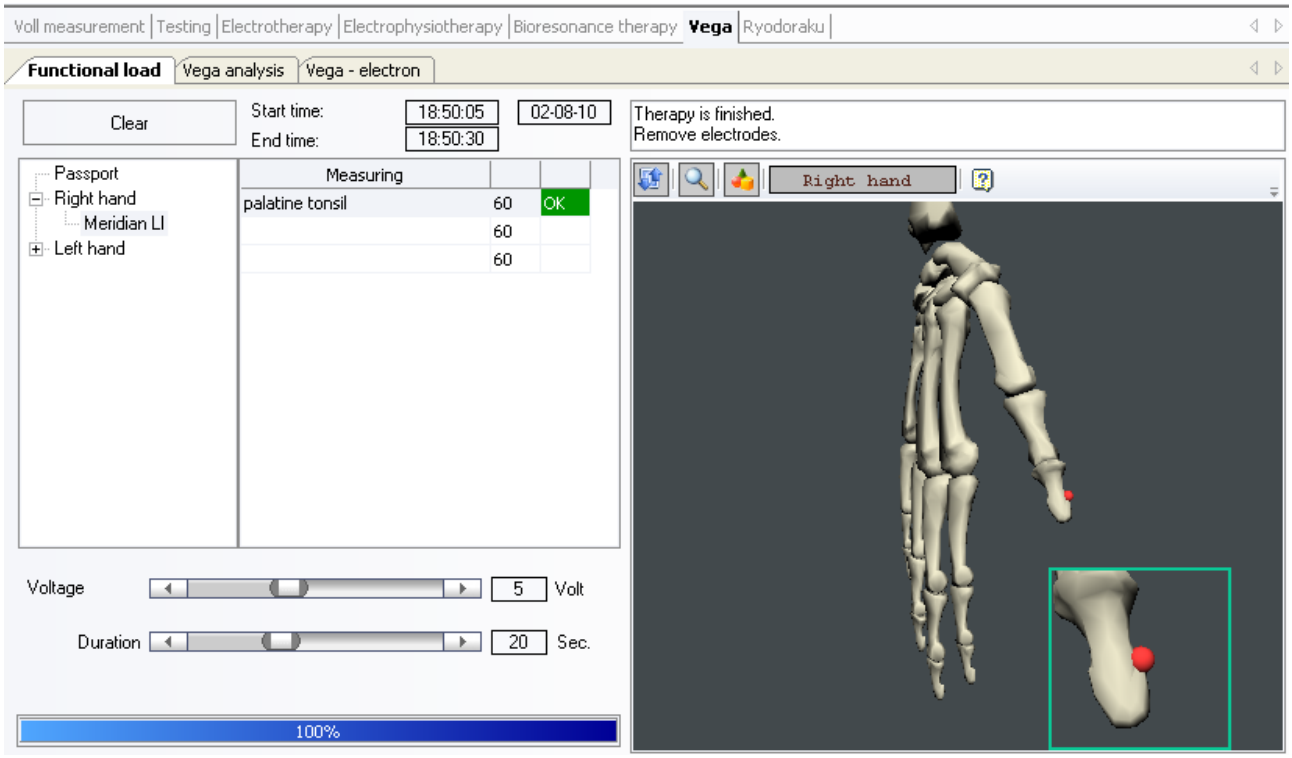
In the next stages, the filtering principle in VRT method is used (in subsystem Vega electronic only). In the process two testing medicines are sequentially introduced into the measuring circuit. Test results are interpreted the following way. The testing medicine, called a filter, is placed in a container connected to the **Test** socket. This results in the build-up value reduction. The next suitable testing medicine introduced after the first one, returns the build-up value to initial 80 c. u. of the scale.

For example, the affected organ is a liver. In that case the organopreparation is called a filter and reduces the build-up value. After that, the testing medicine (a viral hepatitis A nosode) is introduced into the measuring circuit and returns the build-up value to initial 80 c. u. of the scale. This leads to the conclusion that the patient's liver is affected by hepatitis A virus.

The same might apply to any issue depending on the selected testing medicine used as a filter.

Functional load

This window is for the initial provocation test: a current with frequency of 12 Hz for 15–30 sec is sent either by main leads or on the end points of lymphatic system meridian described by R. Voll (**LI1** on the right and on the left). To start therapy, click the ***Begin therapy*** button. To end therapy, click the ***Finish therapy*** button. To clear therapy results, click the ***Clear*** button. In the right window the image will be displayed. It will show the BAP that you need at the moment or the quadrant lead.



Work sequence for quadrant leads therapy

- Connect plugs of device wires to cylindrical electrodes.
- Wet the cylinders a bit.
- Take cylindrical electrodes into the hands with respect to polarity (as shown in the image). The cylindrical electrode connected to the red plug is '+', connected to the black plug is '–'.
- Click the ***Begin therapy*** button.
- The program will perform the initial testing.

- Wait for the end of the electrotherapy, no taking the electrode off the BAP. The therapy process is displayed as a progress bar.

BAP therapy order:

- Connect the red plug of device wire to the ebonite electrode probe. Connect the black plug of device wire to the cylindrical electrode.
- Click the ***Begin therapy*** button.
- Wet the tip of the electrode probe a bit.
- Press a tip of the probe electrode to the BAP.
- Perform the initial testing of the point shown in the image. The program will perform three measurements consecutively, do not take the electrode off the BAP during all of them.
- Wait for the end of the point electrotherapy, no taking the electrode off the BAP. The therapy process is displayed as a progress bar.

You can change parameters during therapy process:

Electric current parameters:

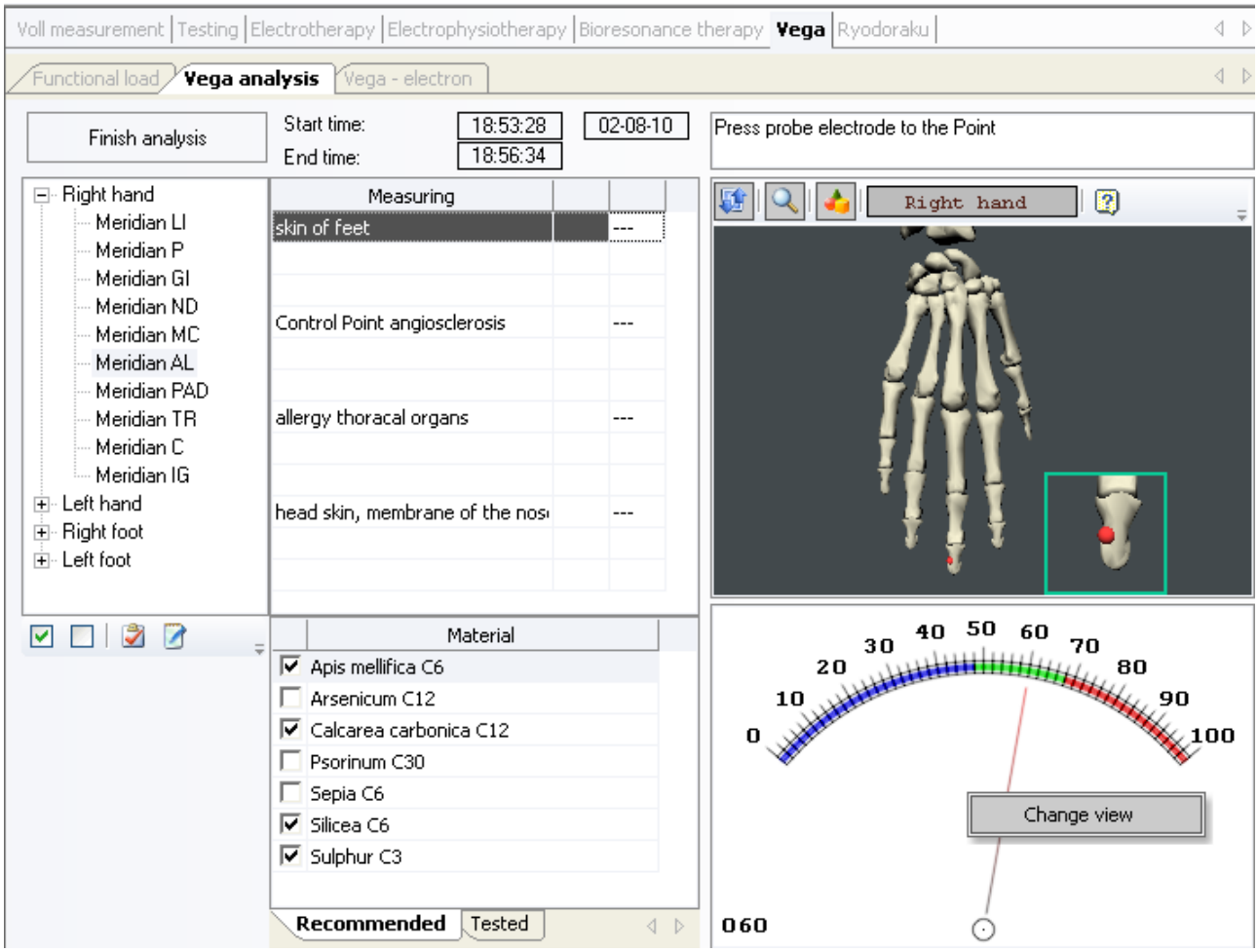
- Voltage range (V): 5–10 V

Therapy duration

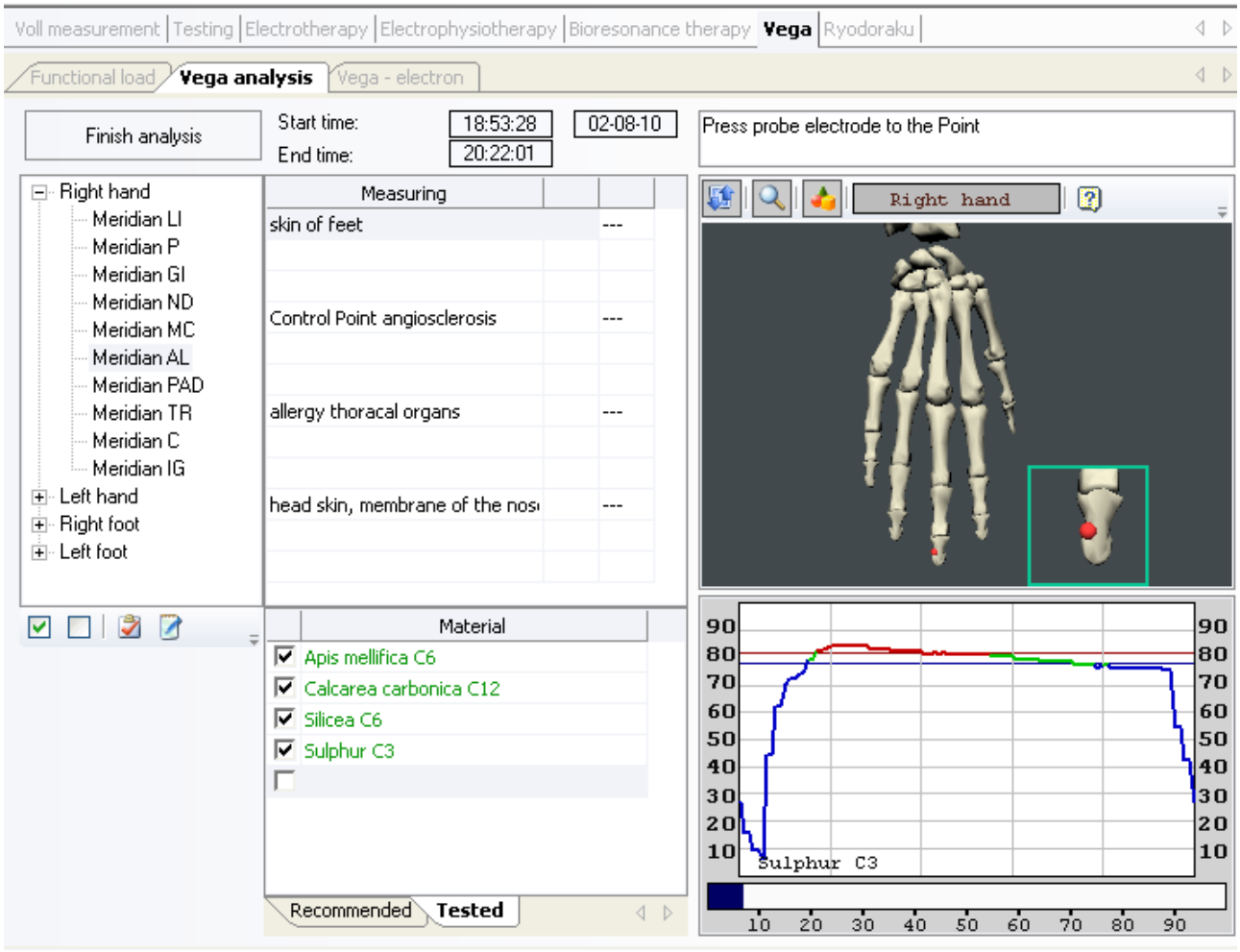
- Time (in seconds): 1–60 s

Vega analysis

This window is for the vega analysis on all meridian points using external medicines **placed into the container** connected to the **Test** socket of the device with a cable for testing. Prior the analysis, you should select for the certain BAP the available (testing) substances from the recommended by the program:



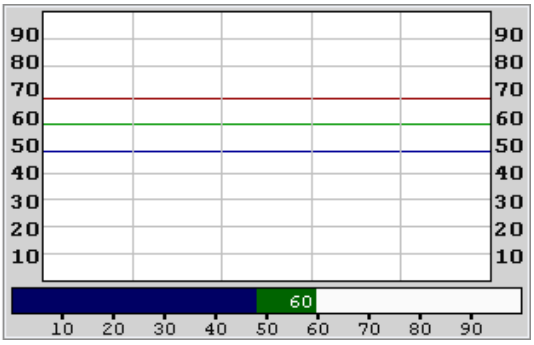
To start examination, click the ***Begin analysis*** button. The device switches to the diagnostics mode, so you can perform measurements, following the instructions and images on the screen. To finish analysis, click the ***Finish analysis*** button. To clear analysis results, click the ***Clear*** button. In the right window the image will be displayed. It will show the BAP you need at the moment and a slider-type indicator displaying the current measuring value.

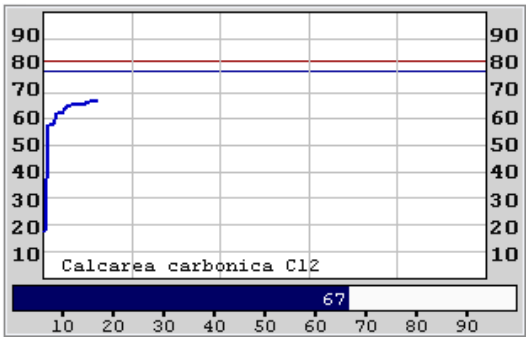


If you press ~ button on the keyboard, the program will switch to the build-up mode again.

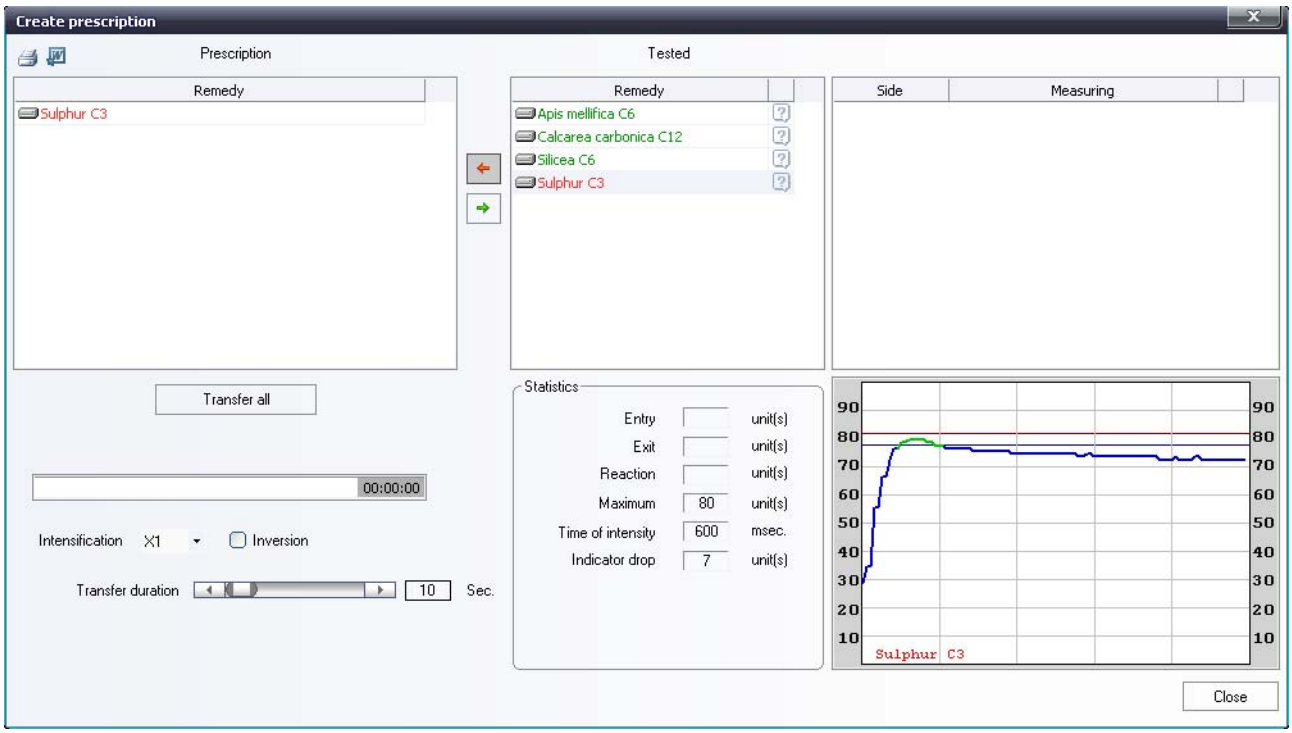
Measurement order:

- Connect the red plug of device wire to the ebonite electrode probe. Connect the black plug of device wire to the cylindrical electrode.
- Click the ***Begin analysis*** button.
- Wet the tip of the electrode probe a bit.
- Press a tip of the probe electrode to the BAP.
- So-called **reproducible BAP** for measurements is **identified**. Usually the BAP of allergy meridian AL1, the BAP of connective tissue degeneration meridian STD1, the BAP of endocrine system meridian TR1 are used. A point is considered reproducible if during three-time pressure on that BAP with the same intensity the device indicator shows the same value. Perform the build-up, until the indicator shows the same value three times after sequential build-up (gradual increase of the pressure) on the BAP. **Attention. During this initial testing of reproducible BAP the data is not kept in the program.** The difference between the minimum and maximum values during build-up should not be less than 20–30 units.
- If after triple build-up the point is reproducible (it is suitable), the device switches to the vega testing mode (the indicator view and its sensitivity are changed):





- Measure the conductivity at the reproducible BAP, sequentially placing different medicines in the round cup (or connecting cassettes to the device **Test** socket) and then pressing the Space bar. If the indicator value reaches 80 (blue and red zone), the medicine does not influence the body. If the indicator value does not reach 80 (or reaches, but then the drop value occurs), it is considered that the medicine influences the body.
- Carry out the same procedure for all medicines from the list.
- Upon completion of the testing, you can see results by clicking the **Show prescription** button.

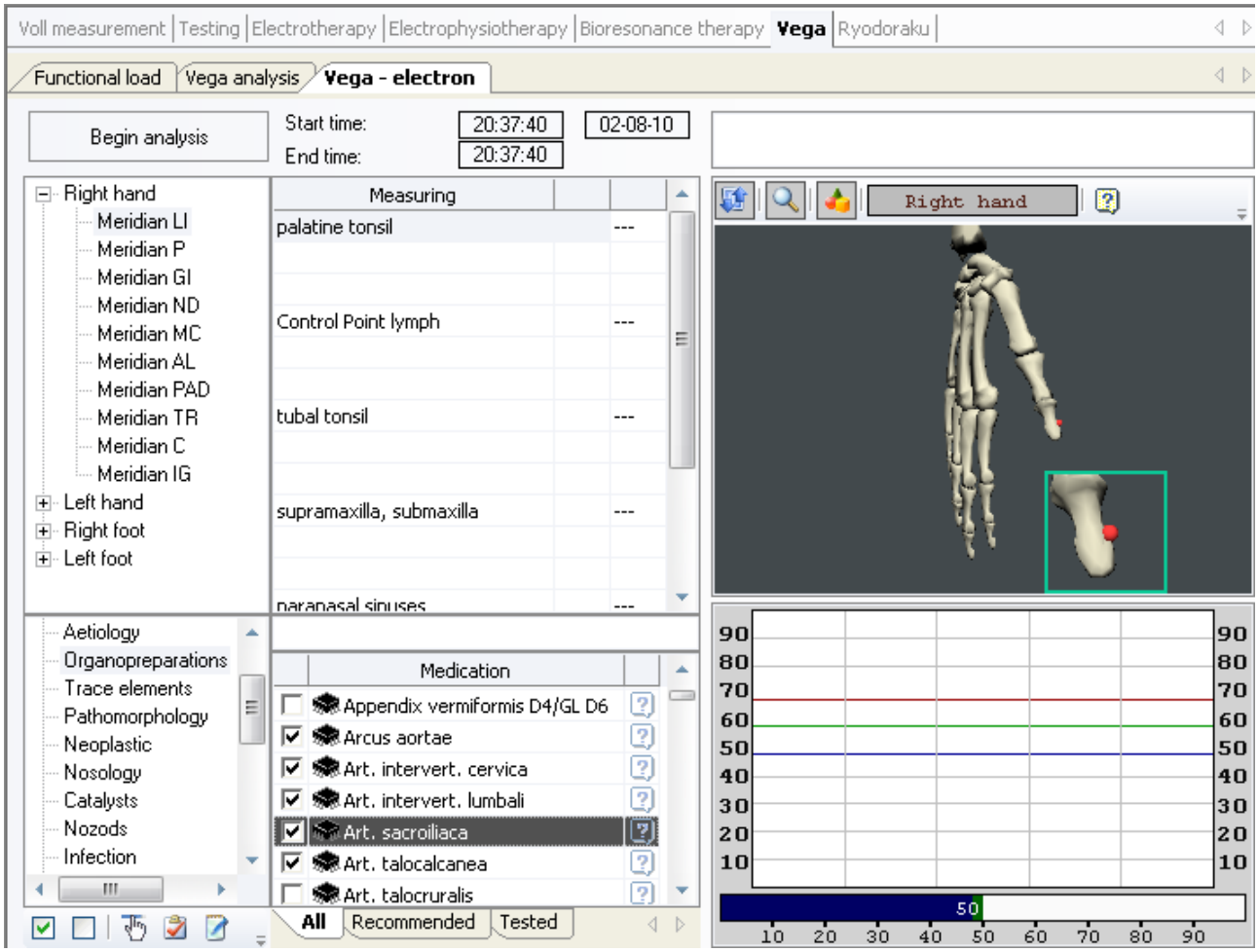


Vega electronic

This window is for the vega analysis on all meridian points with electronic copies of medicines recorded to the ROM of the device (i. e. with analog medicines). It is **impossible** to include **digital** medicines from the list in Vega electronic subsystem (they are simply not displayed).

