RETI-port/scan 21

Instruction for Use

Short Manual

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ROLAND CONSULT
Electrophysiology and Imaging
Roland Consult Stasche & Finger GmbH
Heidelberger Str. 7
14772 Brandenburg an der Havel
GERMANY

Content

Manufacturer:

Roland Consult Stasche & Finger GmbH
Heidelberger Str. 7
14772 Brandenburg an der Havel, GERMANY
Phone: +49 3381 890-1034, Fax -2994
Email: info@roland-consult.de

Note:

This is a short user guide. You can find the detailed manuals for the RETI-port/scan 21 on the Flash Drive of the system.

1 Hardware and software supplied by third parties

1.1 Do not install any software/hardware from third parties that has not been approved for this purpose by Roland Consult Stasche & Finger GmbH.
This can lead to faults and device failures.

1.2 A printer and an external USB hard drive for data backups must always be connected via the LAN.
The LAN connection is deactivated while working with the patient and must not be activated during this time by the device user.

1.3 Automatic Windows Update functionality is deactivated on the MiniPC-3050 and must not be reactivated by the user without consulting Roland Consult Stasche & Finger GmbH.

2 Safety information

2.1 General information

2.1.1 The system does not have explosion protection. Accordingly, it must not be used in the vicinity of combustible anaesthetics.

2.1.2 The treatment room must be darkened in order to ensure the proper execution of the ERG examination. Failure to observe this requirement can lead to incorrect measurement results.

2.1.3 The device must be properly de-energised before cleaning/disinfection and before all maintenance/repair work by disconnecting the power plug.

2.1.4 The annual technical safety check must be carried out in order to prevent damage to the device as well as incorrect measurement results. The user is to be held solely responsible for all repair and maintenance work.
The technical safety check must be performed by Roland Consult Stasche & Finger GmbH or an authorised and properly qualified partner.

2.1.5 Initial installation, repairs and maintenance must be performed by Roland Consult Stasche & Finger GmbH or an authorised and properly qualified partner.

2.1.6 To avoid the risk of an electric shock, this device must be connected to a power supply network that is equipped with a protective conductor.

2.1.7 The device must not be operated with input voltages that are different to those specified (see the "Technical specifications" section).

2.1.8 Before opening the housings covering components and stimulators, always de-energise the device by disconnecting the power plug! There is a risk of life-threatening injury when the device housing is open.

2.1.9 In the Noratel isolation transformer component, a self-resetting temperature switch is included: this interrupts the power supply in the event of the device overloading. If the switch trips, switch the device off and wait until the transformer has cooled down.

2.1.10 The device requires an adequate flow of ambient air (convection) for cooling. Take care to ensure that the air vents are not covered.

2.1.11 Always use original batteries as supplied by the manufacturer.
Replacing batteries with substandard products can lead to faults. Batteries are used by the following components: MiniPC-3050 and stimulator PC.

2.1.12 If the Ganzfeld Q450 emits a continuous tone, this means that at least one of the four micro-fuses used for the LED fields is faulty. Please ensure that defective micro-fuses
(86-99-T 630 mA.1) in the Ganzfeld Q450 are always replaced by Roland Consult Stasche & Finger GmbH or authorized maintenance personnel.

2.2 Patient safety

2.2.1. The applied parts (e.g. chinrest and headrest) must not be allowed to come into contact with patient skin if this skin is not intact/uninjured.

2.2.2 Before starting the examination, the patient must be informed about its purpose, as well as the steps involved and its duration.

2.2.3 To properly protect data, the user should back up the RETIbase database to an external device at regular intervals.

2.2.4 All results must be evaluated solely by a doctor trained as a qualified ophthalmologist.

2.2.5. Always ensure that the correct set of patient data is being used when selecting the examination to perform.

2.2.6 The device must be used only together with the accessories supplied by the manufacturer.

2.2.7 Electrodes and pastes should be used in accordance with the manufacturer's instructions provided.

2.2.8 After selecting a patient record that has been created/stored in the system, always check to confirm the details are correct to avoid mixing up patient records.

2.2.9 To ensure the security of the patient database, a password is required for access.

2.2.10 Simultaneous connection of a patient to a radiofrequency (RF) surgical unit and to an electromyograph or evoked potential device may cause burns to the surfaces under the electrodes and possibly damage the applied parts.

2.2.11 Operation near a shortwave or microwave therapy device may cause instability in the applied parts.

2.2.12 Contact with other conductive parts must be prevented at the unused amplifier inputs so that the connection to the patient remains isolated.

2.2.13 Positioning of the patient: The patient should not touch any equipment. Hands should be positioned comfortably on the upper thigh.

2.3 Cleaning / disinfecting

2.3.1 Always use only the cleaning agents/disinfectants as specified in these instructions for use while also observing the manufacturer specifications. This avoids any risk of contamination, chemical burns or damage to the device itself.

2.3.2 Please follow any instructions provided by the manufacturer of the cleaning agents/disinfectants as regards potential intolerance of one of the ingredients in these materials.