It is possible to include medicines in **Vega electronic** menu. Before examination using Vega electronic subsystem, it is possible to include filter medicines (for example, **Epiphysis D26**). To do that, the filter medicine is placed into the container connected to the **Test** socket of the device with a cable for testing. You can also include a testing cassette produced by outside manufacturer to that socket.

Before analysis tick boxes of testing medicines on the list.

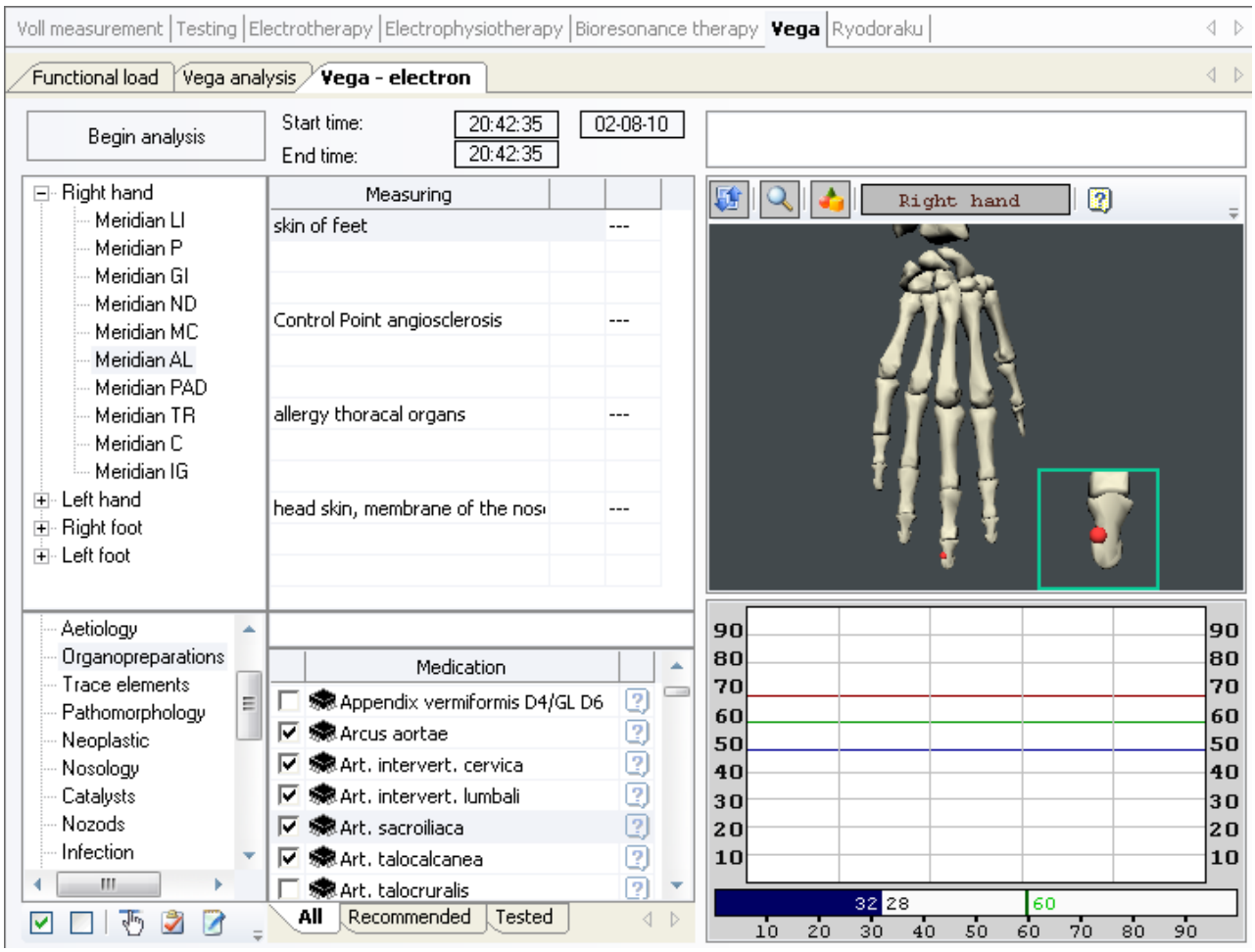


To start the examination, click the ***Begin analysis*** button. The device switches to the diagnostics mode and the testing of selected medicines starts. If medicines are not selected, the list is empty. In that case you should go to **All** or **Recommended** tab to tick boxes of desirable medicines. You can perform measurements, following the instructions and images on the screen. To finish analysis, click the ***Finish analysis*** button. To clear analysis results, click the ***Clear***

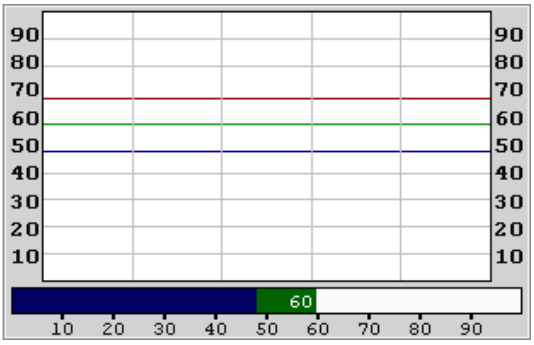
button. In the right window the image will be displayed. It will show the BAP you need at the moment and a slider-type indicator displaying the current measuring value. *To go to the build-up mode without interrupting the vegetative resonance test, press the "~" button on the keyboard.*

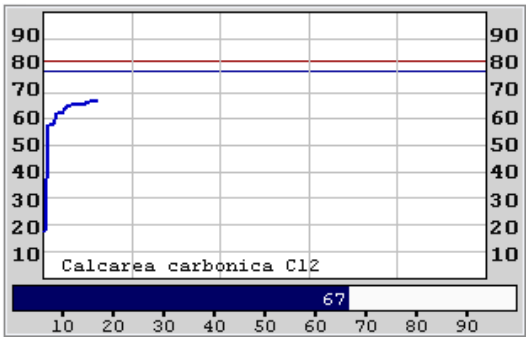
Measurement order

- Connect the red plug of device wire to the ebonite electrode probe. Connect the black plug of device wire to the cylindrical electrode.
- Select a group of medicines for testing from the offered list (to do that, tick boxes next to desirable medicines). Rather, the list of medicines recommended for VRT is made as an example of how to use it. Users can themselves make lists of recommended medicines for certain cases.
- Click the ***Begin analysis*** button.
- Wet the tip of the electrode probe a bit.
- Press a tip of the electrode probe to the BAP.
- So-called **reproducible BAP** for measurements is **identified**. Usually the BAP of allergy meridian AL1, the BAP of connective tissue degeneration meridian STD1, the BAP of endocrine system meridian TR1 are used. A point is considered reproducible if during three-time pressure on this BAP with the same intensity the device indicator shows the same value. Perform the build-up, until the indicator shows the same value three times after sequential build-up on the BAP. The difference between the minimum and maximum values during build-up should not be less than 20–30 units.

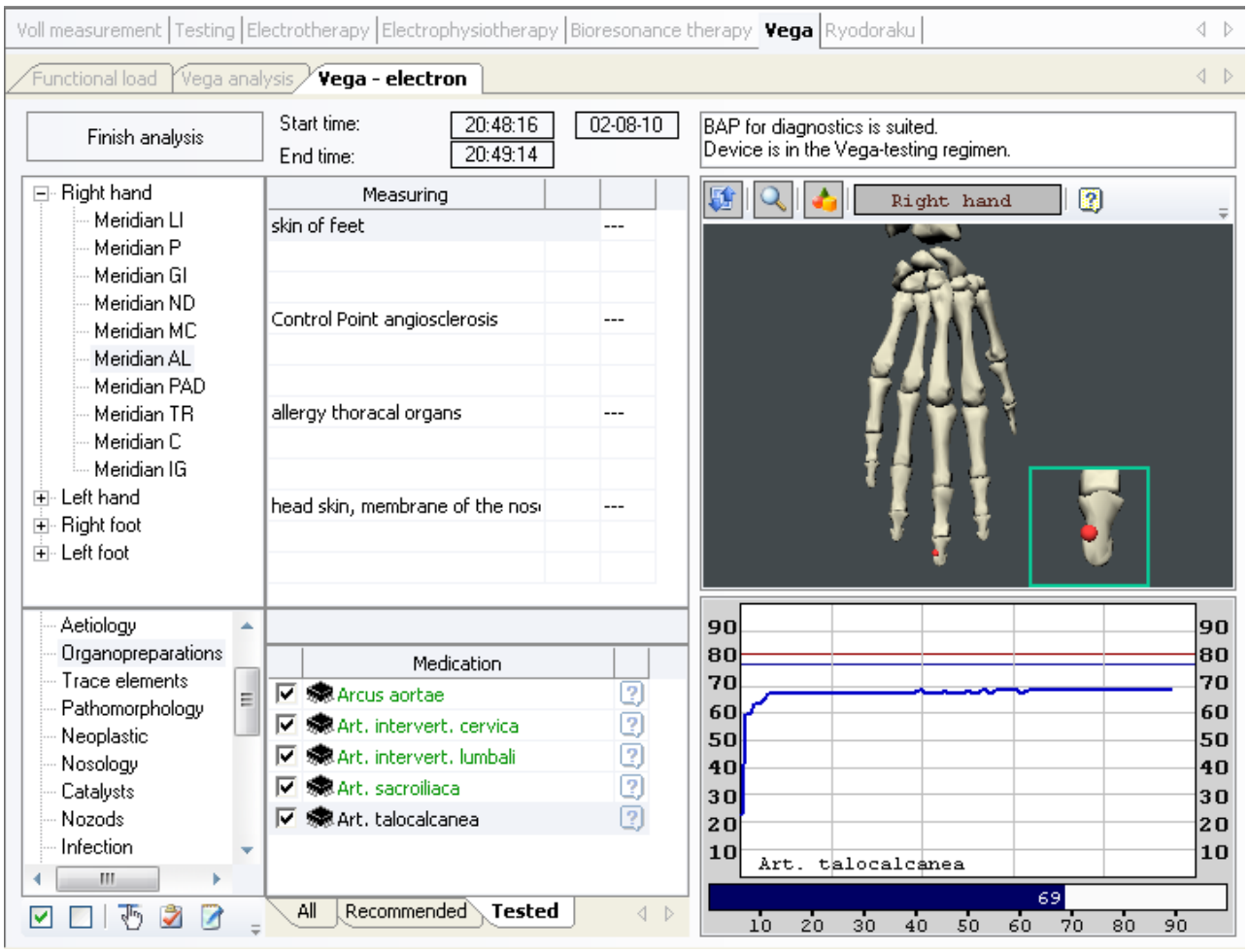


- After triple build-up, if a suitable (reproducible) point has found, the device switches to the vega test mode (an indicator is changed as well as its sensitivity).



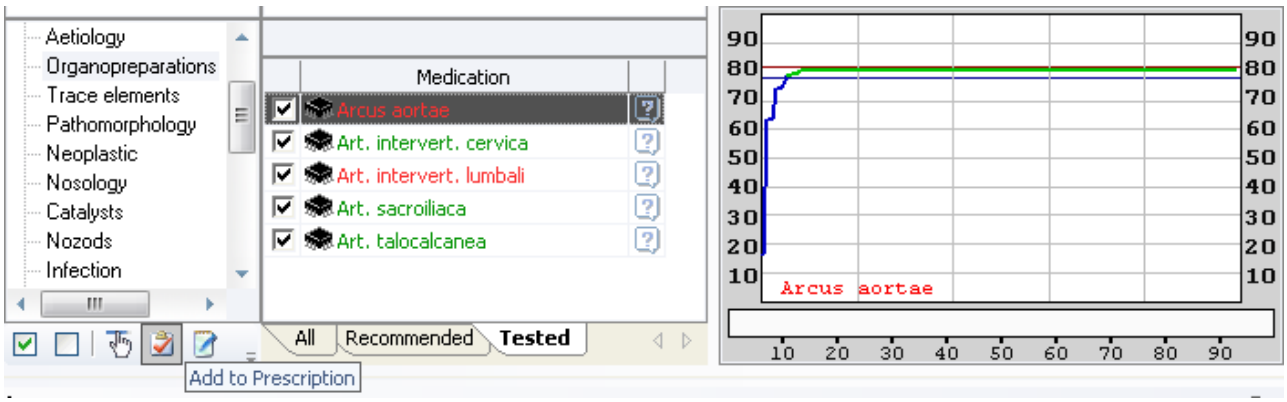


- If necessary, connect the container to the **Test** socket of the device and place the filter medicine inside.
- Measure the conductivity of the reproducible BAP, sequentially introducing different medicines in the measuring circuit. If the indicator value reaches 80 (blue and red zone), the medicine does not influence the body. If the indicator value does not reach 80, it is considered that the medicine influences the body.



- After testing of every medicine, take the electrode off the BAP and press it again. Wait for the end of measurements for the rest of selected medicines.
- The program will automatically carry out the measurements for all medicines selected for the test. At the same time, you can click the button and switch to a manual testing mode at any moment.

If you select a medicine on the list with mouse in a manual mode, it immediately automatically includes to the testing circuit, and you can start testing on the selected point. If you select other BAP for testing and you did not perform initial measurements on it, the program carries out an initial point test. If during the testing process an operator considers the tested medicine as suitable for the patient, it is possible to include it into prescription by clicking the button or pressing the **Ins** key on the keyboard.

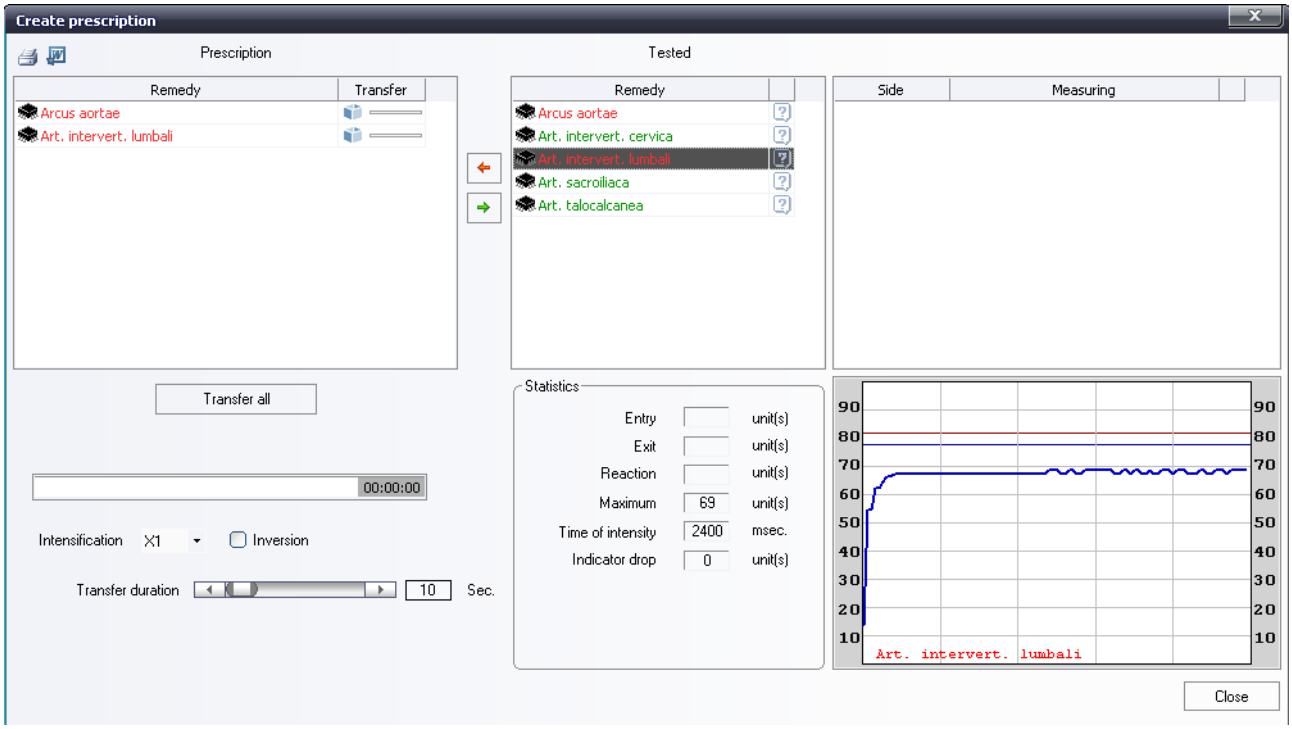


The medicine selected for including into prescription will be displayed on the list marked in red.

- At the end of test and during testing, you can see the results by clicking the **Show prescription** button.

Prescription editing

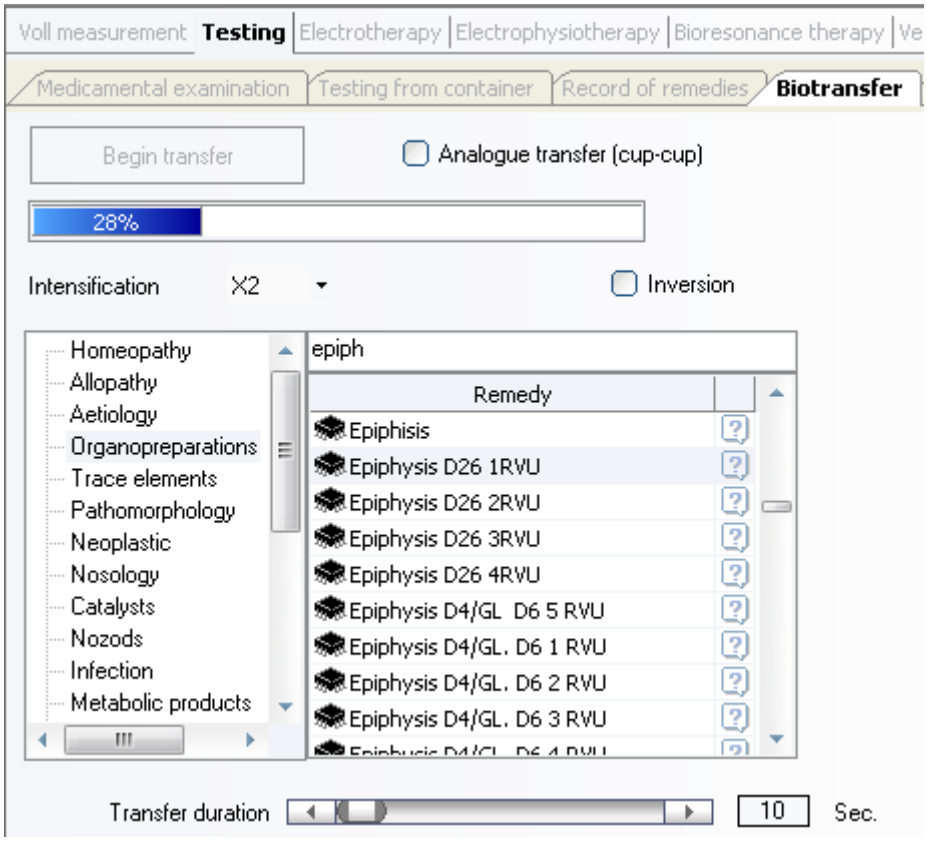
In the window of prescriptions you can view the list of medicines tested for each BAP, and the list of medicines included in prescription. You can also take a final decision in regard to the including medicines in prescription.



Preparation of Epiphysis filter medicines

Use of **Epiphysis D26** medicine allows making VRT more effective by increasing of patient's autonomic nervous system sensitivity to testing medicines. For individual customization, an **Epiphysis D26** organopreparation is included into measuring circuit (there is a possibility to include 1–4 c.u. of this medicine). Gradually increasing the number of units of included Epiphysis D26 medicine, find such number of units which reduces a build-up value. The number of medicine units, obtained during the selection process, is reduced by 1 c. u. The medicine remains consistently included in a testing circuit at all stages of later measurements.

If **Epiphysis D26** medicines are not available, they can be recorded using X2 amplification to the carrier (sugar granules), connecting the container before examination. To do that, you should go to the **Testing** menu, then **Information transference** tab, and select the needed medicine record in **Organopreparations** catalogue. After that, set the X2 amplification and click the **Begin transference** button.



You may prepare any filter medicine from medicines database in the same way.

RYODORAKU

In the last two decades, the doctrine of Ryodoraku has become the most popular in Japan. In 1950, a doctor and researcher Nakatini found a line, resembling a meridian of kidneys. It contained a series of points which had a higher conductivity than the adjacent areas. This phenomenon was observed in patients with renal edemas, but not in healthy people. Nakatani named this line "Ryodoraku", i. e. the line of good electric conductivity (or R-line). In Japanese, the word Ryodoraku consists of several components: *ryo* means good, *do* means conductivity, and *raku* is a line.

These Ryodoraku lines (R-lines) resemble classical meridians and can be seen at various diseased conditions. The "Ryodoraku" phenomenon can be observed not only in connection with diseases of internal organs but also can reflect their physiological changes. There are pathological and physiological Ryodoraku lines.

Nakatani offered to divide the R-lines into two groups:1) Hand (identified by the letter "H") and 2) Foot (identified by the letter "F").