2.3.3 The device must be properly de-energised before cleaning/disinfection and all maintenance or repair work.

2.3.4 After cleaning/ disinfecting, wipe with a damp cloth of drinking water quality to avoid skin irritations or damages on the device.

2.4 Disposal

2.4.1 Device scrap must be disposed of separately from domestic waste to avoid damage to the environment.

2.4.2 Please follow the disposal instructions from the cleaning agent/disinfectant manufacturer to avoid damage to the environment.

2.5 Electromagnetic compatibility (EMC)

2.5.1 The use of this device in the immediate vicinity of other devices or when stacked on top of/underneath other devices should be avoided, since this can result in malfunctions during operation. If this kind of operation is unavoidable, then this device and the other devices in question should be monitored closely in order to confirm that they are working properly and as intended.

2.5.2 Always use only the accessories as specified in these instructions for use. The use of non-intended accessories and cables can cause problems in relation to electromagnetic compatibility.

2.5.3 This device, including its accessories, is intended solely for use in healthcare facilities (hospitals, doctor's practices, etc.).

2.5.4 If this RETI-port/scan 21 medical device is used in ambient conditions that are different to the conditions specified in table 12.1.1, then the values for the stimulation may change by as much as +/−10%.

2.5.5 Portable RF (radio frequency) communication equipment, including antennas, can cause problems with this device. Please operate this device (incl. accessories and cables) at a minimum distance of 30 cm from such RF equipment.

2.5.6 This medical device complies in full with the EN 60601-1-2:2015 standard as regards electromagnetic compatibility, with the exception of communication equipment operated in its immediate vicinity. In the latter case, this may cause flickering on the monitor on the MiniPC.

2.5.7 If the message window "The connection to the stimulator or recording hardware is disrupted!" appears, follow the instructions in this warning: Switch off the device, leave the device off for at least 5 s and then switch all components back on.

2.5.8 If the system reports the failure of a stimulator, switch off the device, wait at least 5 s and then switch it back on.

2.5.9 Two records of results are created simultaneously for the electro-physiological examinations.
After the examination, only reproducible examination results are accepted for which the calculated correlation factor is greater than 85%.
If the value is smaller than this, the examination must be repeated.

2.5.10 Signals are being misrepresented – the amplitude is greater than the expected peak. Action: automatic artefact suppression is being applied.

2.5.11 If operating functions become unresponsive on the MiniPC, press the MiniPC's power button for approx. 5 s: the MiniPC powers off. Switch off the RETI-port/scan 21 device, wait 5 s, then switch all components back on.

2.5.12 In terms of electromagnetic interference, the annual technical safety check is a necessary precaution for this device, so as to ensure the maintenance of its basic safety as well as its key performance characteristics.
This technical safety check must be performed annually during the expected service life of the device, to prevent damage to the device as well as incorrect measurement results.

2.5.13 If the height adjustment mechanism fails on the operator table, contact your local dealer or the support hotline.

2.5.14 Use of operator table: It is forbidden to use of the device if the ESD foil is missing from the control buttons of the lifting columns.

2.6 Integrating PEMS in an IT Network

2.6.1 Integrating PEMS into an IT NETWORK that includes other devices may give rise to previously unknown RISKS for PATIENTS, OPERATORS and third parties; Please identify, analyse, assess and gain control over these risks!
If the following changes are made to the IT network, additional analyses must be performed.
• if the IT NETWORK configuration is modified;
• if elements are added to the IT NETWORK at a later date;
• if elements are removed from the IT NETWORK;
• if devices connected to the IT NETWORK are updated;
• if devices connected to the IT NETWORK are upgraded.

2.7 Medical isolation transformer

2.7.1. The device has been equipped with a medical isolation transformer. Always ensure that all components in the system are connected via this medical isolation transformer. Do not make any changes to the system once it has been properly installed.

2.8 Hazards posed by stimulator radiation

2.8.1. If used as intended, the Ganzfeld Q450, MINIganzfeld I8 and BABYflash E130 stimulators and the stimulator monitor does not emit any harmful radiation.