Conformity of biologically active points with organs:

H1 (LU9*, P9)	Lung
H2 (PC7*, MC7)	Pericardium (blood vessels)
H3 (HT7*, C7)	Heart
H4 (SI4*, IG4)	Small intestine
H5 (TE4*, TR4)	Triple energizer (Three heaters)
H6 (LI5*, GI5)	Large intestine
F1 (SP3*, RP3)	Spleen/ Pancreas
F2 (LR3*, F3)	Liver
F3 (KI3*, R3)	Kidney
F4 (BL64*, V64)	Urinary bladder
F5 (GB40*, VB40)	Gall bladder

F6 (ST42*, E42)	Stomach

The skin in the area of 12 representative points in a healthy person has a different degree of sensitivity to the testing Nakatani's signal, depending on relation to one or another dermatome (or more precisely, autonomic ganglia of the sympathetic trunk innervating one or another dermatome). Therefore, the degree of change of electrical conductivity in these skin areas varies during the testing process. When Nakatani detected such a feature, he developed scales for interpretation of conductivity values for each dermatome and created a so-called standard "Ryodoraku" chart (R-chart).

The results of conductivity measurements on representative BAPs are recorded to the R-chart. Each conductivity value in a representative BAP (the current magnitude is measured in microamperes), is marked on a corresponding scale. Then the arithmetic mean value of all 24 values is calculated, which is marked on two end scales of the R-chart corresponding to the mean conductivity values (levels). Values on the end scales are connected with a horizontal line. Two another horizontal lines are drawn parallel to that line, above and below, at a distance of 7 mm each. In such a way a normal range is determined, and the horizontal lines are upper and lower limits. It should be noted that indicated values of a normal range (14 mm) are valid if the height of the R-chart scale is 105 mm.

In this program the standard voltage of 12 V and a short circuit current of 200 μA is used, as offered by Nakatani. After every point measurement, the values of each point are averaged and corrected to the value that is marked on the R-chart in millimeters (maximum value is 105 mm). Besides, for each R-line the correction factors are applied. Therefore, the similar values of current intensity obtained from different R-lines can have different height on the R-chart.

THE ELECTROPUNCTURE DIAGNOSTICS PROCEDURE

Workplace requirements:

The room for electropuncture diagnostics and therapy should be used only for these purposes. X-ray units, microwave devices, ungrounded electrical wires should not be located near the room. The floor must be covered with nonstatic materials. The air humidity and the room temperature should be maintained within 70–80 % and + 20 °–22 °C respectively. If for the artificial lighting the daylight fluorescent lamps are used, they should be placed at a distance of not less than 1.5 m to the patient (the distance between filament lamps and the examined person should be at least 0.5 m). A processor and a monitor should be placed as far away as possible from the measurement location (at least 50 cm). Doctor's workplace must be so equipped that he can work in a comfortable, stress-free working posture. A doctor should operate with active electrode, operator control and computer equipment easily. The comfortable environment and

physical rest conditions for the examined person should be provided. It is advisable to ensure that no one enters the working room during the examination.

Requirements regarding a doctor:

During examination a doctor should wear the clothes made of natural fabric to avoid effects of static electricity. Doctor's hand carrying out measurements and procedures, should be in a stable position, without tension. Before measurement, a doctor should not press on a BAP (practice shows that search of a BAP for measuring should be done only according to corresponding anatomical landmarks). During measurements a doctor should not touch a patient's skin with the hand.

Requirements regarding a patient:

A patient should take off shoes, socks (as well as stockings or pantyhose), and any bijouterie or jewellery made of any metal before the examination. All personal communication tools generating electromagnetic fields must be also removed. Skin areas on which electrodes are placed must be clean, without skin damage, scars, papillomas and other skin lesions or birthmarks.

Examination should not be performed earlier than 1.5-2 hours after physical activity, meal or physiotherapeutic sessions.It must not be conducted earlier than 3 days after investigations related with powerful radiation (radiological methods, radioisotope diagnostics, nuclear magnetic resonance, etc.). An exception are cases when examination is carried out for the analysis of changes developing in the body under the influence of radiation.

If possible, one day prior to electropuncture diagnostics it is necessary to stop intake of medicines. The decision to stop the medicines intake before examination is taken by a doctor trained in electropuncture diagnostics.

Directly before the examination, a patient should have a rest for 10-15 minutes.

Preparation for the measurements:

Just before the start of measurements, put a cotton ball wetted in isotonic sodium chloride solution into the ebonite (metal) cup of active electrode. The cotton ball should be moistened well, but not too much.

Measurement procedure:

A patient is positioned on the couch or in the armchair in a comfortable relaxed posture. Before measurements it is necessary to explain to the patient the purpose of examination. Diagnostics is carried out by measurement of electric conductivity in representative BAPs.

Following the sequence of measurements, put the active electrode to testing points sequentially. Measurements are carried out in the following order: H1-H6 on the right hand, H1-H6 on the left hand, F1-F6 on the right foot, F1-F6 on the left foot. During examination, a patient holds the indifferent (passive) electrode in his hand (on the side that is opposite to the side of measurements). I. e. in the measurements on the left side, a patient holds the electrode in his right hand; in the measurement on the right side he holds it in his left hand). A patient should hold a passive electrode tight, but not clench it too hard. During measurements, a doctor should not touch a cup of active electrode or a patient's skin with the hand. During the measurement, the active electrode should touch a surface of patient's skin in the area of a representative point at a right angle with constant pressure. Recording of the device readings should be started at the 3rd second from the beginning of electric conductivity measurement on each of 24 measuring points. The obtained results are recorded in a special R-chart.

Method of repeated electropuncture measurements:

According to Nakatani, R-line has a state of "excess of energy" or hyperfunction, if the value of electrical conductivity in corresponding representative point is above an upper limit of the normal range. Similarly, the R-line has a state of "deficiency of energy" or hypofunction, if the corresponding value of electrical conductivity on the representative point is below a lower limit of the normal range. According to Nakatani, R-lines with electrical conductivity values in representative points within the normal range are considered as "normal". A conclusion about a functional state of R-lines is drawn on the basis of results of only one examination.

Long-term investigations have shown that many factors very often influence on the results of one examination. These factors are not related with the stable deviations of R-lines and can include the following:

– psychoemotional state of a patient at the time of examination;

– interrupted eating patterns and sleep problems the day before examination;

– excessive physical activity before examination;

– intake of medicines, etc.

Therefore, an interpretation of a functional state of acupunctural R-lines according to the results of one examination has preliminary, stochastic nature. To improve the reliability of diagnostics and eliminate the errors caused by circumstantial factors, it is advised carrying out the repeated electropuncture measurements: over 3 days in a row, once a day, preferably at the same time. Based on the results of each examination, the R-lines that are not within the normal range are detected. Then on the majority principle (two out of three), the steady deflected (SD) R-lines are detected, i. e. the R-lines that are not within the normal range according to results of two and more examinations. The SD R-lines are used for further determination of electropuncture profile for the main and concomitant diseases, for making of individual treatment regimen and for the treatment efficiency control.

Interpretation of electropuncture diagnostics results:

According to Nakatani, the R-line state that are not within the normal range should be confirmed by symptoms identified during patient interview and physical examination. If the symptoms consistent with the R-line state are absent, it is possible to suppose a latent stage of disease or preexisting disease. Offered by Nakatani a list of symptoms is limited and not differentiated; making it difficult to interpret the diagnostics results.

According to classical view of the acupuncture, R-line is a multifunctional system. Consequently, the R-line state (hypo- or hyperfunction) depends on a number of factors, that should be considered and differentiated. The main factors influencing on the state of R-line include:

1. The R-line state depends on a functional state of relative internal organ or body system.

The hyperfunction of R-line can indicate the following:

– acute inflammatory processes of the corresponding internal organ;

– severe exacerbation of chronic inflammatory process of the corresponding internal organ;

– functional disorders (excess type) of the corresponding internal organ or body system (e. g., hyperfunction of stomach R-line can point to hyperacidity);

– malignant tumor at an early stage (e. g., stable pronounced hyperfunction of the stomach R-line together with stable low average level of electrical conductivity may indicate the development of malignant process in the stomach area).

The hypofunction of R-line can indicate the following:

– chronic inflammatory process of the corresponding internal organ (a subacute stage);

– functional disorders (insufficiency type) of the corresponding internal organ or body system (e. g., hypofunction of the gallbladder R-line can indicate a hypotonic biliary dyskinesia);

– benign tumors (e. g., hypofunction of the lung R-line may indicate vocal cord papillomas).

2. The R-line state depends on a functional state of a certain tissue type. For example, hyperfunction of the liver R-line can indicate the hypertonicity of muscular tissue, and hypofunction of the liver R-line can point to a muscular hypotonia.

3. The R-line state may change if abnormal focus is located on the external course of R-line, or in case of pain syndrome with pain irradiation along the external course of R-line. For

example, in dorsopathy of the cervical and thoracic spine with plexitis signs, a hyperfunction of small intestine R-line and three heaters will be observed.

4. The R-line state corresponds to a functional state of a corresponding organ of senses. For example, diseases of visual organ are developed due to corresponding changes of the liver R-line.

5. The R-line state depends on a psychoemotional state of a patient. For example, simultaneous hypofunction of the liver, heart and stomach R-lines can indicate a depressed state of a patient.

To identify pathology through electropuncture diagnostics, the following parameters are used:

 combinations of R-lines that are stable deviated from the normal range (on the R-chart), or R-lines deviated from the normal range at the 4th examination during "energofunctional test";

 an average level of electrical conductivity considered as normal with values of 40–80 uA, low with values of less than 40 uA and high with values of more than 80 uA. If an average value is above 80 uA, a state of energy processes of regulation of compensatory-adaptive body mechanisms is considered as hyperergic. If an average value is lower than 25 uA, it is a hypoergic state or an energetic asthenia of the immunodefences.

 a significant asymmetry in electrical conductivity values on the left and right sides of the same R-line, indicating the vertobrogenic disorders.

 electroconductivity ratio obtained in measurements on BAPs of the left and right (L/R) sides of a body. The normal range is 0.97–1.03. If L/R ratio is more than 1.1 or less than 0.9, it is possible to assume metabolism disorders and other systemic disturbance specific to gross changes of connective tissue, intervertebral cartilages, joint capsule, etc., i. e. involvement of musculoskeletal and locomotor system. Most often this index is analyzed together with the other parameters. The deviation of L/R ratio more than 1.03 means that intracellular content has alkaline reaction, and a patient is prone to oncology diseases. It has been found that the most types of cancer are caused by microbes, which size is less than a cell size. The microbes is introduced into the cell and start to replicate inside actively. It is very difficult to kill them because they are protected by the cell defense system, therefore treatment destroys both cancer and body cells. The deviation of L/R ratio less than 0.97 indicates that intracellular content has acid reaction, and foreign microorganisms cannot survive inside cells. However, this condition is harmful for a cell too.

 electroconductivity ratio obtained in measurements on BAPs of Yin and Yang R-lines. In practically healthy persons is 0.815–1.15. Yin organs prevalence over Yang organs, i. e. when Yin/Yang ratio is more than 1.15–1.2, indicates an inactivity of metabolic processes (slowing down, intensity reduction of energy metabolism). This condition is typical for low-intensity chronic processes, hypodynamia, intoxication. Prevalence of "Yang" over "Yin", i. e. Yin/Yang

ratio is less than 0.8, indicates the accelerated energy metabolism. Inactivity of energy metabolic processes indicates the body state, when more energy is produced than spent. On the contrary, the increased energy metabolism indicates that more energy is spent than produced by a body.

 electroconductivity ratio obtained in measurements on BAPs of upper and lower extremities, i. e. hands and feet (H/F). In practically healthy persons the H/F ratio is within 0.815–1.15. In psychoemotional stress or increased mental activity, the H/F ratio is above 1.2, and at psychasthenic condition it is lower than 0.8. A normal H/F ratio in males is 0.9–1.15 and in females is 0.8–1.0.

Electropunctural profile of a disease is a specific combination of SD (stable deviated) R-lines at a certain value of average level of electroconductivity, corresponding to the clinical picture of certain pathology. Electropunctural disease profile consists of principal and additional meridians (R-lines). Principal meridians characterize the pathogenesis of a disease. Dysfunction of R-lines is related with symptomatic manifestations of that disease.

In traditional medicine the assessment of parameters of electropunctural measurements on representative BAPs is of unique significance for identification of medical conditions and making a treatment regimen. However, electroconductivity changes on BAP are nosological non-specific, i. e. different diseases can cause similar changes of electropunctural parameters. So this method cannot solve yet the complex clinical questions independently. Consequently, at the current time the electropuncture diagnostics can be used in medical practice by trained professionals as a provisional diagnostic technique and a monitoring method.

To conduct the examination optimally, the active participation of a patient is needed. Therefore, one of possible approaches is to explain to a patient the essence of this method and inform him or her about possible health disorders, additional diagnostic testing, the course of treatment and expected results.

It is important not to give a patient a final diagnosis after procedure of electropuncture diagnostics. The diagnosis must be checked and reliably confirmed. Revealed electroconductivity changes on representative BAPs do not precisely indicate the medical condition. Until some time, it is only the unfavorable background, and against it the disease may or may not develop. At the stage of electropunctural evaluation of organs and body systems, it is preferable to use such operational terms of diagnosis as “provisional”, “probable” and “possible”. It is important to choose words carefully to avoid iatrogeny.

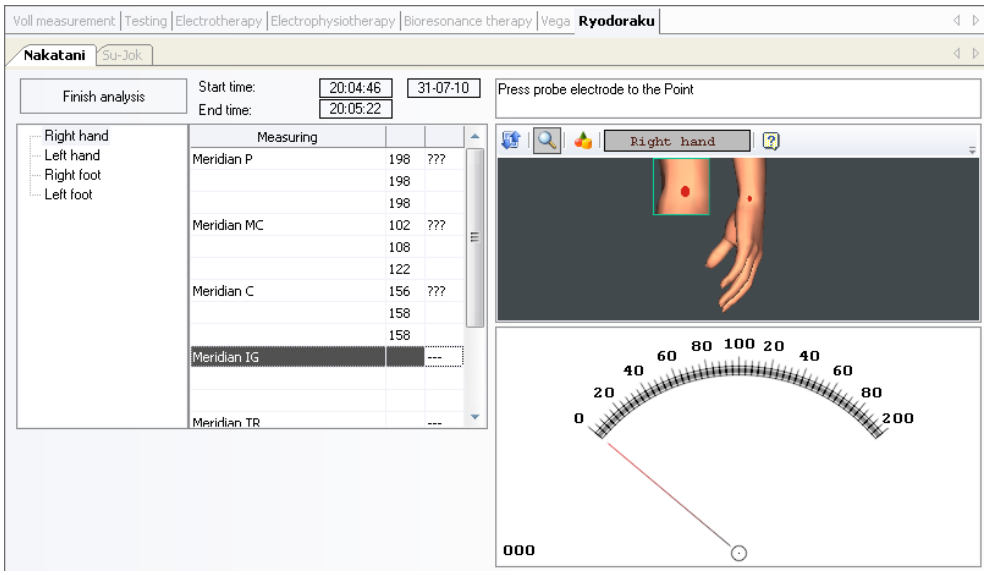
Electropuncture diagnostics is used for: an integral estimation of a functional state of acupuncture meridians, organs and body systems; dynamic observation of the health state; determination of electropuncture profile for the main and concomitant diseases, for making of individual reflex therapy regimen and treatment efficiency control.

CONTRAINDICATIONS:

An implanted artificial heart pacemaker, acute psychic excitement, drug and alcohol intoxication, pregnancy. An idiosyncrasy to electric current can be considered as a relative contraindication.

Examination procedure

This window is for the Ryodoraku test on all meridian points. To start analysis, click the ***Begin analysis*** button. The device switches to the diagnostic mode. Perform measurements, following the instructions and images on the screen. To finish analysis, click the ***Finish analysis*** button. To clear analysis results, click the ***Clear*** button. In the right window the image will be displayed. It will show the BAP you need at the moment and a point-type indicator displaying the current measuring value.



Measurement order:

- Connect the red plug of device wire to the ebonite electrode probe having special hollow attachment for Ryodoraku diagnostics. Connect the black plug of device wire to the cylindrical electrode.
- Roll a piece of cotton wool into a ball, moisten it slightly with normal saline, and put the ball into the cavity of the electrode probe attachment.
- Click the ***Begin analysis*** button.
- The program will start to analyze points automatically one by one; the tip of the electrode-probe should be pressed slightly to the BAP shown in the image. Duration of pressing should not be longer than two seconds.
- After the BAP measurement the program finishes the analysis automatically and its results will be displayed in the corresponding windows.

Saving the diagnostics results:

If the patient has been registered, the program will offer to save the results of diagnostics upon completion of examination.

SU-JOK METHOD

Su Jok is a part of Onnuri medicine developed by South Korean professor Park Jae Woo.

Su Jok method is based on the affinity system: our hands and feet represent our entire body in miniature. The human body has 5 conditionally separate parts: head, two arms and two legs. A hand has 5 fingers, a foot has 5 toes that correspond to 5 body parts. We can visualize this similarity, if we look at our own hand. A thumb (that is put aside as far as possible) is a head. A little and index fingers are arms. A long and ring fingers are legs. A ball of the thumb is the chest, and the rest of that eminence is the abdominal region. A back of a hand is the back. A longitudinal line conditionally separating a hand into two halves is the spinal column.

Special importance in Su Jok method is given to the thumb. Its palmar surface is the "face" and dorsum of the thumb is the"back of the head". As for foot, its matching system is based on the same principle.

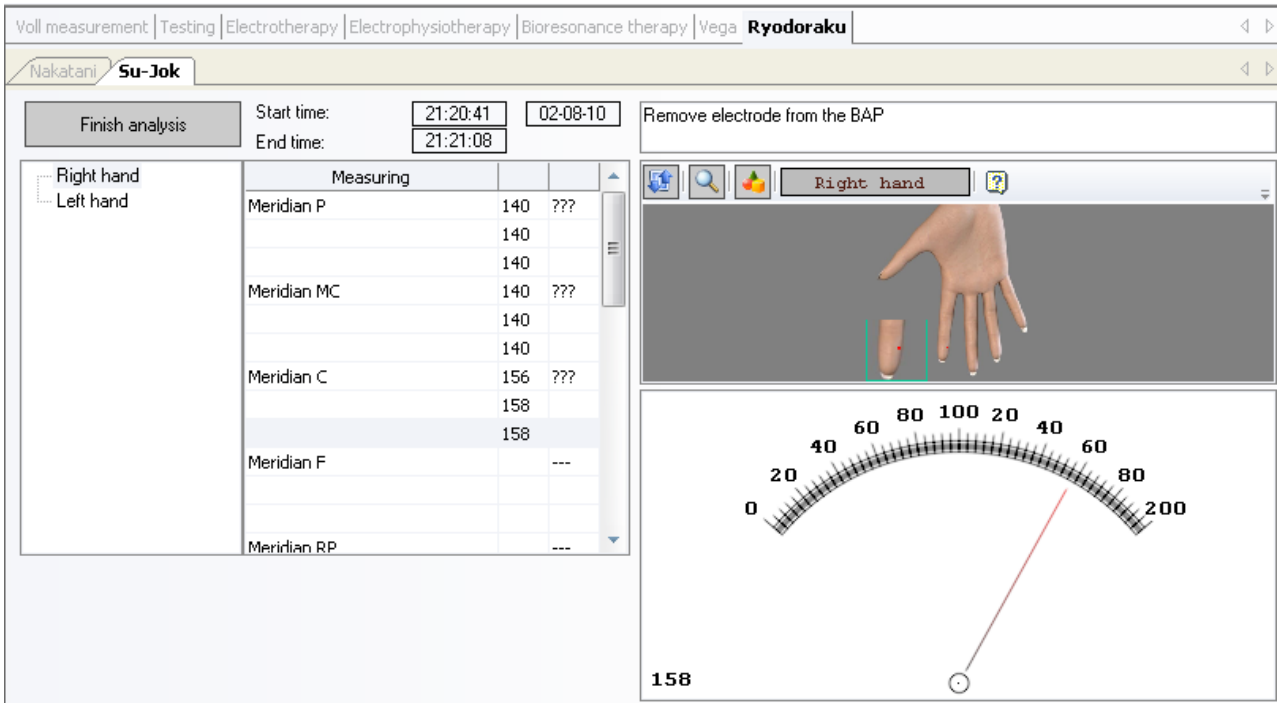
Hands and feet are the only parts of the human body which are characterized by such a structural similarity. They are, in opinion of the author of the Su Jok system himself, the "remote controls". The same way we use a remote control to operate a television, we can use our hands and feet to influence our whole body and cure disease. These healing systems function as a kind of small clinics that naturally cure body illnesses. The biologically active points corresponding to all body organs and regions are located on hands and feet in strict order.

In case of any disease, the "signal" wave from the affected organ or area is sent to the corresponding point and leads to its excitation state. As a result, the sharp pain of the point emerges. Stimulation of that point leads to answering healing wave that normalizes the affected organ activity. Visually we cannot see that point on the skin surface, but when we press it down, the dimple or swelling can be found (as well as a painful spot). And if we are to succeed and found such a point, it can be considered as the midpoint in recovery.

The diagnostics results are "guide to action" for a Su Jok therapist. These results let to know what canals and points on them need the influence, and which method should be chosen. The method is completely safe for a patient. It is non-invasive, does not require any prior preparation, and most importantly, makes it possible to implement the principle of individual selection of effective treatment method for every patient.

Su Jok is a diagnostic and treatment method which may apply not only doctors but any person, even who is far from the medical field. In other words, it can be mastered by any person to stay healthy or relieve painful conditions in chronic and acute diseases.

Examination



This window is for Su Jok analysis on all meridian points. You can start the examination by clicking the ***Begin analysis*** button. The device will switch to diagnostic mode. You can perform measurements you need, following the instructions and images on the screen. You can end the analysis by clicking the ***Finish analysis*** button. You can clear the analysis results by clicking the ***Clear*** button. In the right window the image will display with the BAP that you need at the moment, as well as a pointer-type indicator, displaying a current measuring value (the indicator shows the current intensity in the BAP).

Testing order:

- Connect the red plug of device wire to the ebonite electrode probe with a special ball-head for Su-Jok diagnostics. Connect the black plug of device wire to the cylindrical electrode.
- Click the ***Begin analysis*** button.
- The program will start to analyze points automatically one by one; the tip of the electrode-probe should be pressed to the BAP shown in the image. The pressing duration should not exceed 2 seconds.
- After the last BAP measurement the program ends analysis automatically and results are displayed in corresponding windows.