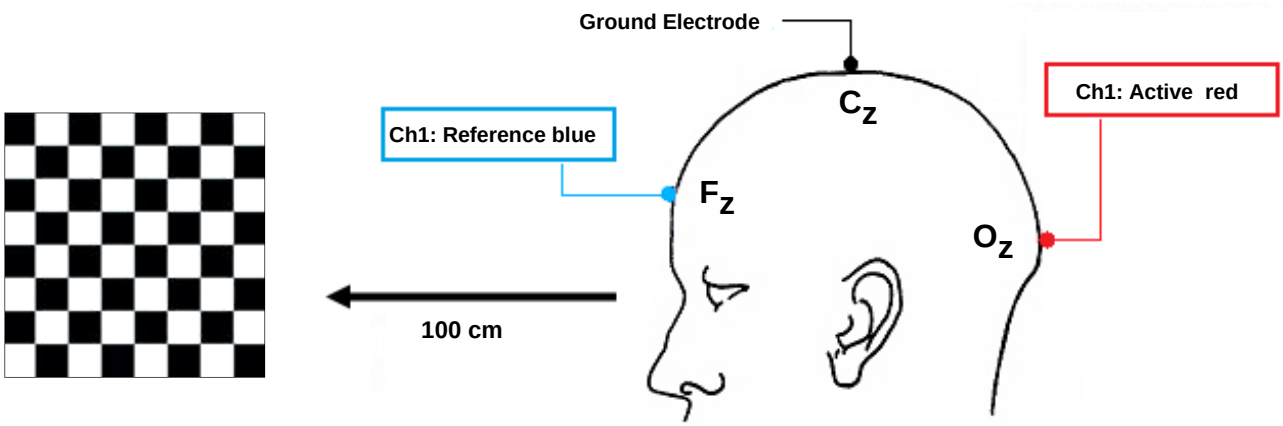
2.8.2. The light from BABYflash E130 may be harmful in the 1st case of error (continuous blue light). The risk of eye damage increases with the length of exposure. If, in the 1st case of error, this instrument is used to expose patients to radiation for longer than 8 hours, the hazard reference value will be exceeded.
If this is the case, please stop using the device on the patient!

2.9 Change of location of the device

2.9.1. If the device needs to be moved, loosen the locked rollers and lower the table to its lowest position.

2.9.2. During the examination, all four rollers on the feets of the operator's table must be locked.

3 Pattern VEP



Requirement:

- Distance patient → monitor: 100 cm
- Light-adapted Patient (photopic conditions)
- Patient refraction / correction for 100 cm viewing distance
- 3x EEG-Electrodes at channel 1
- One eye covered
- Impedance < 5 kΩ

Measurement:

- Program → Pattern VEP
- Enter patient data
- Electrode placement
- Measure impedance
- 2 x 2 measurements: right eye, different check size 1.step= 1,0deg, 2.step= 15 min
- Change eye cover
- 2 x 2 measurements left eye, different check size 3.step= 1,0deg, 4.step= 15 min, go to Analysis, Save (original data)
- if needed: adjust the scale, Marker correction, smooth
- Save (analyze data) and print out

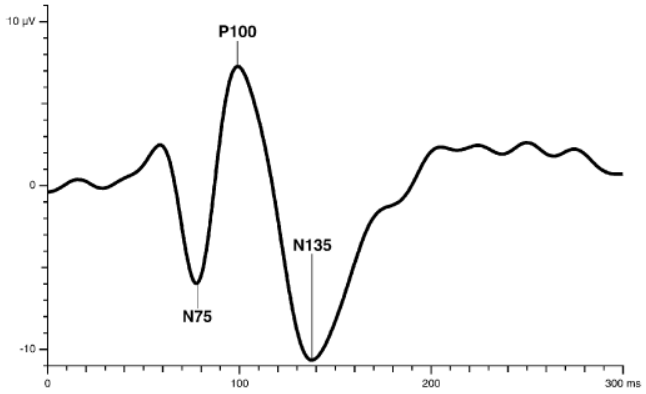
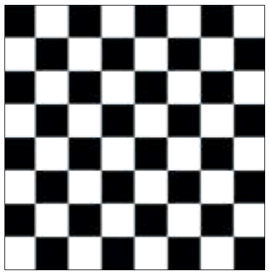
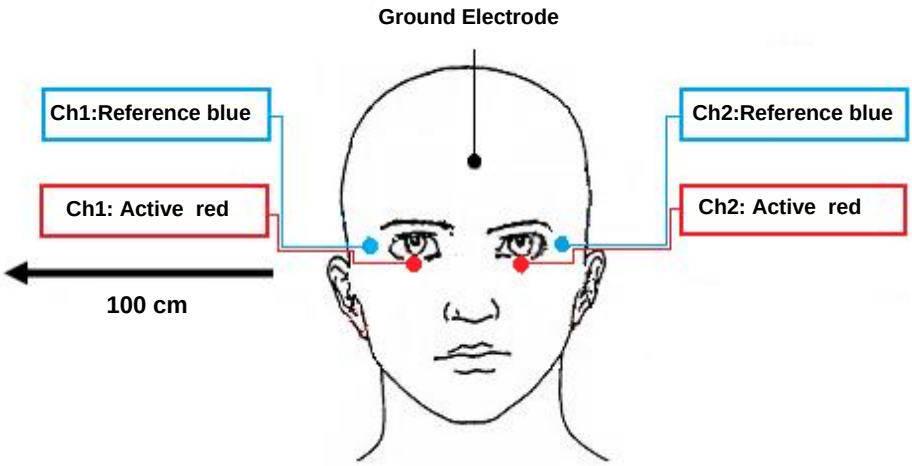


Figure 2. A normal pattern reversal VEP.

4 Pattern ERG



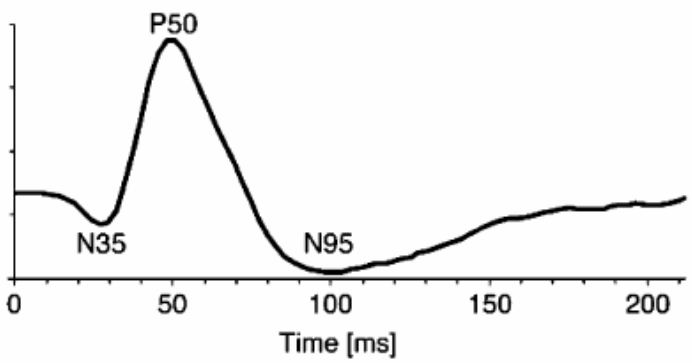


Requirement:

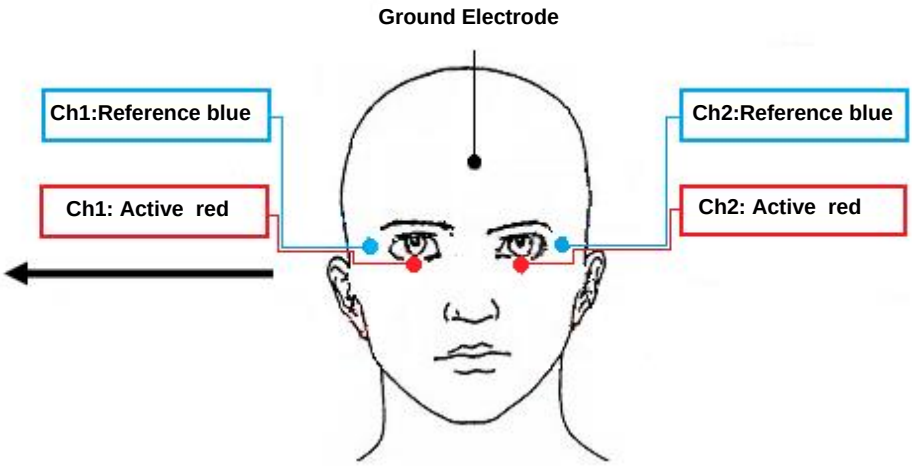
- Distance patient → monitor: 100 cm
- Light-adapted Patient (photopic conditions)
- Patient refraction / correction for 100 cm viewing distance
- Right: Channel 1 / Left: Channel 2
- 2 active Electrodes: ERG-Thread/ERG-JET/Gold foil/HK-Loop
- 2 reference EEG electrodes, 1 ground EEG electrode
- Both eyes at same time
- Impedance < 5 kΩ

Measurement:

- Program → Pattern ERG
- Enter patient data
- Electrode placement
- Measure impedance
- 2 measurements: 1.step check size 48min of arc
  2. step same check size 48min ; result of first step is in shadow to check the reproducibility of the response
- go to Analysis, Save (original data)
- if needed: adjust the scale, Marker correction, smooth, blinking artifact remove
- Save (analyze data) and print out



5 ISCEV ERG Ganzfeld Q450 C/SC

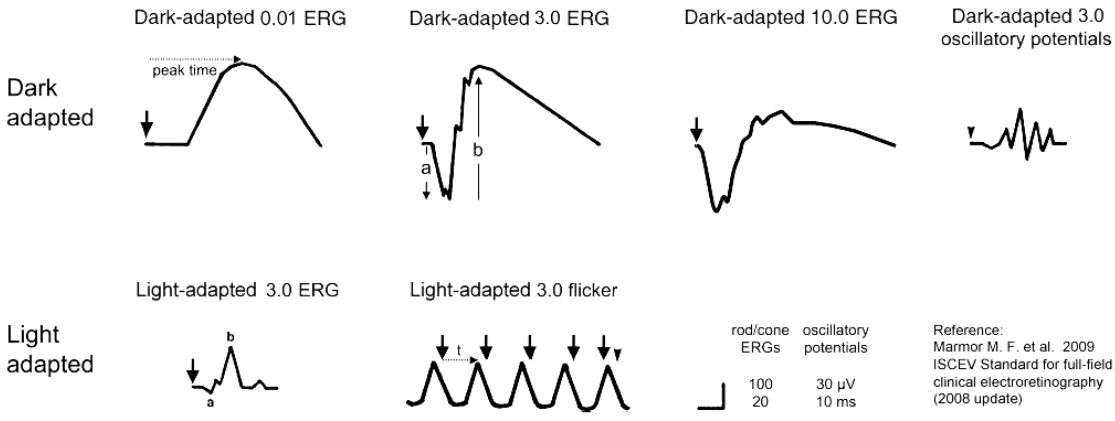


Requirement:

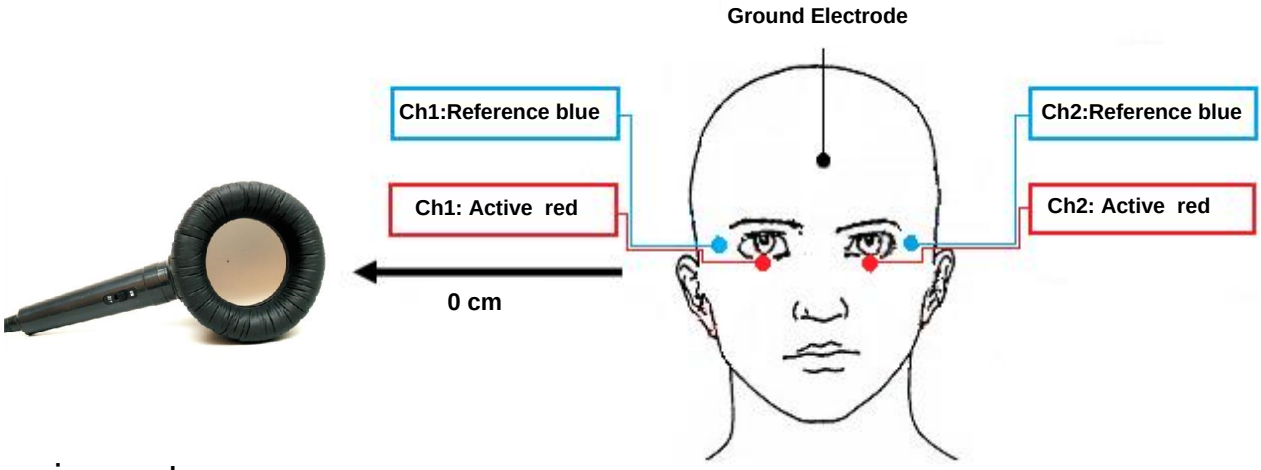
- Dark-adapted Patient 20 - 30 min (scotopic conditions)
- Pupils dilated
- Right: Channel 1 / Left: Channel 2
- Active Electrodes: ERG-Thread/ERG-JET/Gold foil/HK-Loop
- No visual correction
- Both eyes
- Impedance < 5 kΩ

Measurement:

- Program → ISCEV ERG (GF)
- Enter/Load patient data
- Electrode placement
- Measure impedance
- 4 Dark-adapted steps (scotopic conditions)
- go to next step
- 10 min light adaptation before next step starts
- 2 Light-adapted steps (photopic conditions)
- go to Analysis, Save (original data)
- if needed: adjust the scale, Marker correction, smooth, blinking artifact remove
- Save (analyze data) and print out



6 ISCEV ERG Miniganzfeld I8

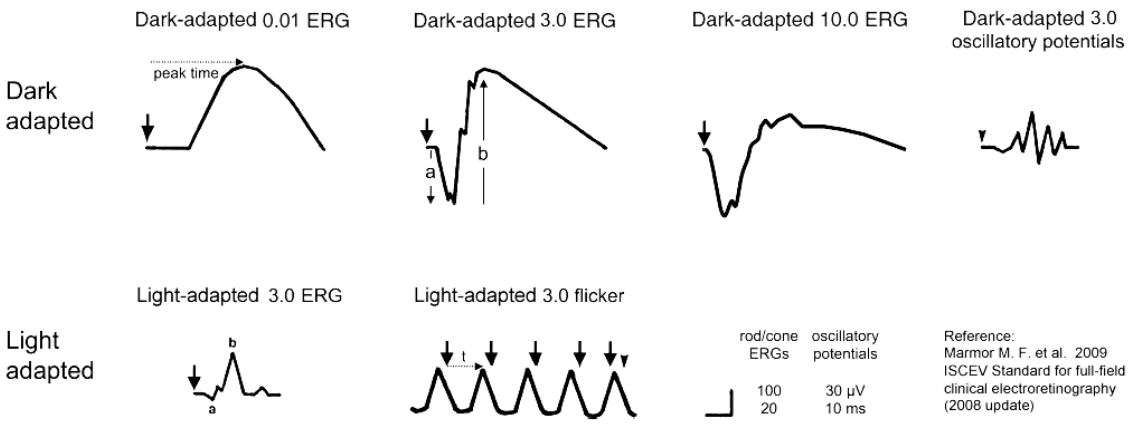


Requirement:

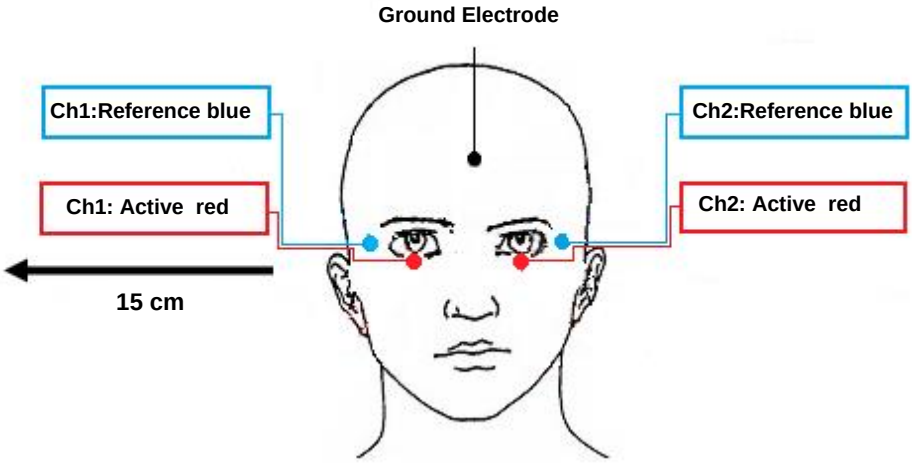
- Dark-adapted Patient (scotopic conditions)
- Pupils dilated
- Right: Channel 1 / Left: Channel 2
- Active Electrodes: ERG-Thread/ERG-JET/Gold foil/HK-Loop/Neonatal skin electrodes
- No visual correction,
- measurement in short distance
- Each eye separately
- Impedance < 5 kΩ
- Patient 20 – 30 min dark-adaption, if possible