Saving diagnostics results

If the patient has been registered, the program will offer to save the results of diagnostics upon completion of examination.

AURAMETRY

Bioinformational adaptometry (aurametry) is a computer method of chakras and aura diagnostics, that makes it possible to detect processes invisible to the human eye. These processes at the energoinformational level have long-term influence on person's vital activities, health, relationship, career, business, etc.

Distinctive feature of the diagnostic method is the identification of the weakest link in the person's energoinformational field (aura) indicating the pathology focus.

With regard to health, the method allows identification of disorders long before the first clinical signs of a disease appear.

Aurametry diagnostics makes it possible to:

– detect dysfunctions or disorders in person's energy centers (chakras);

– define distortions and disruptions of energoinformational field (aura);

– define places of energy leakage;

– define energoinformational blocks;

– evaluate general energy state of a body;

– detect possible problem zones and confirm observed ones at the body physical level.

– monitor changes in the person's energoinformational field during treatment or spiritual practices, as well as watch progress of influence of spiritual healers, etc.

Topography of the main chakras:

Muladhara is located above anus, behind the genitals. In male it is located in the base of the spine, in female it is between ovaries. Topographically, it is the first point of a posteromedian meridian. On the palm its location is 1 cun more proximal to the projection point of the second chakra, at the end of a "life line". It is absent on the back of the hand.

Svadhistana on the back is located between the 4th and 5th lumbar vertebra, and on the abdomen is 4–6 cm below umbilicus (4 cun). Topographically, it is the fourth point of anterormedian meridian (an alarm point of small intestine, Lower Dan Tian). On the palm it is located 1 cun more proximal to the point of intersection of two lines: median line of the third finger and perpendicular from the tip of a proximally abducted thumb. On the back of the hand it is located opposite the palm point.

Manipura is located on the back between 2nd and 3rd lumbar vertebra, and on the abdomen it is 5–7 cm above the umbilicus. Topographically, it can be on the 10th point of spleen and pancreas energy (anterormedian meridian), or on the 12th alarm point of stomach, or on the 13th point of stomach and small intestine energy (the same meridian). On the palm it is located in the middle of a metacarpal bone of the third finger (the same location on the back of the hand).

Anahata is located on the back between the 4th and 5th thoracic vertebra, on the chest it is in its center. Topographically, it is 17th point of anterormedian meridian (Median Dan Tian), BAP of all associated EAV-vessels. On the palm it is located above metacarpophalangeal joint of the third finger (the same location on the back of the hand).

Vishudha is located on the back between the 6th and 7th cervical vertebra; on the front of the body it is at the base of a throat, in a sternal notch. Topographically, it is between the 22nd and 23rd points of anterormedian meridian (a point of thymus measurement and a point of concentration of kidneys energy). On the palm it is located in the middle of proximal phalanx of the third finger (the same location on the back of the hand).

Adzhna is located on the back of the neck (between the 2nd and 3rd cervical vertebra), on the forehead it is located between eyebrows. Topographically, it is the 23rd point of a posterormedian meridian, in EAV (Voll electroacupuncture) it is a point of degenerative and psychosomatic disorders (Upper Dan Tian). On the palm it is located in the middle of an median phalanx of the third finger (the same location on the back of the hand).

Sahasrara is located in the upper part of the skull, 1 cm anterior to the top of the head. Topographically, it is the 20th point of a posterormedian meridian (the highest point of the roof of scull), a point of Yang energy concentration of associated EAV-meridians. On the palm it is located in the middle of the distal phalanx of the third finger; it is absent on the back of the hand.

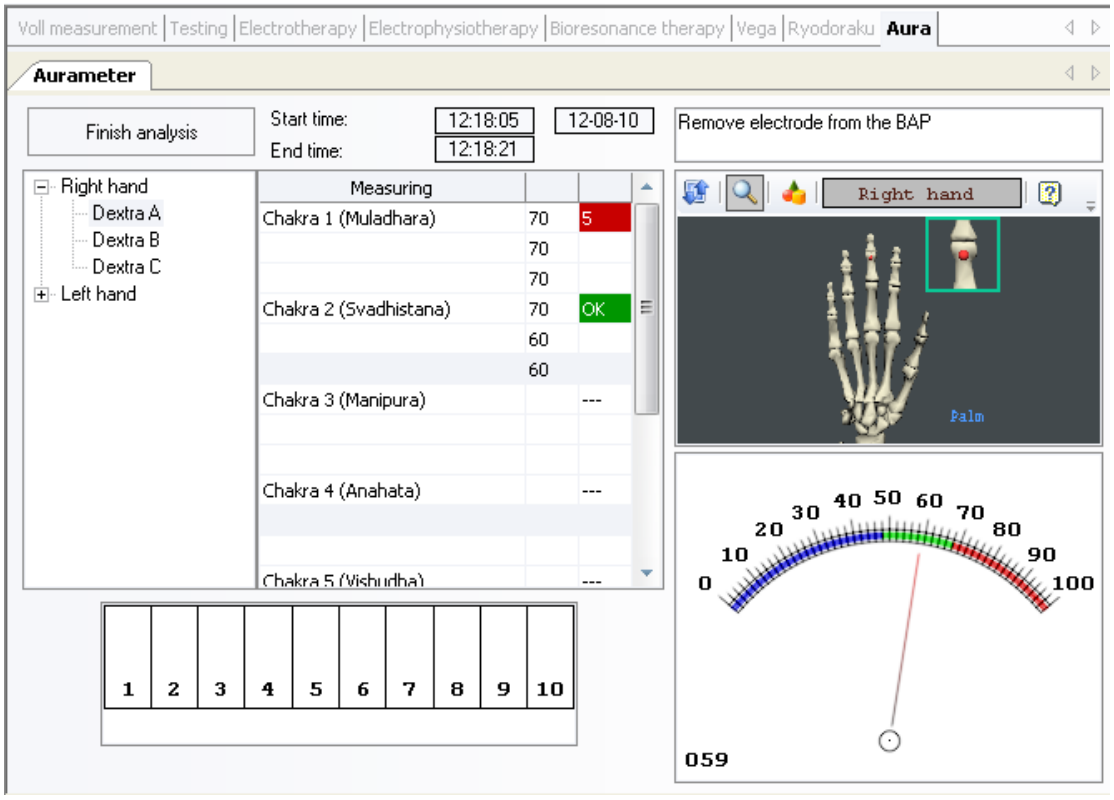
For today, the most widespread method of evaluation of chakra condition is Voll electroacupuncture diagnostics (EAV). Also biotensometry, biofunctional diagnostics (BFD), kinesiology tests, or vegetative-resonant test (VEGA test) can be successfully used. The issue is in interpretation of results and the exhaustiveness of examination. And still, in our opinion, the EAV and VEGA test are the most preferred methods. The EAV enables to obtain a “static sample” of a chakra condition, and the VEGA test shows, so to speak, a three-dimensional, dynamic picture. Also, the VEGA test makes it possible to construct virtual models of response based on the principle “what will be, if …”

Most often chakras are quiet, "dormant", even there is a full-scale clinical picture of a disease, so simple measurement of projective chakra points does nothing. There can be several reasons: intake of potent drugs (hormones, tranquilizers, stimulants, sleeping pills), intense psychoemotional or emotional-painful stress, severe oncology diseases, pregnancy, toxic conditions, distrust a doctor, etc. In such cases “medicine testing” can be applied, using either correctors of chakras condition, or inversion of medicines, or inversion of energoinformational patient’s condition.

It is also possible to select homoeopathic remedies, testing them on “weak” chakras, or using other ways of treatment. Besides you can carry out psychocorrection sessions, monitoring the results by “weak” chakras. Diagnostics by chakras is a creative process, and its opportunities are practically limited only by skills and knowledge of the practician.

Procedure of aurametry

This window is for measurements on chakra points of hands. To start analysis, click the ***Begin analysis*** button. The device switches to the diagnostic mode, so you can perform measurements, following the instructions and images on the screen. To finish analysis, click the ***Finish analysis*** button. To clear analysis results, click the ***Clear*** button. In the right window the image will be displayed. It will show the BAP that you need at the moment or quadrant leads, as well as a pointer-type indicator displaying the current measuring value. Upon completion of all measurements, the results can be seen in the **Aura** window.



BAP measurement order:

- Connect the red plug of device wire to the ebonite electrode probe. Connect the black plug of device wire to the cylindrical electrode.
- Click the ***Begin analysis*** button.
- Wet the tip of the electrode probe a bit.
- Press a tip of the electrode probe to the BAP.
- Perform the testing of the point shown in the image. The program will perform three measurements consecutively, do not take the electrode off the BAP during all of them. If the measurements have performed correctly, the point factor will be displayed in a histogram. Otherwise, the program will repeat the measurements for the BAP.

- When taking the electrode off the BAP, the program will go to the next point automatically.
- After measurements on the last BAP, the program will finish the analyze automatically. The results as a schematic representation of the energoinformational matrix (aura) will be shown in the **AURA** window.

Saving of diagnostics results:

If the patient has been registered, the program will offer to save the results of examination upon its completion.

AURICULAR DIAGNOSTICS

Auricular diagnostics and therapy are the components of clinical reflexotherapy. The auricular examination, i. e. detection of the points and areas with altered sensitivity, should be combined with carefully taken medical history and general clinical examination of a patient. The auricular examination is carried out as follows:

1) auricular examination is aimed at evaluation of the auricle relief and general comparison with the auricular cartography
2) auricular skin examination by means of a magnifying glass (in good light) in order to detect the skin changes (e. g. hyperemia, desquamation, swelling, etc.) indicating the chronic organ disease projected on the particular auricular area
3) searching for the points of altered sensitivity by means of the special diagnostic probe for evaluation of tactile and thermal sensitivity, and also for the estimation of difference of the skin electrical resistance in the point.

The detection of auricular acupuncture points should start with the detailed visual inspection of auricles and examination of their individual characteristics. The shape and size of an auricle are prone to age-related changes. In young people an auricle is elastic; this characteristic deteriorates with age. The difference between the right and left auricle is usually significant even in apparently healthy persons. In each particular case special attention should be paid to assessment of distinctness of the auricle shape, that is crucial for the accurate localization of the acupuncture points and areas. In some cases, thorough inspection may be important for the diagnosis and detection of the reactive zones.

When a disease occurs, some painful points appear on the external ear surface. Sometimes they are imperceptible, but “on the changes of projection areas it is possible to predict the imminent danger long before the clinical manifestation of the disease” (P. Nogier). In most cases the auricular cartography provides the doctor with information about the patient’s health status, acute and chronic diseases, traumas experienced based on changes of ear surface appearance or its relief.

In case of the right-side pain syndrome, it is advisable to examine the right ear, and vice versa. Therefore, it is obvious that there is larger area of a liver and lung projection on the right auricle than on the left one. The projections of a gall bladder and appendix are only on the right auricle, while a pancreas and spleen projections are only on the left one.

The correct determination of auricular points is important both for diagnosis and for the treatment, that is why the points’ search should be consecutive in order not to miss or confuse the necessary points.

The electrical devices used for searching for the active auricular points have been widespread. Their principle of action is based on the fact that the electrical resistance in the active point is usually higher than the electrical resistance of surrounding skin surface.

I. Bishko based his conclusions on the studies of the skin electrical conductivity in the point area. He states that if the auricular point has the low skin resistance (which means the energy decrease), in most cases this point should be stimulated. If the increased skin resistance is found (excess of energy), such point are to be sedated.

Indications for use:

The auricular diagnostics is indicated for screening of the functional state of organs and body systems for the purpose of further prescription of corresponding direct diagnostic examination. The method is used for making of individual regimen of reflex action on the auricular points, as well as for the assessment of the treatment progress.

Contraindications:

Auricular diagnosis is contraindicated in case of frostbite or inflammation of the auricle, in patients having an implanted pacemaker due to the possibility of its failure. The hypersensitivity to electric current and mechanic pressure can be considered as relative contraindications. The diagnostics accuracy can be significantly lower in patients with ear canal eczema or traumas of auricle, as well as in elderly patients. In psychiatric patients the diagnostics is limited to the measurement of skin electrical conductivity and analysis of morphological changes in acupuncture auricular points for development of individual regimen of reflex action on the auricular points, as well as for assessment of the treatment progress.

Workplace requirements:

Auricular diagnostics should be carried out in healthcare facilities, including the outpatient clinics, in general-purpose and specialized, municipal and rural health units. During public health screenings the diagnostics may be carried out in mobile health units. In those cases the doctor's workplace should be equipped with the constructions approved for use in medical practice. Besides, they can be easily constructed. The auricular diagnostics is allowed to be performed by medical professionals (general physicians, pediatricians) certified in reflexology (i. e. having the certificate or the substituting document), and who undergone an appropriate training in traditional diagnostics in a licensed educational institution.

The doctor's workplace should be equipped in such a way as to allow a doctor to work in a comfortable posture and operate with the tools easily. It is desirable to carry out the diagnostics in the room equipped with a desk, several chairs, an armchair and a computer. During examination a doctor should wear a white gown and clothes made of natural fabric. The hand touching the patient's ear should wear a glove made from cotton or latex to avoid possible influence on the measurement results. Doctor's hand carrying out testing should be in a stable position and without tension. The diagnostics is carried out in good light (it should not be too bright). It is desirable to use a magnifying glass during examination. For more thorough examination of auricles it is useful to change the illumination angle by turning the illumination tool.

The room temperature should be maintained within + 18–22 °Celsius. Before examination a patient should stay awake in a relaxed state for not less than 10–15 minutes. It is not advised an examination after meal, physical activity, psychoemotional stress and against a background of any physiological discomfort. The patient should be prepared for the examination: it is necessary to wear clothes made of natural fabric not causing the static electricity effects. Besides, a patient should take off the bijouterie or jewellery, glasses and watch prior to the examination. A patient should be also warned that it is necessary to put away and turn off all devices generating electromagnetic fields (e. g., a mobile phone).

Procedure of auricular diagnostics:

The whole diagnostics procedure consists of the following stages:

1. preparatory phase,
2. examination,
3. disease probability analysis (detection of the potential target organs),
4. drawing diagnostic conclusion including recommendations.

Preparatory operations include preparation of the patient for the examination, interview and filling in the corresponding medical forms by a physician.

Examination is carried out by means of medical inspection, measurement of skin electrical conductivity, pain sensitivity testing in signal acupuncture points, and palpation of auricles.

The examination is performed when a patient is in his seating or lying position. During auricular examination, a doctor should pay attention to the size of auricles, their symmetry, regularity of their shape, sharpness of antihelix and helix contours. Gross changes in the shape or size of auricles are usually seen in a number of congenital pathologies, such as oligophrenia, Down syndrome, and different congenital abnormalities. It is necessary to pay attention to the skin colour, vascular pattern intensity, presence of morphological elements, excavations, and other local skin changes. In some cases the auricular palpation is carried out after the skin electrical conductivity measurement for the purpose of cartilage induration detection and assessment of the morphologic elements' consistence.
The skin electrical conductivity measurement is carried out with use of the electrode for general purpose (passive) and active probe. The probe should be cleaned with 70 % alcohol solution before the examination. It is not recommended to fix the probe on one point for more than 15 sec, because in that case the blood circulation in the point is disturbed, which leads to the alteration of the parameters of no diagnostic value.
The skin conductance measurement and pain sensitivity testing in the acupuncture points is carried out with use of a probe which has a spherical tip of 2–2.5 mm in diameter. It is essential to place the probe axis perpendicular to the skin surface of auricle. It helps the probe not to slide out. The pressings with a probe should be even and equal, and usually their intensity does not exceed 100–150 g. It is not necessary to moisten the probe with water during measurements. Before starting the examination, a patient is asked to tell the doctor about the nature of sensations which he is going to experience during the auricular points

testing. The examination should be carried out slowly enough to allow the patient to sort out in his/her sensations and react to every pressing. Do not press repeatedly on the same point in a short period of time, because it becomes painful in connection with manipulations.

The results of the interview, examination, measurements, and testing are recorded to the diagnostic file in which it is possible to register the skin colour and morphological changes detected, pain gradation and the auricular points' electroabnormality degree. The obtained data may be used for the patient follow-up. Using of the computer applications considerably facilitates this work.

Particular features of the visual changes and their interpretation:

According to results of the clinical studies, in diseases of different internal organs the visual changes in certain areas of auricle are observed. It is necessary to differentiate between the pathological non-inflammatory changes in colour and the appearance of the inflammatory morphological elements. The skin discoloration includes redness, blanching, sallow tone, and different pigment spots. The pathological changes may be seen also as movable or fixed subcutaneous cartilage indurations, local swelling, dotted rash in the form of gooseflesh, or areas of thin parchment skin, spider veins, hyperkeratosis.

The morphological elements of the auricular skin should be classified into primary and secondary. The primary elements usually appear as the earliest skin reaction to the acute pathological process (stimulus). The secondary elements appear as a result of primary elements' evolution. There are five types of primary elements: macule, papule, nodule, vesicle, and pustule.

Macule is circumscribed alteration in skin color. Macules can be inflammatory, vascular, hemorrhagic, and pigment. The inflammatory macules occur as a result of vasodilation in superficial layer of dermis. They have pinkish-pink colour, sometimes with cyanotic tint, and they may disappear under pressure. These macules are regressed completely, or they may leave desquamation. The vascular macules develop as a result of a persistent vasodilation in the superficial skin layer. They may have congenital or acquired nature. The vascular macules differ from the inflammatory macule in their presence of sharp contours of dilated vessels in a form of red convoluted stripes. The hemorrhagic macules develop as a result of rupture of the skin blood vessels or their permeability increase. Subsequently, they gradually change their colour and may fully disappear at last. However, they do not disappear under pressure, which is their main difference from the inflammatory macules.

Papule, or *papula,* is a solid lesion elevated above the skin surface. The colour of papules can be pinkish and brownish, and the size of a pinhead. By shape, papules can be hemispheric or flat. Papules tend to leave desquamation after resolving, without cicatrisation.

Nodule (tubercle) is a non-cavitary (solid) lesion elevated above the skin surface. The nodule has yellowish- or brownish-red colour; its size is no more than the size of the lentil, its shape is hemispheric. In the course of the further development the central part of the nodule is necrotized with the subsequent ulceration and scar formation. The main difference between the

nodule and papule consists in greater deepness of its location in the skin, and also in the evolution pattern.

Vesicle (vesicula) is a cavitary lesion. It contains the serous content, which is always of an acute inflammatory character. The vesicle size may be compared with the hempseed; its shape is hemispheric. During their further development, the vesicles shrink becoming covered with a scale, or open with the erosion formation, without cicatrisation.

Pustule is the cavitary lesion elevated above the skin surface. It contains a purulent exudate which is usually of an acute inflammatory character. Pustule can be hemispheric or flat, the size of a pinhead. Pustule shrinks and a crustlike surface appears, or it opens without cicatrisation.

The secondary morphological elements include scales, crusts, erosions, ulcers, scars, and secondary pigment spots.

Scales (squamae) are rejected cells of the stratum corneum. They occur at the sites of resolved macules, papules, sometimes nodules and other primary elements.

Crust (crusta) is formed by drying out the exudate at the site of vesicles, pustules, ulcers, or erosions.

Erosion (erosio) is a skin defect within the epidermis after the opening of the vesicle or pustule.

Ulcer (ulcus) is the deep dermal defect which develops after the necrosis of a nodule.

Scar (cicatricle) forms after the healing of a nodule.

Secondary pigment spots occur at the sites of resolved inflammatory macules, papules, pustules as a result of the increase or decrease in the content of pigment at sites of former primary elements.

During the examination the following features are noted: the colour of auricular skin, its turgor, elasticity, hidropoiesis and sebum secretion. The general examination is followed by the analysis of morphological elements. The doctor will note their localization and nature (inflammatory or not). In case of inflammatory signs, it is necessary to determine if they have acute of chronic character. The acute inflammation of the auricular skin is characterized by bright redness, swelling, and tenderness. The doctor identifies the primary and secondary morphological elements, determines their differential characteristics, size, colour, contours (regular or irregular), shape (hemispheric or flat), surface (flaky or smooth), consistence (soft, dense, or hard).

Thus, for example, some hormonal or metabolic disorders are frequently accompanied by desquamation and/or hypersecretion areas. The areas of hyperkeratosis may indicate the endocrine dysfunction of the organ or system of organs. The presence of vesicles and nodules at a different stage of development can indicate an organic disease. Shiny or dull connective tissue

cicatricles of white colour indicate the chronic processes and previous diseases. The subcutaneous prominent hardened spots with sharp contours, which change their shape under pressure, or brownish-grey lumps with indistinct boundaries which do not change their shape under pressure may indicate the presence of benign or malignant tumours of the organs corresponding to the auricular areas.

The analysis of the visible signs provides the indicative data regarding the stage and phase of pathological processes. It is considered that the progress and chronization of diseases become apparent in the auricular points first as functional changes and then as morphological ones. The onset of the disease may show itself first as redness (hyperaemia), and then as pallor (vascular spasm) of the corresponding auricular areas. An acute disease or exacerbation of the chronic process is accompanied by the development of such morphological elements as vesicles, papules and pustules. In case of the chronic diseases, there are secondary pigment spots, desquamation, or cicatricle at the site of former ulcer.

Acute process: redness (local hyperemia, inflammatory spots), papule, nodule, vesicle, pustule, erosions, ulcers;

Chronic process: pallor, mottled skin with sharp contours (local ischemia), areas of hypersecretion, apparent spider veins, excavations that look like needle indentation marks, elevations, scales, crusts, scars, secondary pigment spots.