Measurement:

- Program → ISCEV ERG (MGF)
- Enter/Load patient data
- Electrodes placement both eyes
- Impedance measurement
- 4 dark-adapted steps- right eye Ch-1, than 4 dark-adapted steps- left eye Ch-2
- go to next step
- 10min light-adaptation before next step starts
- 2 light-adapted steps- right eye Ch-1, than 2 light-adapted steps- left eye Ch-2
- go to Analysis, Save (original data)
- if needed: adjust the scale, Marker correction, smooth, blinking artifact remove
- Save (analyze data) and print out



7 ISCEV ERG BABYflash E130



Requirement:

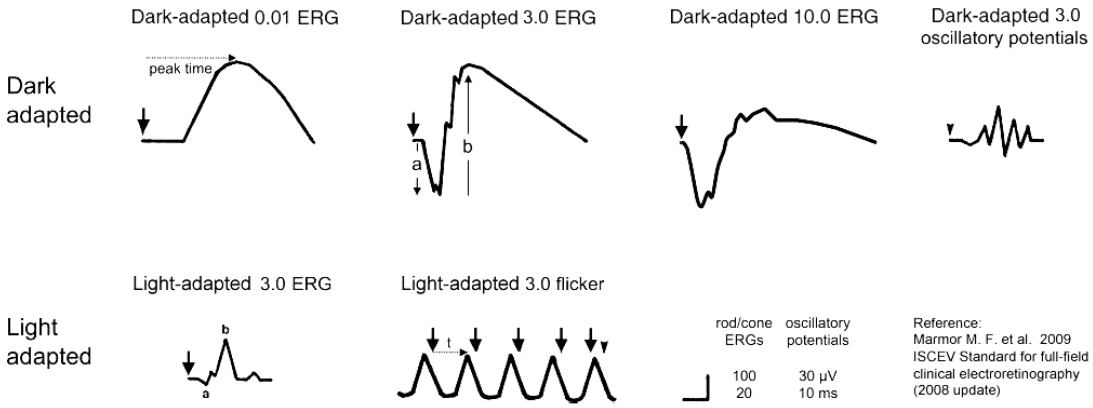
- Dark-adapted patient (scotopic conditions)
- Pupils dilated
- Right: Channel 1 / Left: Channel 2
- Active Electrodes: ERG-Thread/ERG-JET/Gold foil/HK-Loop/Neonatal skin electrodes
- Impedance < 5 kΩ
- Patient 20 – 30 min dark adapted
- Distance patient → BABYflash E130: 15 cm

Measurement:

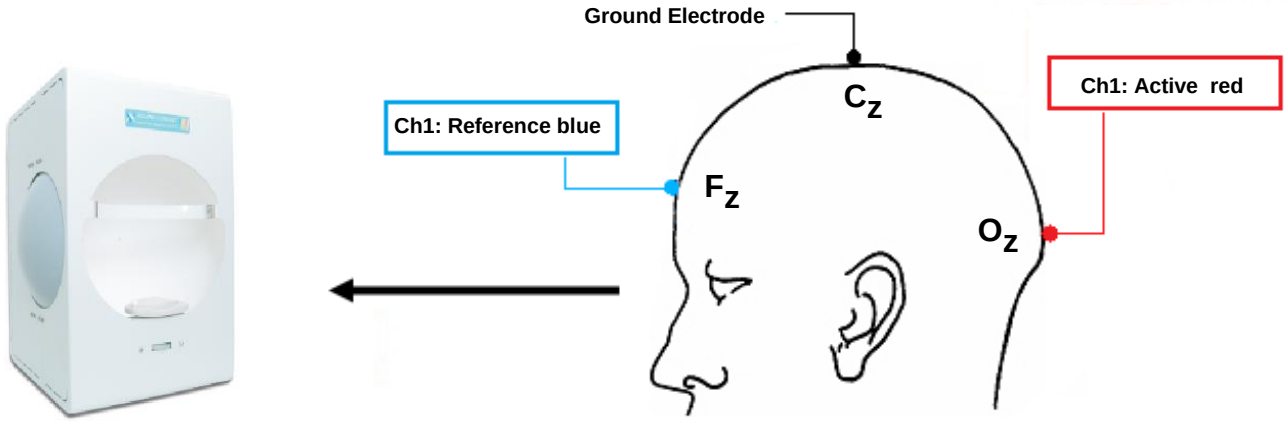
- Program → ISCEV ERG (BF)
- Enter/Load patient data
- Electrodes placement both eyes
- Impedance measurement
- 4 scotopic steps
- go to next steps by holding the BABYflash button for a few seconds
- 10min light adaptation before next step starts
- 2 photopic steps
- go to Analysis
- use Offline Averaging to take the most reproducible responses
- Save (original data)
- if needed: adjust the scale, Marker correction, smooth, blinking artifact remove
- Save (analyze data) and print out

Handling:

- Pressing the BABYflash button for a short time generates a stimulus
- Pressing down the button longer than 1 second, goes to the next step.