Examples of the auricular changes in accordance to different types of splanchnopathy

Diseases	Point areas	Signs
Bronchitis	between the upper and lower points corresponding to lungs	whitish dotted lumps
Gastritis	of the stomach	whitish uneven area, poorly defined boundaries, sometimes sensation of thickened skin
Gastric ulcer	of the stomach	development of the circle formed by the dotted bulging, and poorly defined boundaries
Ulcer disease	of the stomach	small rounded nodule
Ulcer disease (after resection)	of the stomach	small crescent-shaped white or reddish scar
Duodenal ulcer	of the duodenum	sometimes the center becomes whitish or light-grey; there is a hyperemia of the margins with the glossy surface
Acute appendicitis	of the appendix	dotted congestive phenomena or 1–3 papules
Chronic appendicitis	of the appendix	dotted areas that look like needle

		indentation marks, whitish, but starting to elevate above the skin surface as they turn light-grey
Menorrhagia	uterus	dotted and bulging areas of congestion that look like a gooseflesh, or several red papules
Leucorrhea	uterus	dotted bulging areas
Hypomenorrhea	uterus	whitish dotted bulging areas without gloss
Vertigo	subcortex, forehead	whitish and dotted areas with reddish crown and glossy surface
Hypertension	heart, adrenal glands	dotted bulging hyperemic areas without gloss; moreover, dotted congestive areas or capillary thickening
Pain in benign tumors	body region	subcutaneous bulges (prominences) changing their shape under pressure, with sharp contours
Pain in malignant tumors	body region	brownish-grey bulges not changing their shape under pressure, with poorly defined boundaries
Genital diseases, colitis, nephritis, cystitis	corresponding area	rash in acute disease, inflammation, dotted, lamellar, glossy coronae; in chronic disease the dull whitish dots are sunken
Pulmonary edema	of the lungs	whitish and scabrous lump or areas of dots aggregation
Hepatomegalia	of the liver	whitish and scabrous bulging (it is shaped like a half of a melon seed); right hepatic lobe corresponds to the right auricle, left hepatic lobe corresponds to the left auricle

There are the following symbols for visual changes (**VC**) of auricular points in the program:

\# — there are chronic changes

\## — there are acute changes

\### — there are acute and chronic changes

Pain sensitivity testing and interpretation algorithm:

For the pain sensitivity testing the same probe can be used as for the electrical conductivity measurement. However, in that case it is preferable to use the special probe with the pressure sensor. It allows the doctor to test the pain sensitivity much more accurately and register not only the subjective parameters but the pressure intensity causing tenderness in a patient. The patient informs the doctor if tenderness appears. Moreover, the doctor is able to watch and estimate the patient's reactions by himself. It can be wrinkling, closing one or both eyes, wincing or moaning.

Three gradations are conditionally distinguished in the tenderness testing:

1 — no tenderness under pressure (it is a normal response).

2 — low tenderness point. This includes cases which are characterized by the slight sensation of tensive, compressing or bursting pain under pressure of the probe upon the point. Besides, it includes cases when the tactile sensitivity in the point examined differs significantly from surrounding points;

3 — painful point. In that case the pressure of the probe upon the point causes significant pain in a patient, usually followed by a grimace (facial dolorosa) on the patient's face; or not so intensive but sharp stabbing pain occurs.

There are the following symbols for the pain sensitivity in auricular points (**PS**) in the program:

* — low tender point

** — high tender point

The interpretation algorithm for electrical resistance parameters:

To exclude the influence of age-related and individual patient's features, the method of determination of individual normal range is applied in the program. It is estimated upon the readings of the auricular ZERO point. Even the ancient Chinese sources stated that this point was a kind of "generally stimulating" point in relation to other auricular points. It means, if auriculotherapy does not lead to any effect, the needle should be inserted into that area. Similar data were obtained by P. Nogier (he considered this point as the auricular "physiological center") and by his followers, that was reflected in the name of the AP 83 'ZERO'. According to the clinical findings, the electrical resistance value at the AP 83 'ZERO' point almost always represents a kind of basic level, or "reference point" for the "reflection areas" conductivity in a certain patient. Healthy people showed no difference in the electrical conductivity values, or it was minimal (1–2 μA). Such approach, as has been shown in practice, makes it possible to personalize the electrical resistance parameters in each case. For normal values in different

auricular points in comparison with ZERO point value, the conductance of 2 μA difference is taken. That is why the electrical resistance measurement in this particular point must be performed very thoroughly. Accuracy of the total auriculogram depends on it.

Deviation from the normal value of 2–4 μA corresponds to “low probability of the disease”

Deviation from the normal value of 4–6 μA corresponds to “significant probability of the disease”

Deviation from the normal value of 6–8 μA corresponds to “high probability of the disease”

It should be noted that not all changes found during the auricle examination have the same diagnostic value. The whole set of changes detected during diagnostic process is the total auricular point abnormality. It is expressed in the abnormality score; and the contribution of each diagnostic factor differs between the points. So the program uses the special algorithm for the point abnormality calculation, which takes visual changes, pain sensitivity, and point electrical resistance into account. Besides, weight coefficients of each change listed for each particular point are considered. That is, the same electrical resistance value of two different points will not obligatory mean the same aberration of these points. There is an accounting table for different diagnostic factors for different auricular points; values are expressed in percent (see below):

Signal points	**EA**	**PS**	**VC**
6,8,9,10,21,44,45,51,55,56,58,59,60,87,100,101,102,103	40	30	30
19,22,23,13,15,16,24,31,84,85	40	50	10
34,79,82,91,92,93,94,95,96,97,98	30	40	30
33	30	50	20
64,66,67,88,89	30	30	40
37,39,40,54	10	40	50
71	40	40	20
46,47,52,57	10	40	50

Drawing Conclusions Guide

After the examination and analysis, a doctor should make a conclusion that compactly reflects the abnormalities detected, including the diagnostic summary and recommendations.

The conclusion consists of three parts:

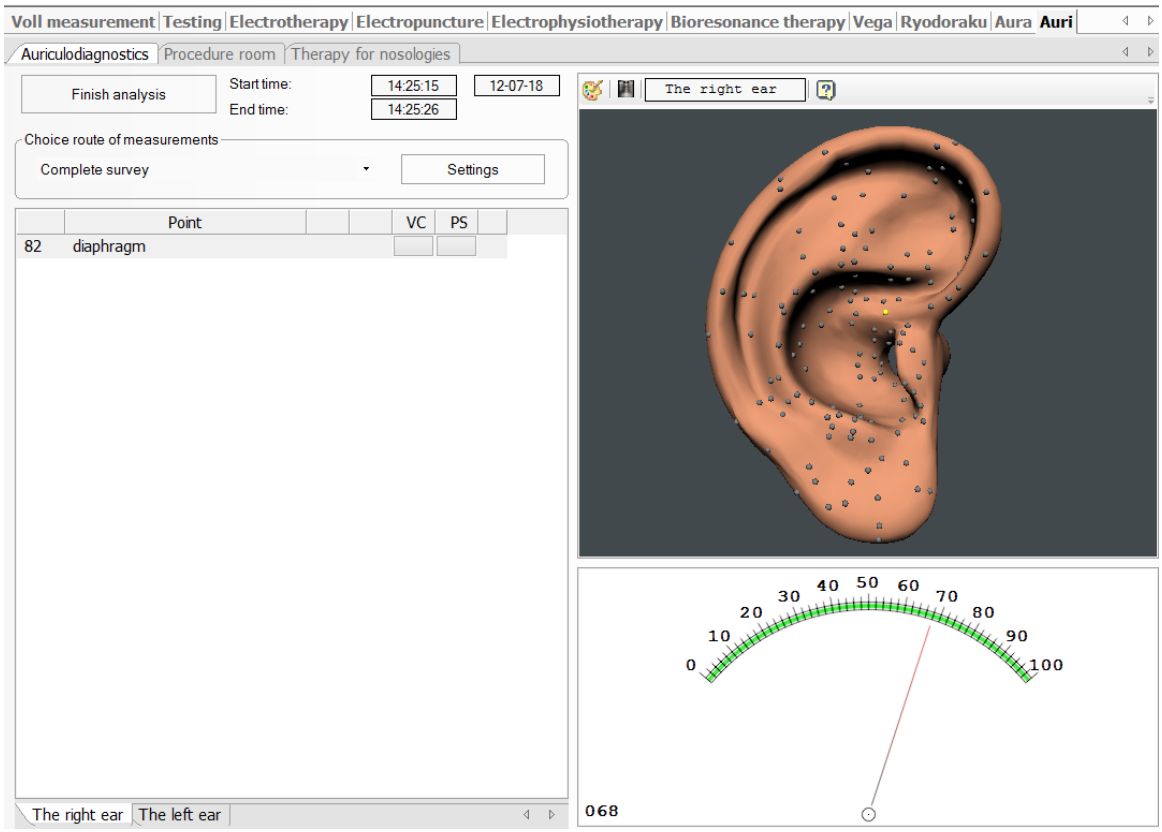
1. General information about the patient and the examination.
2. Summary of the main phenomena detected in the signal auricular points.
3. Clinical interpretation of the changes found during the examination; recommendations. It is crucial that this part contains medical terms and notions understandable to a doctor who has not received special training.

Each auricular examination conclusion must be typed (written) and signed by the doctor who carried out the examination.

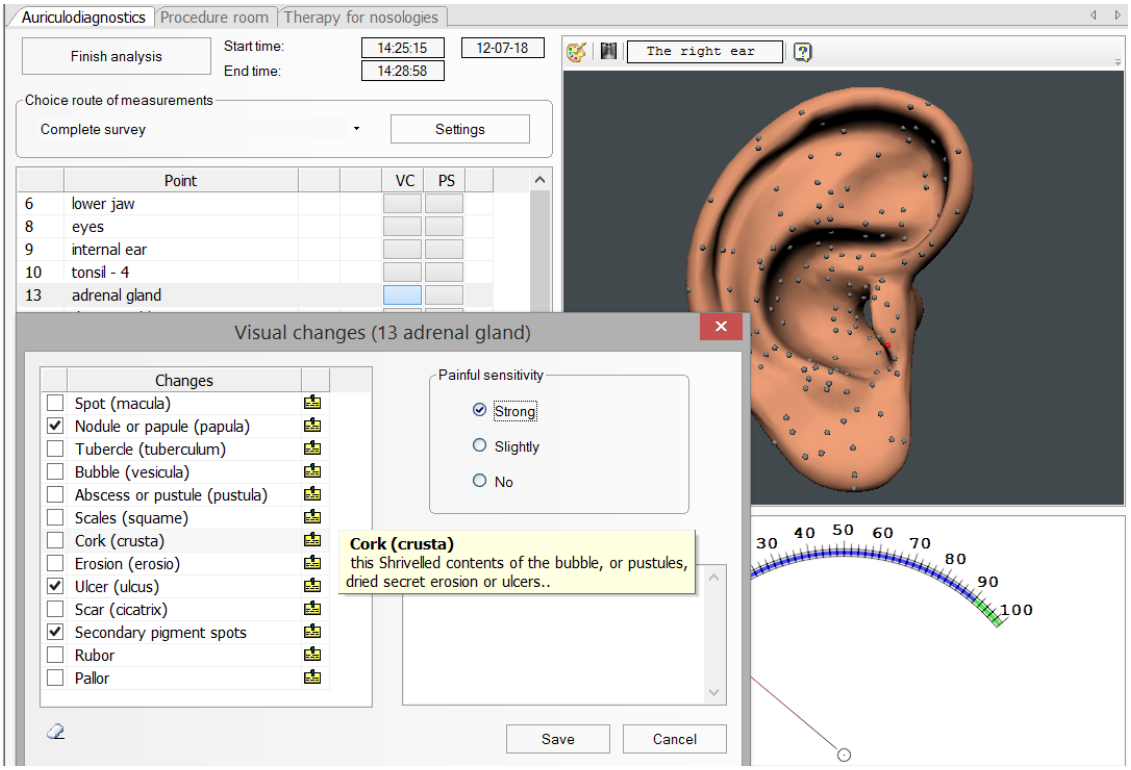
Auriculodiagnostics

This window is for the auriculodiagnostics by chosen points on an auricle. To perform auriculodiagnostics, the tip with a ball should be put on the electrode probe. You can start the examination by clicking the ***Begin analysis*** button.

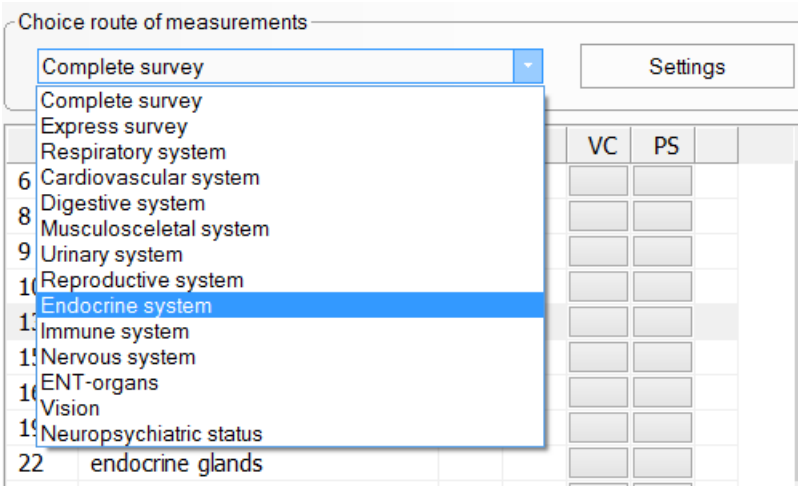
The device will switch to the mode of voltage selection for diagnostics (determination of individual normal range). It is identified by parameters of auricular point ZERO. One measurement is performed.



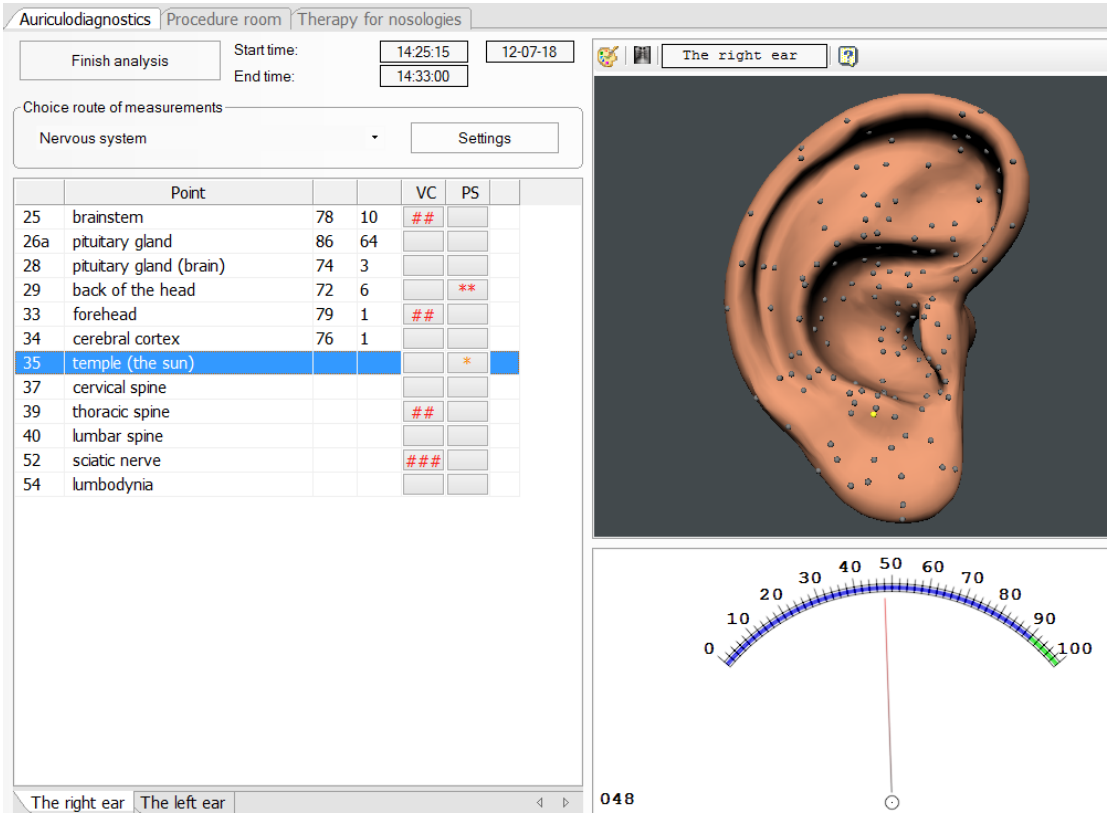
Then the program switches to the measuring mode. Before measurements, it is advisable to carry out the visual inspection and palpatory evaluation of an external ear with adding the findings to the program database.



Besides, the examination route should be selected. By default a full examination is performed.



Then you should perform necessary measurements, following the instructions and images on the screen.



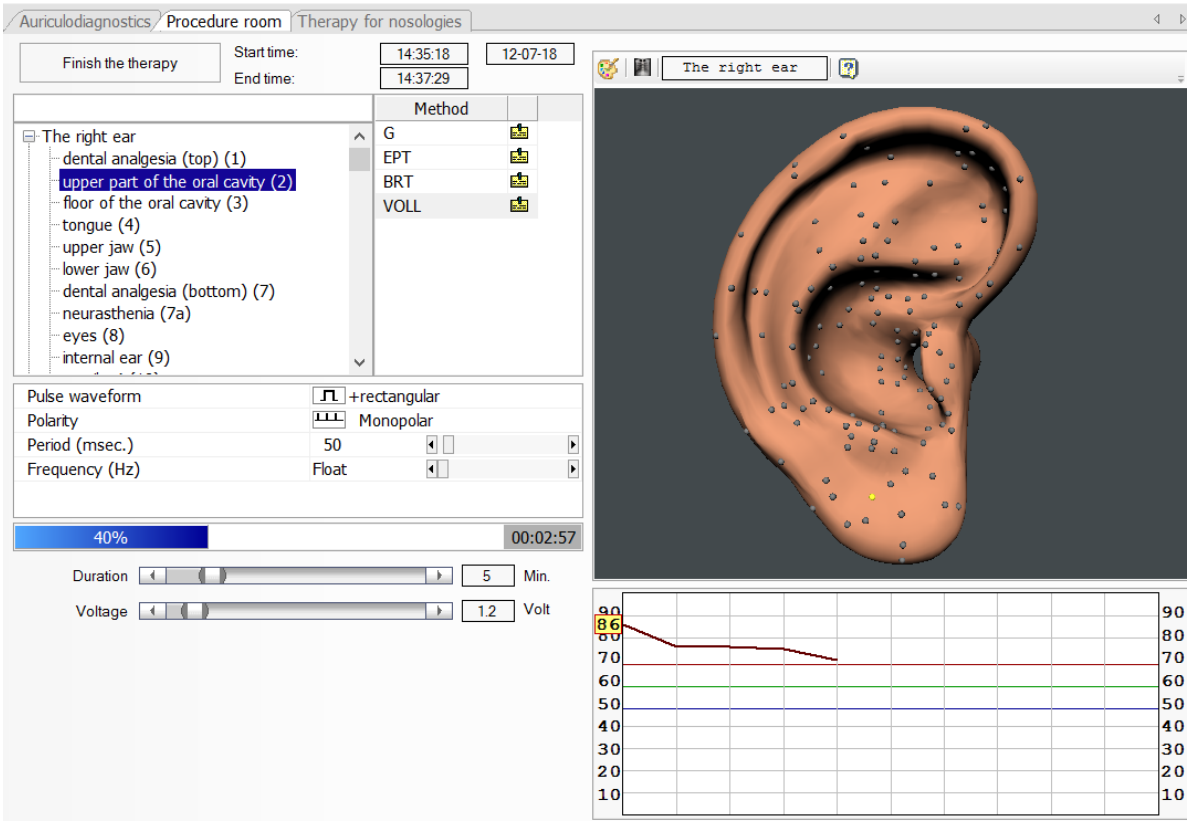
You can end the analysis by clicking the ***Finish analysis*** button. You can clear the analysis results by clicking the ***Clear*** button. In the right window the image will display with the BAP that you need at the moment, as well as a a pointer-type indicator, displaying current measuring value.

Testing order:

- Connect the red plug of device wire to the ebonite electrode probe with a special thin tip (with a ball on the end). Connect the black plug of device wire to the cylindrical electrode.
- Click the ***Begin analysis*** button and press the electrode to the BAP.
- The program will start to analyze points automatically one by one; the tip of the electrode-probe should be pressed slightly to the BAP shown in the image. The pressing duration should not exceed 2 seconds. One measurement for every BAP is performed.

Procedure room

This window is for the auriculotherapy by auricle BAPs. You can start therapy by clicking the ***Begin analysis*** button. The device switches to the diagnosis mode, and after the BAP measurement it switches to the therapy mode. You can end the analysis by clicking the ***Finish therapy*** button. You can clear the analysis results by clicking the ***Clear*** button. In the right window the image will be displayed. It will show the BAP that you need at the moment, as well as a pointer-type indicator displaying the current measuring value. During therapy process the graph of therapy influence on the BAP state over time will be shown.



BAP therapy order:

Connect the red plug of device wire to the ebonite electrode probe with a ball on the end. Connect the black plug of device wire to the cylindrical electrode.

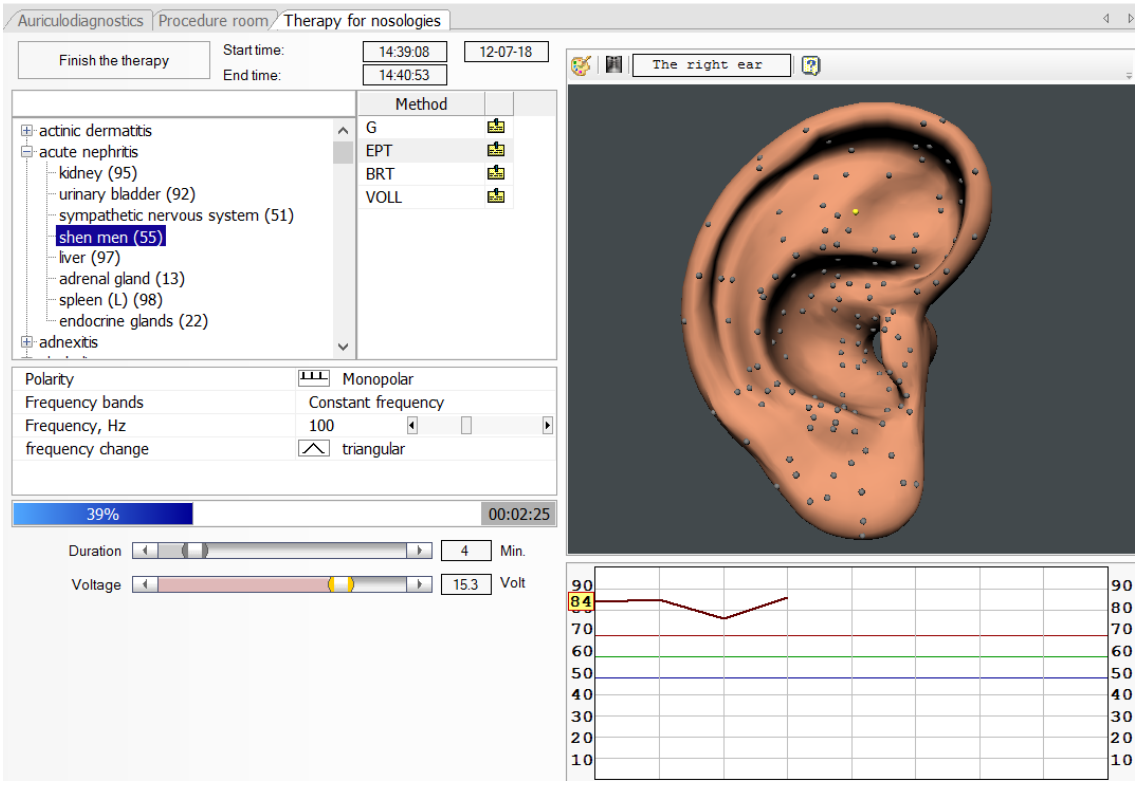
- Select necessary BAP for the therapy.
- Select the therapy method (by default it is galvanic current with continuous voltage).
- Click the ***Begin therapy*** button.
- Press a tip of the probe electrode to the BAP. A patient holds a cylinder in the hand at the same side.
- Perform the initial testing of the point shown in the image.
- Wait for the end of the point electrical therapy, no taking the electrode off the BAP. The therapy process is displayed as a progress bar.

It is possible to change electric current parameters during therapy process (except of BRT therapy).

The same contraindications are applicable to auriculotherapy as for electrotherapy. It is also prohibited to treat ear BAP during the episode of asthma, angina pectoris, acute myocardial infarction. It is unacceptable to influence on spontaneously painful BAPs, because it can cause intense adverse reaction.

Therapy by nosologies

This window is for the electrotherapy by nosologies. You can start therapy by clicking the ***Begin therapy*** button. The device switches to the diagnosis mode, and after the BAP measurement it switches to the therapy mode. You can end the analysis by clicking the ***Finish therapy*** button. You can clear the analysis results by clicking the ***Clear*** button. In the right window the image will be displayed. It will show the BAP that you need at the moment, as well as a pointer-type indicator displaying the current measuring value. During therapy process the graph of therapy influence on the BAP state over time will be shown.



Therapy order

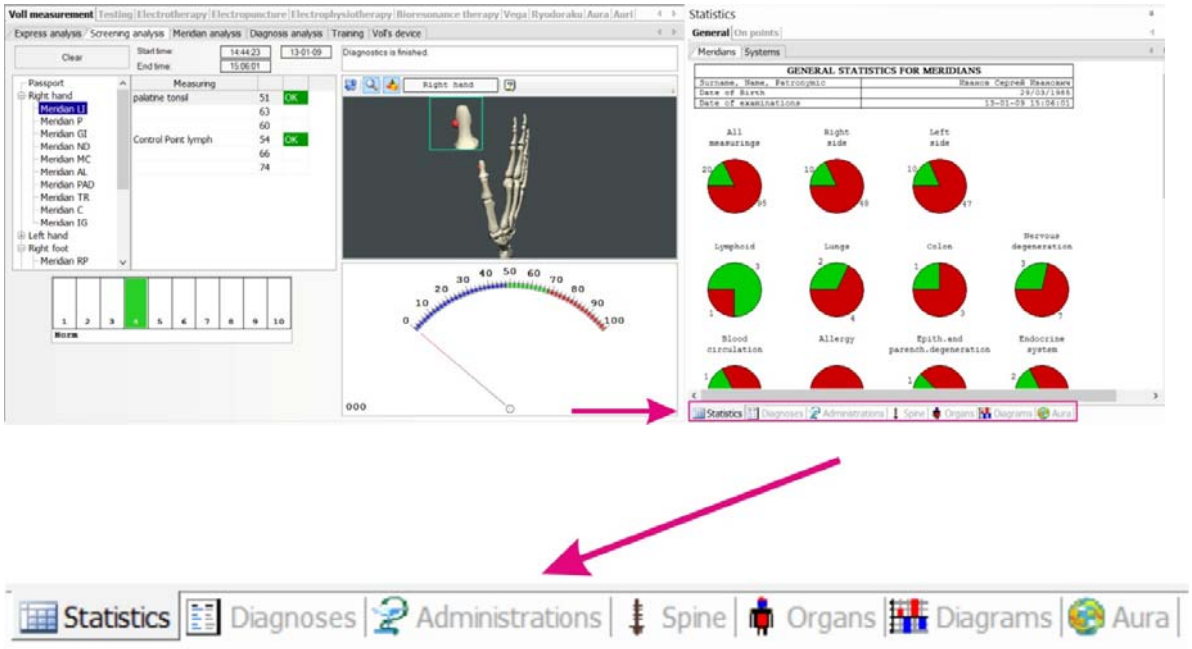
- o Connect the red plug of device wire to the ebonite electrode probe with a ball on the end. Connect the black plug of device wire to the cylindrical electrode.
- o Select necessary BAP for the therapy.
- o Select the therapy method (by default it is galvanic current with continuous voltage).
- o Select electric current parameters and therapy duration.
- o Click the ***Begin therapy*** button.
- o Press a tip of the probe electrode to the BAP. A patient holds a cylinder in the hand at the same side.
- o Wait for the end of the point electrical therapy, no taking the electrode off the BAP. The therapy process is displayed as a progress bar.

It is possible to change electric current parameters during therapy process (except of BRT therapy).

The same contraindications are applicable to auriculotherapy as for electrotherapy. It is also prohibited to treat ear BAP during the episode of asthma, angina pectoris, acute myocardial infarction. It is unacceptable to influence on spontaneously painful BAPs, because it can cause intense adverse reaction.

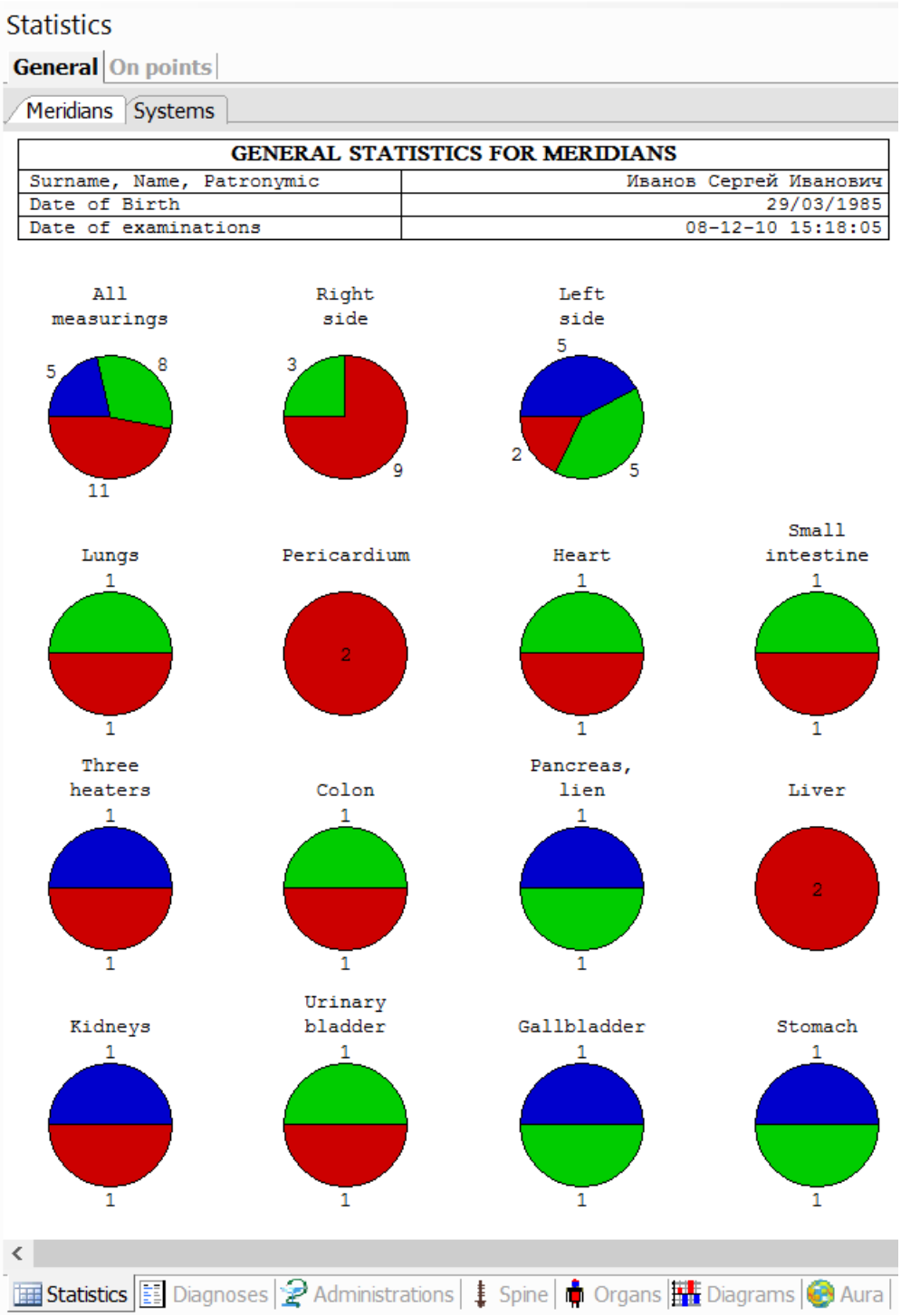
DIAGNOSTICS REPORTS AND ADMINISTRATION OF TREATMENT

By default the panel of reports and administration selection is shown in the main program field on the bottom right.

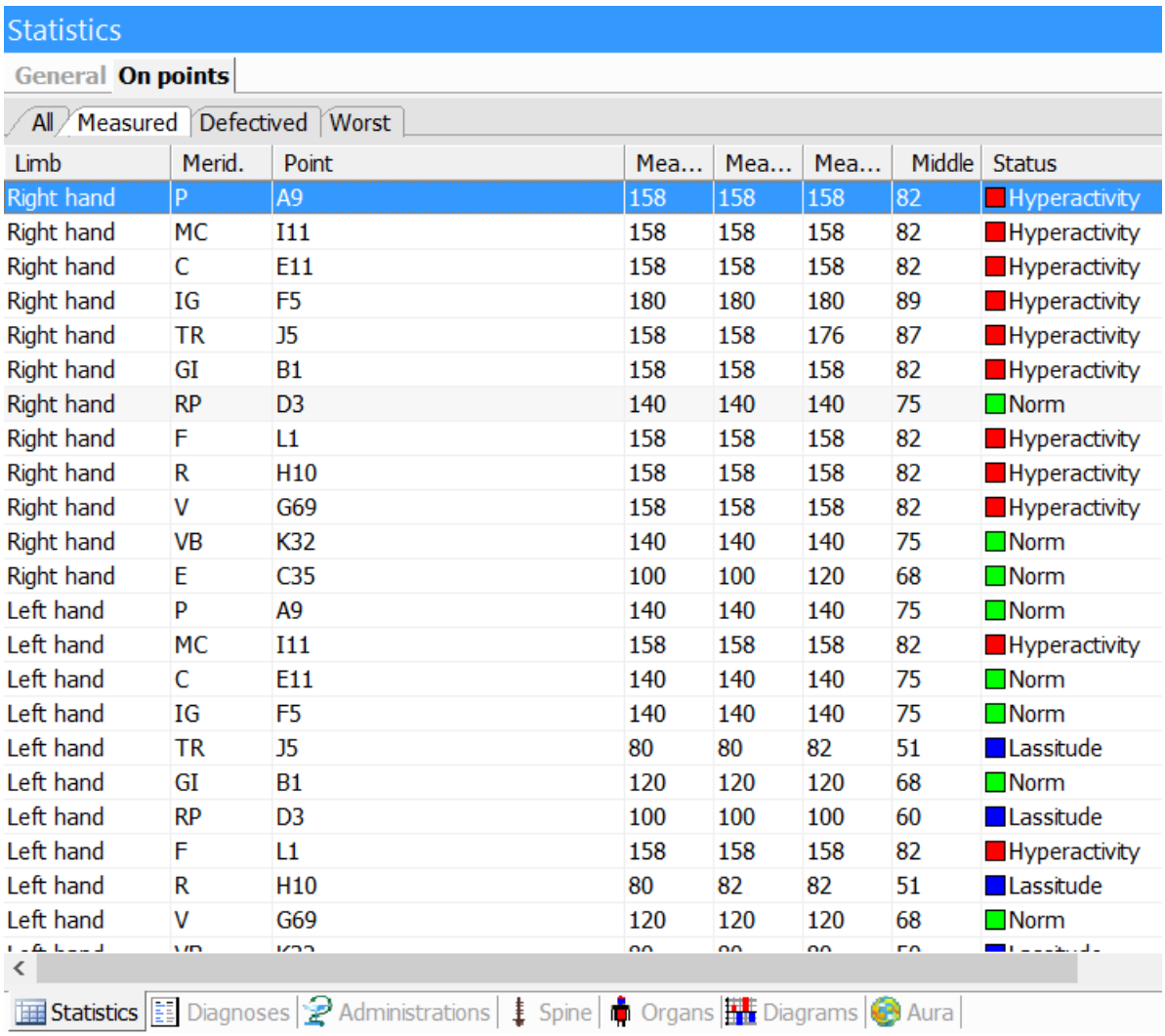


Statistics

The results of examination as pie charts are displayed in this window after the meridian or express analysis, the Nakatani diagnostics. Figures near circles mean amount of points that demonstrated fatigue (blue), or hyperactivity (red), or norm (green) when measuring.

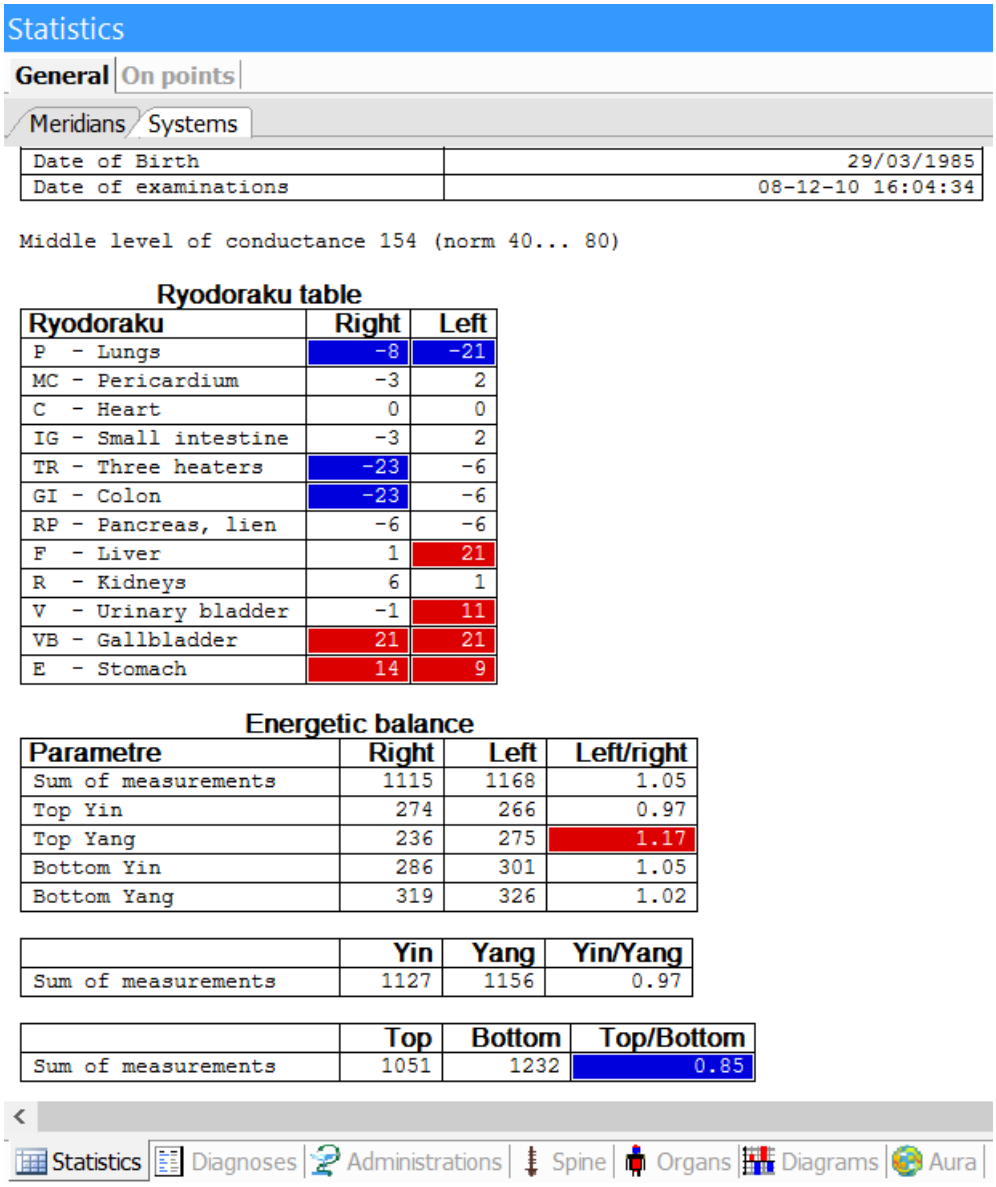


The results of examination can also be detailed by points in the table:


Statistics
General
On points
All
Measured
Defected
Worst
Limb
Merid.
Point
Mea...
Mea...
Mea...
Middle
Status
Right hand P A9 158 158 158 82 Hyperactivity
Right hand MC I11 158 158 158 82 Hyperactivity
Right hand C E11 158 158 158 82 Hyperactivity
Right hand IG F5 180 180 180 89 Hyperactivity
Right hand TR J5 158 158 176 87 Hyperactivity
Right hand GI B1 158 158 158 82 Hyperactivity
Right hand RP D3 140 140 140 75 Norm
Right hand F L1 158 158 158 82 Hyperactivity
Right hand R H10 158 158 158 82 Hyperactivity
Right hand V G69 158 158 158 82 Hyperactivity
Right hand VB K32 140 140 140 75 Norm
Right hand E C35 100 100 120 68 Norm
Left hand P A9 140 140 140 75 Norm
Left hand MC I11 158 158 158 82 Hyperactivity
Left hand C E11 140 140 140 75 Norm
Left hand IG F5 140 140 140 75 Norm
Left hand TR J5 80 80 82 51 Lassitude
Left hand GI B1 120 120 120 68 Norm
Left hand RP D3 100 100 100 60 Lassitude
Left hand F L1 158 158 158 82 Hyperactivity
Left hand R H10 80 82 82 51 Lassitude
Left hand V G69 120 120 120 68 Norm
Statistics
Diagnoses
Administrations
Spine
Organs
Diagrams
Aura

Nakatani diagnostics reports

After Nakatani (Ryodoraku) diagnostics, the Ryodoraku tables or so-called R-charts (detailed by systems) are shown in the **Statistics** window.



Date of Birth	29/03/1985
Date of examinations	08-12-10 16:04:34

Middle level of conductance 154 (norm 40... 80)

Ryodoraku table

Ryodoraku	Right	Left
P - Lungs	-8	-21
MC - Pericardium	-3	2
C - Heart	0	0
IG - Small intestine	-3	2
TR - Three heaters	-23	-6
GI - Colon	-23	-6
RP - Pancreas, lien	-6	-6
F - Liver	1	21
R - Kidneys	6	1
V - Urinary bladder	-1	11
VB - Gallbladder	21	21
E - Stomach	14	9

Energetic balance

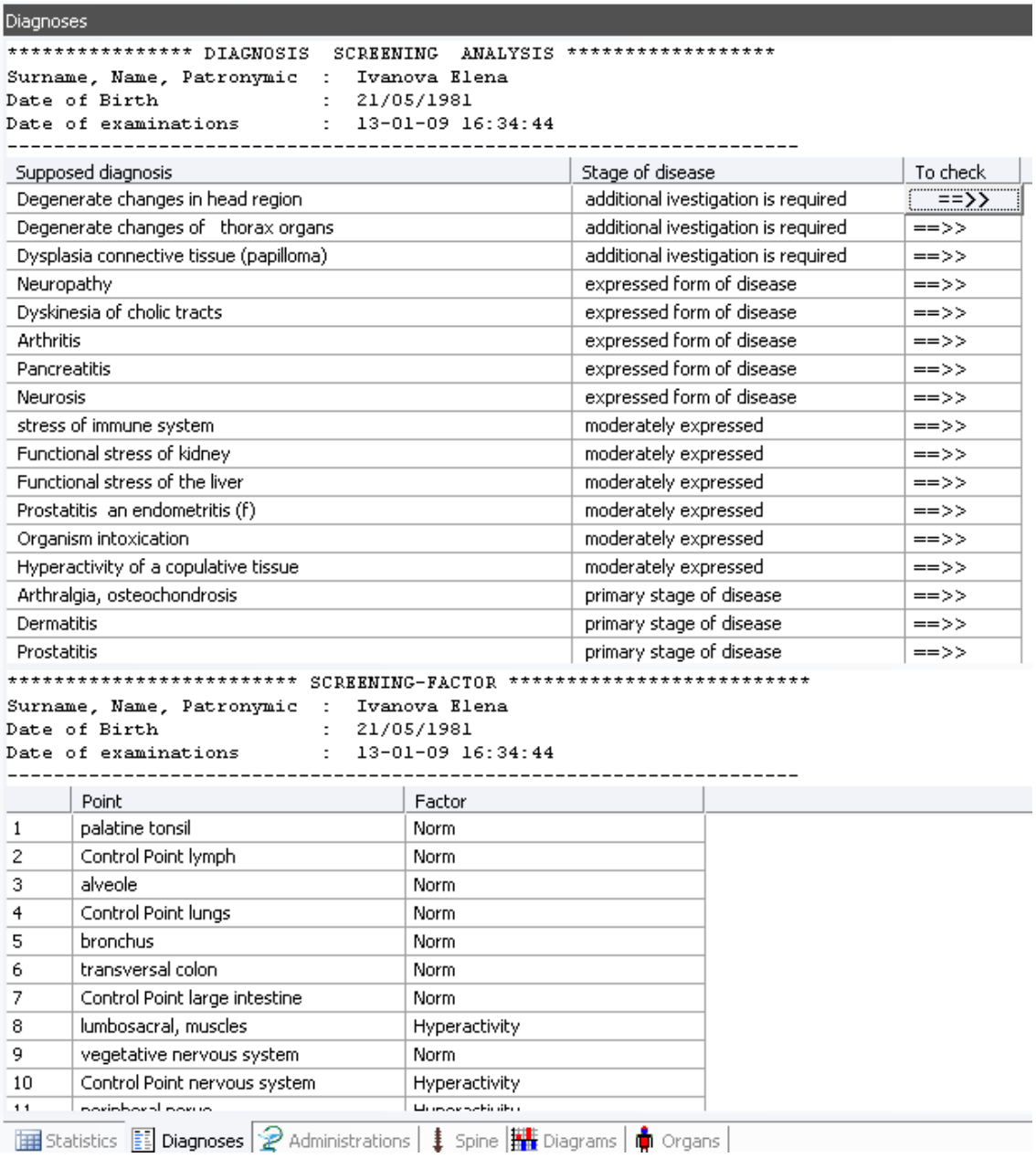
Parametre	Right	Left	Left/right
Sum of measurements	1115	1168	1.05
Top Yin	274	266	0.97
Top Yang	236	275	1.17
Bottom Yin	286	301	1.05
Bottom Yang	319	326	1.02

	Yin	Yang	Yin/Yang
Sum of measurements	1127	1156	0.97

	Top	Bottom	Top/Bottom
Sum of measurements	1051	1232	0.85

Diagnoses view

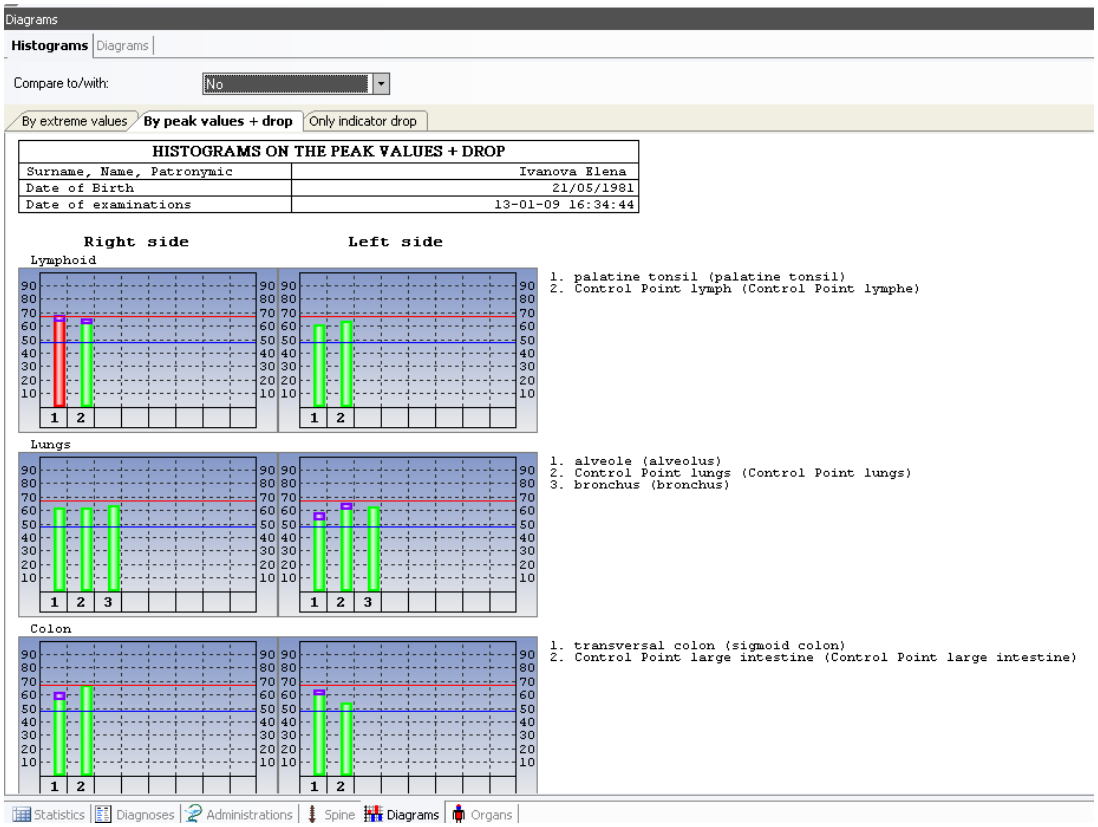
In this window a list of the most probable patient diagnoses based on the examinations is displayed, as well as a list and factor of points on which measurements were performed.



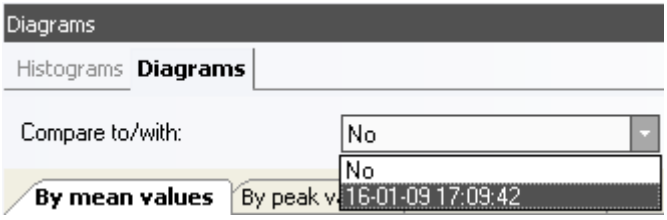
You can call the **Voll diagnostics** menu in the left window by clicking the **To check** button near the diagnosis. Click **Diagnosis analysis** button to check the diagnosis.

Diagrams and histograms

In this window the average of the results of examinations by meridians is displayed in graphic form after diagnostics.



In this window you can compare two examinations.



Diagrams

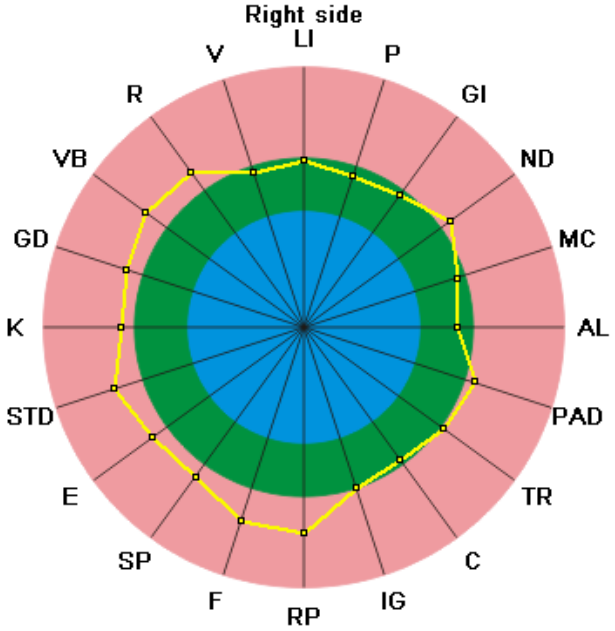
Histograms **Diagrams**

Compare to/with: No

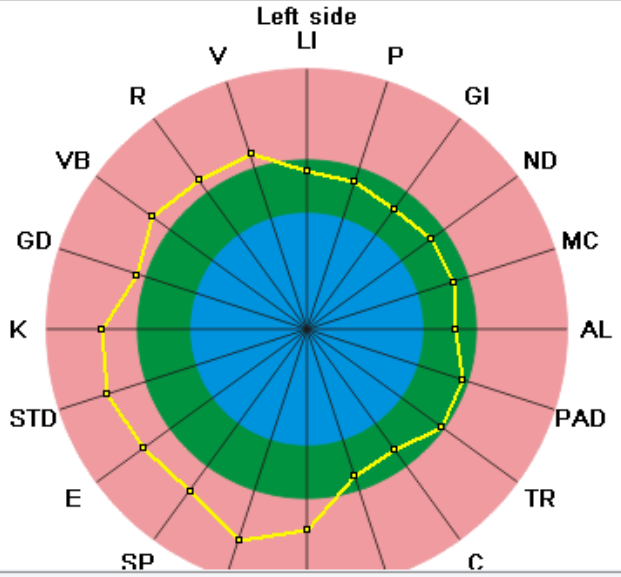
By mean values | By peak values | By minimun values

DIAGRAMS ON THE MIAN VALUES

Surname, Name, Patronymic	Ivanova Elena
Date of Birth	21/05/1981
Date of examinations	13-01-09 16:34:44



LI - Lymphoid
P - Lungs
GI - Colon
ND - Nervous degeneration
MC - Blood circulation
AL - Allergy
PAD - Epith.and parench.degeneration
TR - Endocrine system
C - Heart
IG - Small bowel
RP - Pancreas
F - Hepar
SP - Articulate degeneration
E - Gaster
STD - Copulative tissue degeneration
K - Implant
GD - Steatosis
VB - Cholecystis
R - Kidney
V - Urinary bladder



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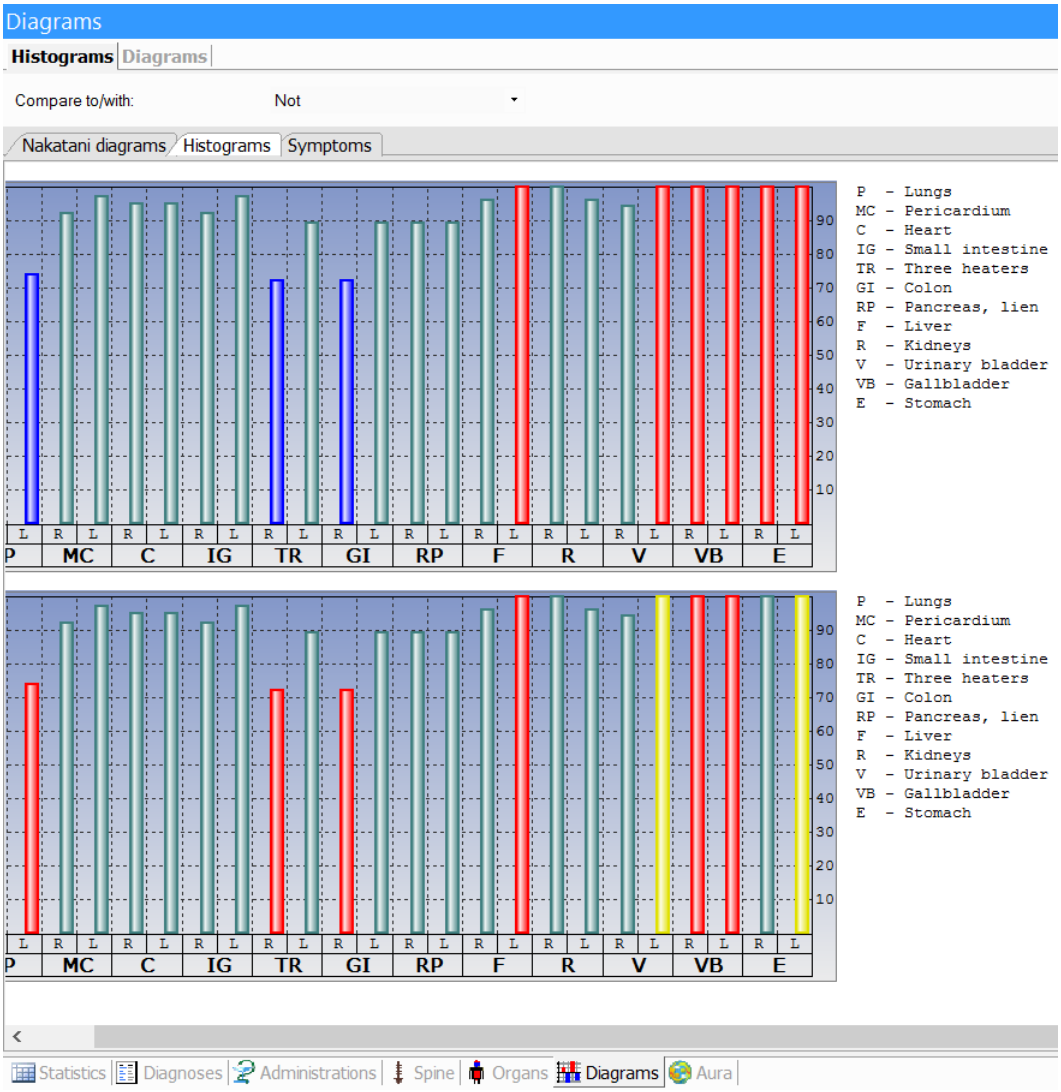
VB - Cholecystis
R - Kidney
V - Urinary bladder

Statistics | Diagnoses | Administrations | Spine | Diagrams | Organs

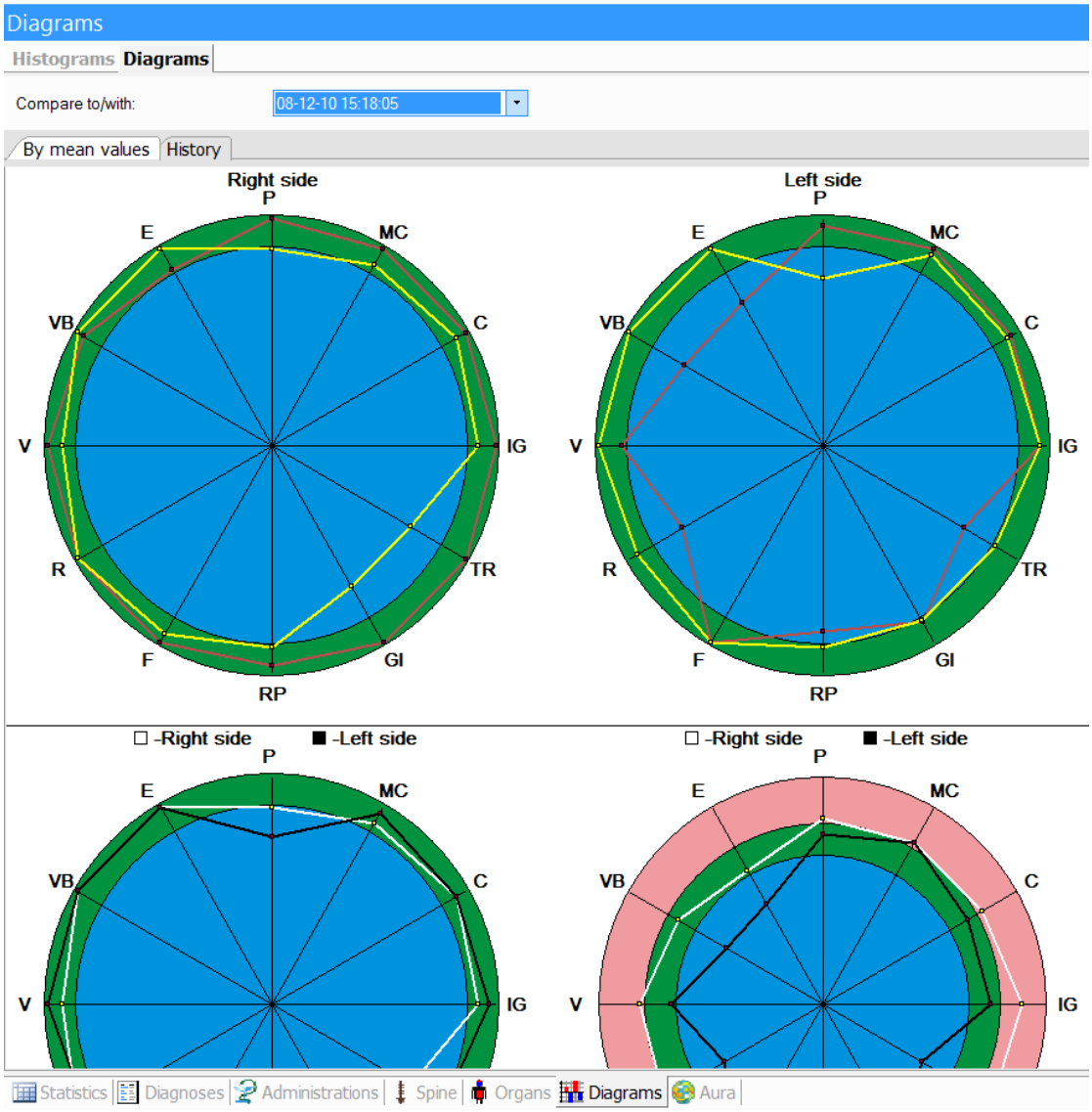
Nakatani diagrams and histograms:



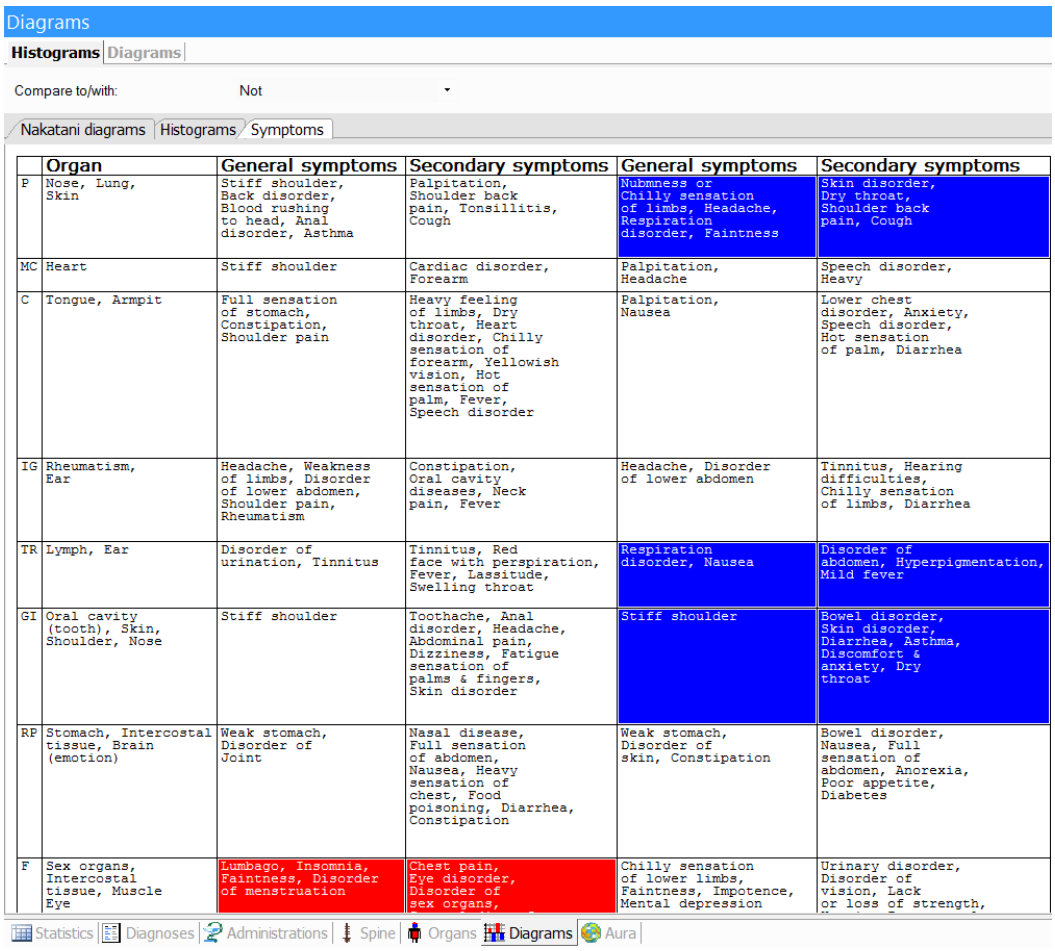
If values are less than twice of a normal range, they are colored **yellow**.

It is usually considered, if values are less than twice of a normal range, that condition does not required additional intervention (i. e. treatment), and can be compensated by the human body itself. It is just a kind of the first alarming signal.

However, in order to have a complete picture, it is necessary to perform measurements for several consecutive days. And only if within a few days the same poor results are observed, the attention needs to be paid.



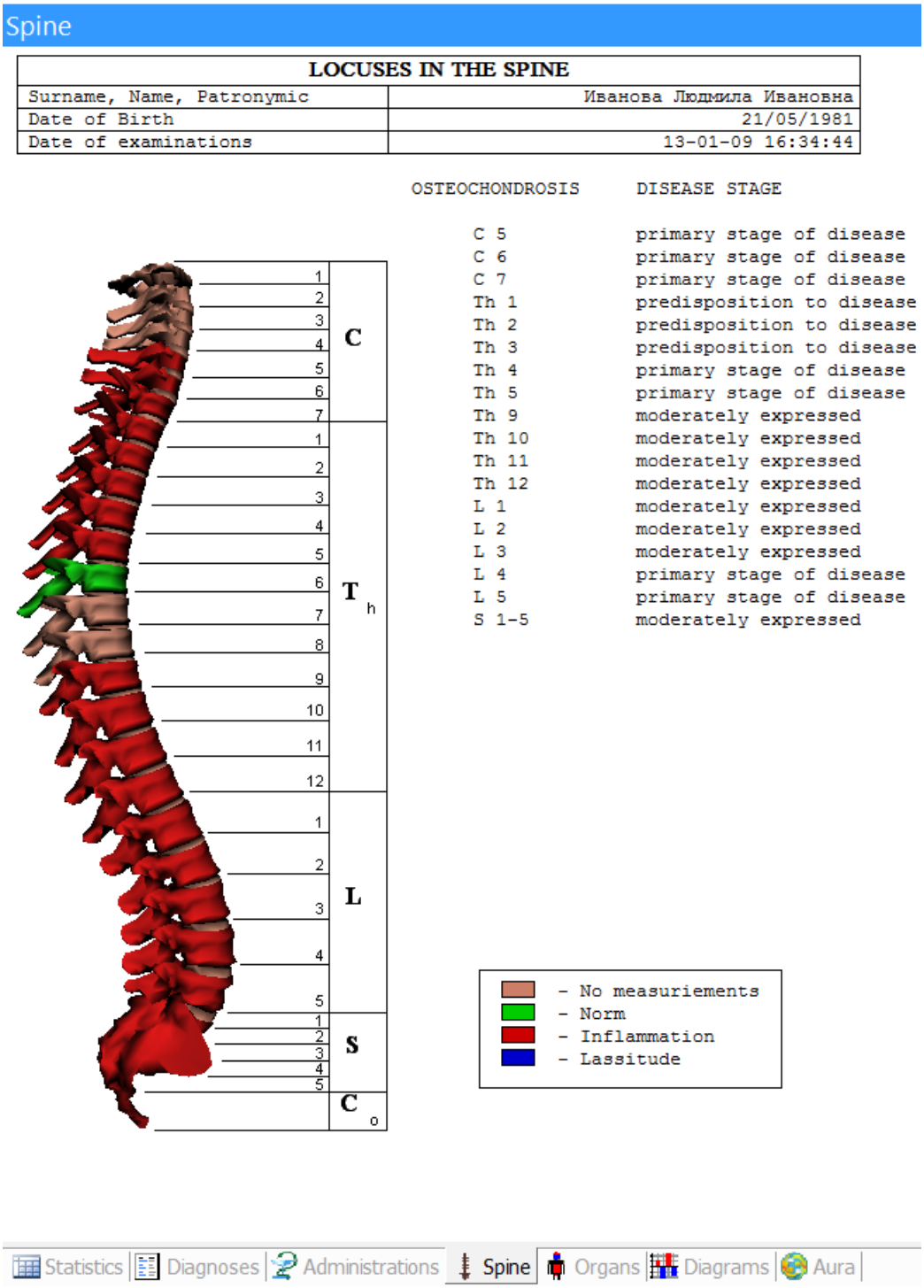
The possible symptoms are also displayed on the diagnostics results:



	Organ	General symptoms	Secondary symptoms	General symptoms	Secondary symptoms
P	Nose, Lung, Skin	Stiff shoulder, Back disorder, Blood rushing to head, Anal disorder, Asthma	Palpitation, Shoulder back pain, Tonsillitis, Cough	Numbness or Chilly sensation of limbs, Headache, Respiration disorder, Faintness	Skin disorder, Dry throat, Shoulder back pain, Cough
MC	Heart	Stiff shoulder	Cardiac disorder, Forearm	Palpitation, Headache	Speech disorder, Heavy
C	Tongue, Armpit	Full sensation of stomach, Constipation, Shoulder pain	Heavy feeling of limbs, Dry throat, Heart disorder, Chilly sensation of forearm, Yellowish vision, Hot sensation of palm, Fever, Speech disorder	Palpitation, Nausea	Lower chest disorder, Anxiety, Speech disorder, Hot sensation of palm, Diarrhea
IG	Rheumatism, Ear	Headache, Weakness of limbs, Disorder of lower abdomen, Shoulder pain, Rheumatism	Constipation, Oral cavity diseases, Neck pain, Fever	Headache, Disorder of lower abdomen	Tinnitus, Hearing difficulties, Chilly sensation of limbs, Diarrhea
TR	Lymph, Ear	Disorder of urination, Tinnitus	Tinnitus, Red face with perspiration, Fever, Lassitude, Swelling throat	Respiration disorder, Nausea	Disorder of abdomen, Hyperpigmentation, Mild fever
GI	Oral cavity (tooth), Skin, Shoulder, Nose	Stiff shoulder	Toothache, Anal disorder, Headache, Abdominal pain, Dizziness, Fatigue sensation of palms & fingers, Skin disorder	Stiff shoulder	Bowel disorder, Skin disorder, Diarrhea, Asthma, Discomfort & anxiety, Dry throat
RP	Stomach, Intercostal tissue, Brain (emotion)	Weak stomach, Disorder of Joint	Nasal disease, Full sensation of abdomen, Nausea, Heavy sensation of chest, Food poisoning, Diarrhea, Constipation	Weak stomach, Disorder of skin, Constipation	Bowel disorder, Nausea, Full sensation of abdomen, Anorexia, Poor appetite, Diabetes
F	Sex organs, Intercostal tissue, Muscle Eye	Lumbago, Insomnia, Faintness, Disorder of menstruation	Chest pain, Eye disorder, Disorder of sex organs,	Chilly sensation of lower limbs, Faintness, Impotence, Mental depression	Urinary disorder, Disorder of vision, Lack or loss of strength,

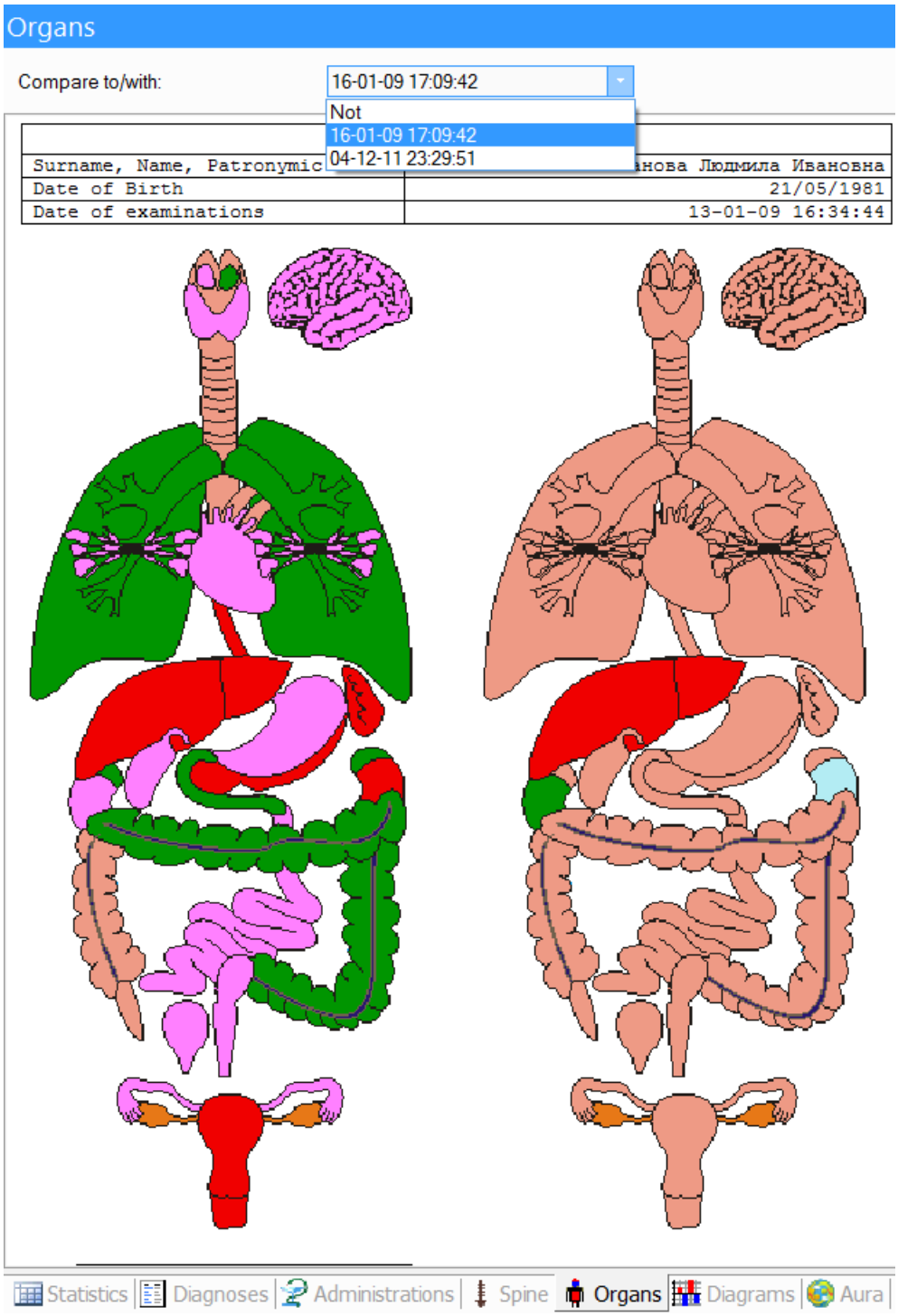
Visualization of spinal column state

In this window the most probable functional disorders by certain spinal bones are displayed (on the image of a spine column) after Voll diagnostics.



Visualization of organs state

In this window the most possible functional disorders are displayed after diagnostics (on the phantom of the internal organs). You can display the comparison of two examination results.



Administration of treatment

In this window a list of the most probable patient diagnoses based on the examinations are displayed after diagnostics, as well as lists of possible examinations and prescriptions according to these diagnoses.

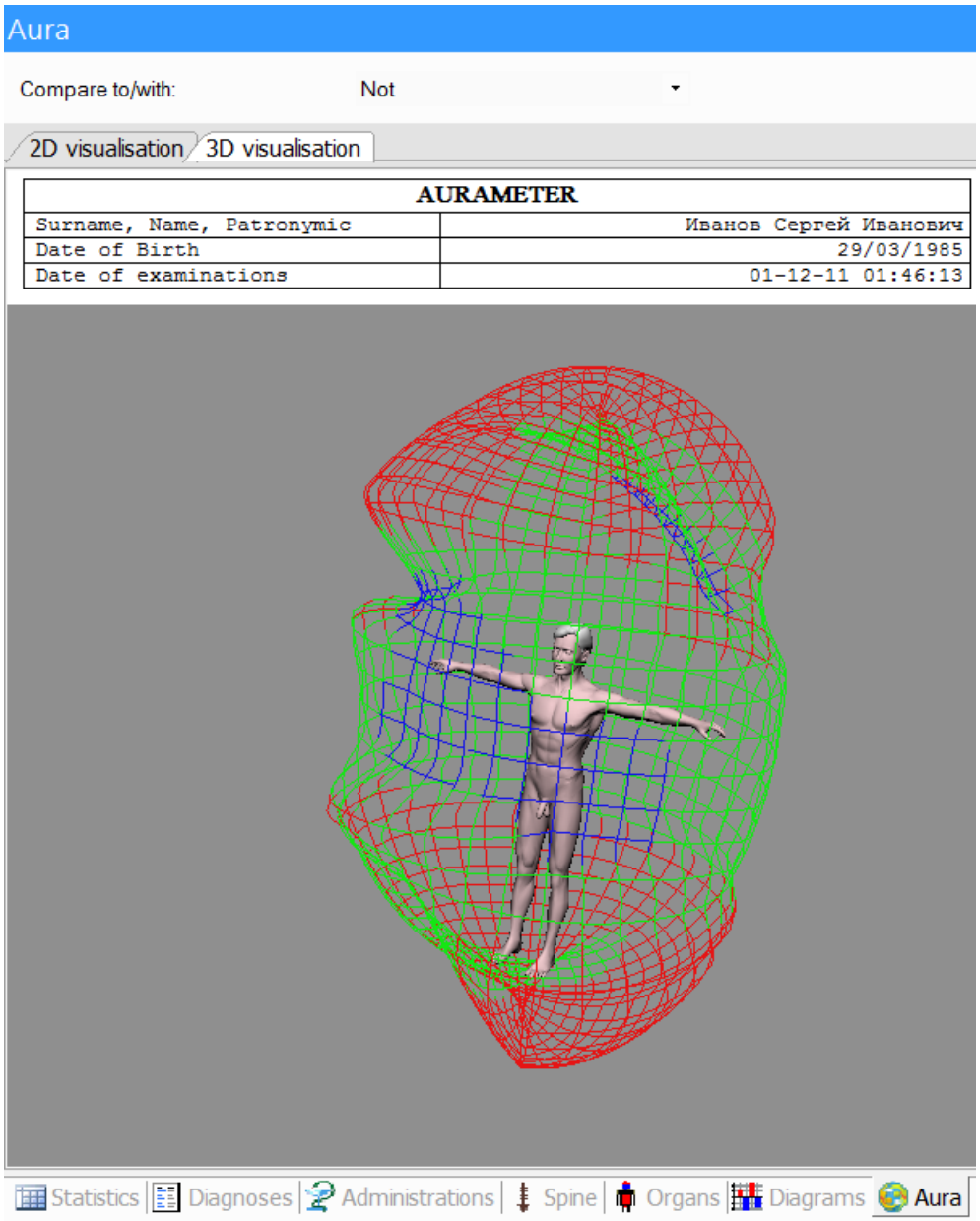
The window consists of three main sections.

- Diagnoses list area. Select needed diagnosis from the list.
- Area of the prescription of homeopatic remedies, herbs, examinations. Select necessary values from the list for selected diagnosis.
- The editing area of selected prescriptions. After selection of all prescriptions, this area can be edited and printed.

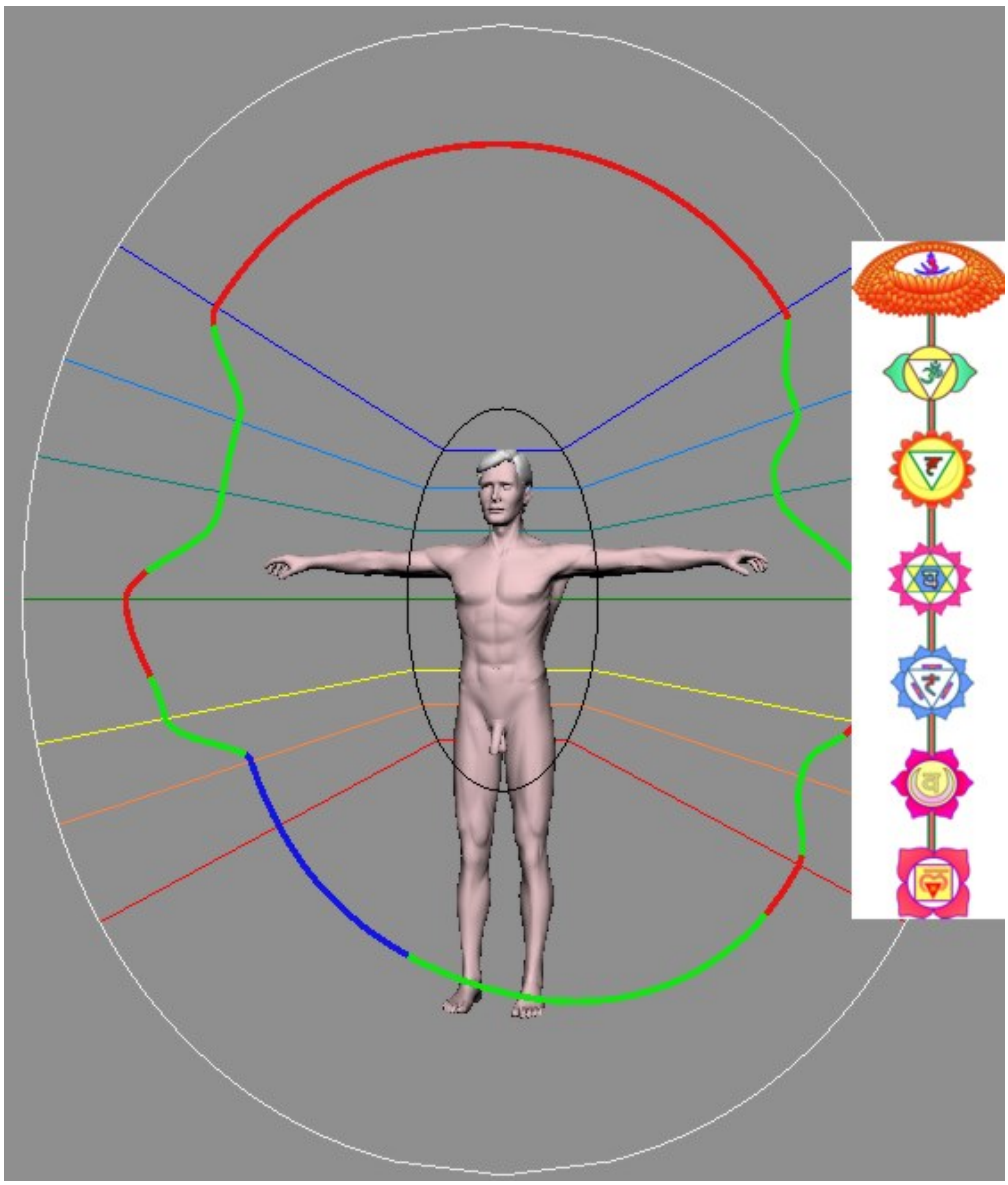
Note. Users are given the opportunity of enhancement of *Administration of treatment* module. In that way, after diagnostic testing (when the certain values are displayed) the program provides prescriptions of medicines added by user, nutraceuticals, expanded recommendations on procedures, dietary regimen, etc. For that, a user should send the request to biors@mail.ru, get a correspondence table between a diagnosis and medicine, fill it in and send the table back to be added to the device program.

Visualization of aura and chakras state

In this window after aurametry the aura state is displayed as a two-dimensional or three-dimensional image. You can rotate the image with mouse in any direction you want.



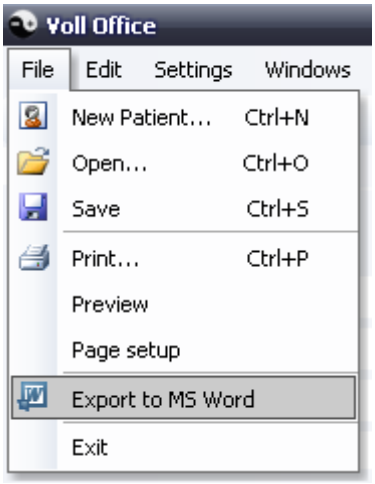
In **2D** visualization, the chakras are displayed as lines of different colors:



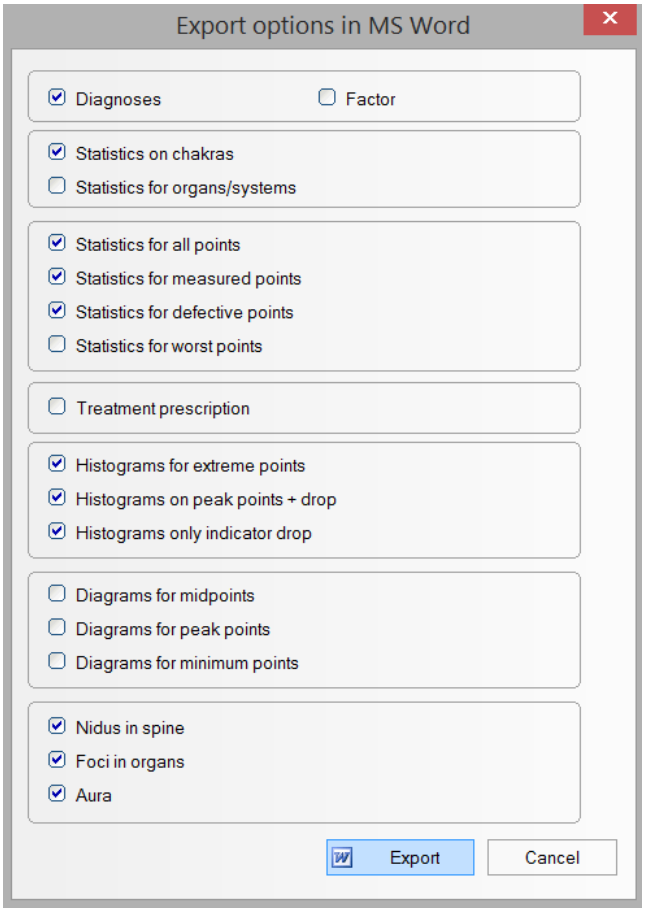
Report export to Word

The program allows report export to the text editor Word, entirety or selectively. The export can be useful if you need to edit reports before they are printed, or send examination results as a file by e-mail. You can also use this option if you want to record the information about patient to the data storage device or make an information backup.

To export a report, select ***Export to MS Word*** in the main menu.



After that, select reports to be printed (tick the corresponding boxes) and click the ***Export*** button.



SAFETY REQUIREMENTS

1. The device must not be dropped from heights of more than 50 centimeters.
2. The sharp edges impact on electrodes is not permitted.
3. It is prohibited to pull the power supply cable, USB cable and electrode cable when disconnecting.
4. It is prohibited to perform any examination if a person has implanted electronic devices (cardiostimulators, artificial pacemakers, etc.) without medical professional advice.
5. Simultaneous connection of a patient to the ***Master*** device and electrosurgical machine is prohibited.
6. Do not work with the ***Master*** device when it is closer than 1 m from working EHF or mkV therapy devices.
7. Do not connect the device to power supply without first ensuring that an electrical outlet plug, wires or housing are not damaged.
8. It is prohibited to operate the ***Master*** device when the cover is removed.
9. It is prohibited to use the device in facilities with humidity level higher than 80 % (baths, sauna).
10. It is necessary to avoid disruption of natural heat removal from the electronic unit case and covering it by thermal insulation materials (pillows, blankets etc.).
11. It is advised not to connect the device to power supply or PC if it was exposed to freezing temperatures. At first, keep the device at room temperature for 5 hours.
12. It is necessary to avoid the ingress of moisture into the device during disinfection and sanitization.
13. It is never acceptable to leave a patient alone during electrical therapy session.
14. If the device is malfunctioning, turn it off immediately. It is prohibited to operate the device having visible mechanical damages (broken wire or casing).
15. It is prohibited to place the device near to open flame sources.
16. The device should not be exposed to direct sunlight for a long time.

17. Keep the device out of the reach of children.

TRANSPORTATION AND STORAGE

1. The device must be transported by closed modes of all kinds of transport in accordance with shipping rules, which are valid in such mode of transport.

2. The device should be stored in manufacturer packaging in storages.

3. The device should be stored in closed rooms excluding the possibility of influence of sunlight, moisture, thermal shocks.

4. The air in storage facilities shall not contain harmful impurities causing corrosion of metal parts.

THE MAINTENANCE

1. Carry out the external inspection of the device. Make sure there are no mechanical damage of the device and accessories.
2. The device elements can be cleaned up using a cotton ball wetted with water or alcohol-containing solution.
3. After every patient, clean electrodes with alcohol, then with a formaldehyde wipes (bactericidal, antiviral, fungicidal). Once a month disconnect electrodes, wipe them with a solution of the Zepter Cleansy type until the former shine is restored.
4. Keep cylindrical electrodes, end cups/tips, duralumin container and electrode probe in individual bags.

GUARANTEE OBLIGATIONS

1. The manufacturer guarantees quality conformance to the requirements of the performance specifications if user meets conditions of proper operation, storage and transportation. Guarantee service life is 12 (twelve) months from the date of shipping to ultimate consumer.

2. The warranty shall be effected by free of charge repair of a damaged device. The damaged device is delivered at the expense of the user.

3. The warranty is considered as no longer valid in following cases:

— if repair was made by non-affiliated, non-authorized companies or individuals;

— in case of unauthorized changes of the device structural design or electronic plate;

— if the user does not observe the safety, storage and maintenance rules described in the present User Manual;

— if the factory seals on the equipment are broken;

— in case of external mechanical, chemical or other damages of device casing, wires or electrodes;

4. The guarantee does not cover cables, wires, electrodes, and other expendable patient-contacting materials.