8 Flash VEP Ganzfeld Q450 C/SC

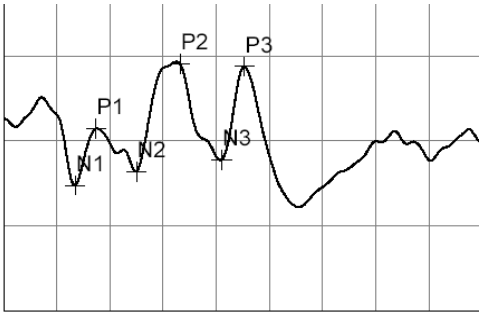


Requirement:

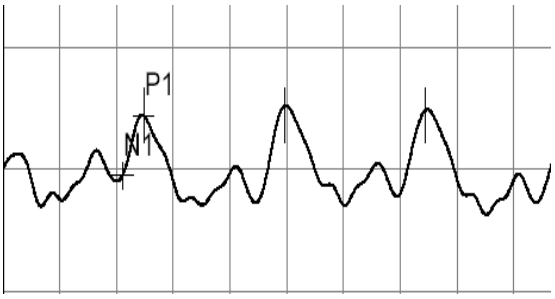
- Light-adapted patient (photopic conditions)
- Pupils non dilated
- 3 x EEG-Electrodes at channel 1
- One eye covered
- Impedance < 5 kΩ

Measurement:

- Program → Flash-VEP (GF)
- Enter/Load patient data
- Electrodes placement
- Impedance measurement
- 2 measurements right eye : 1 step check single response, 2.step steady state
- Change eye cover
- 2 measurements left eye : 1 step check single response, 2.step steady state
- go to Analysis
- Save (original data),
- if needed: adjust the scale, Marker correction, smooth
- Save (analyze data) and print out

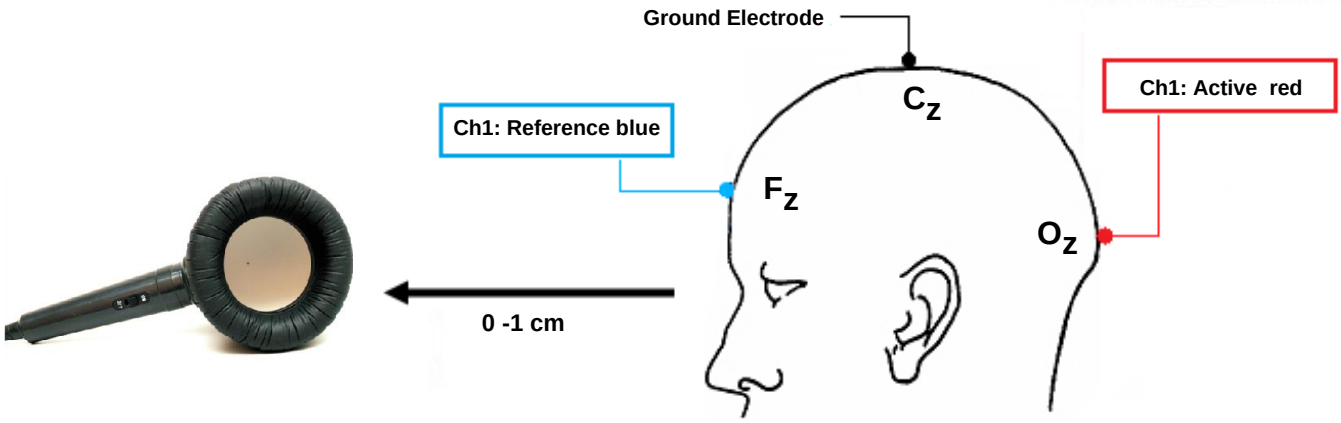


Single Response



Steady State Response

9 Flash VEP Miniganzfeld I8

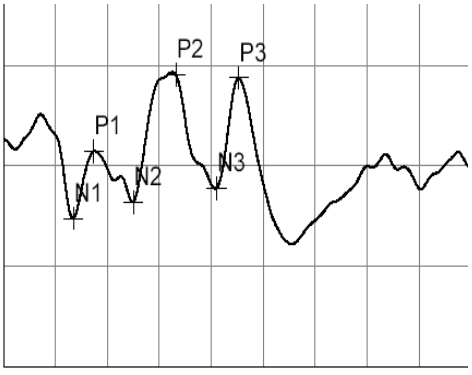


Requirement:

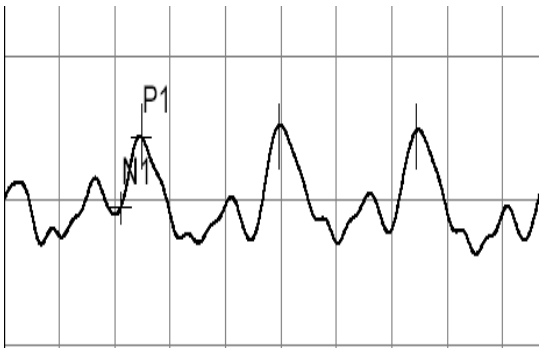
- Light-adapted patient (photopic conditions)
- Pupils non dilated
- Measurement in short distance
- 3x EEG-Electrodes at channel 1
- No visual correction
- One eye covered
- Impedance < 5 kΩ

Measurement:

- Program → Flash VEP (MGF)
- Enter/Load patient data
- Electrodes placement
- Impedance measurement
- 2 measurements right eye: 1st step check single response, 2nd step steady state
- Change eye cover
- 2 measurements left eye: 1st step check single response, 2nd step steady state
- go to Analysis
- Save (original data),
- if needed: adjust the scale, Marker correction, smooth
- Save (analyze data) and print out

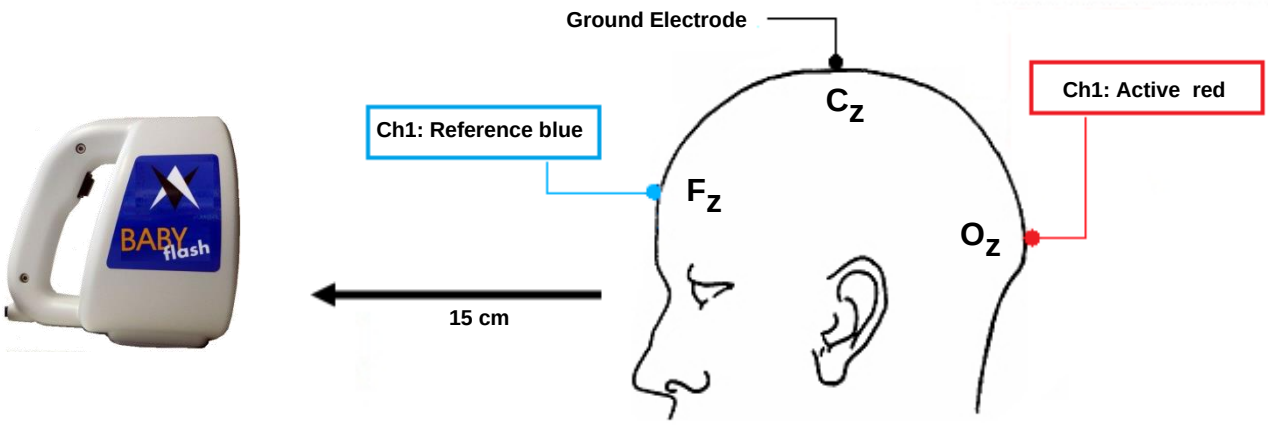


Single Response



Steady State Response

10 Flash VEP BABYflash E130



Requirement:

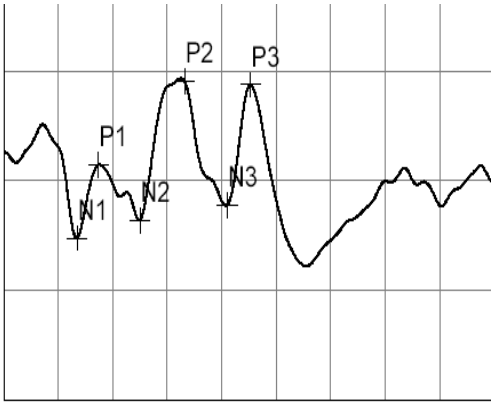
- Distance patient → BABYflash E130: 15 cm
- Light-adapted patient (photopic conditions)
- Pupils non dilated
- 3x EEG-Electrodes at channel 1
- No visual correction
- One eye covered
- Impedance < 5 kΩ

Measurement:

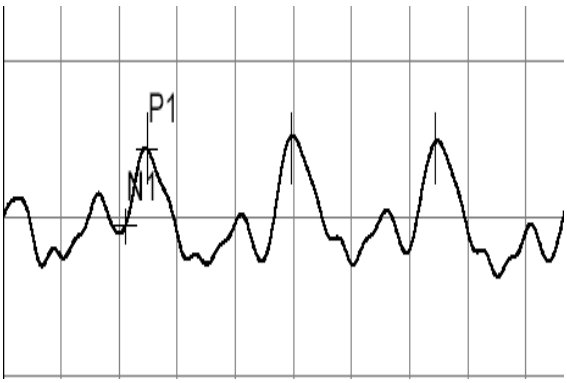
- Program → Flash VEP (BF)
- Enter/Load patient data
- Electrodes placement
- Impedance measurement
- 2 measurements right eye: 1st step check single response, 2nd step steady state
- Change eye cover
- 2 measurements left eye: 1st step check single response, 2ndstep steady state
- go to Analysis
- Save (original data),
- if needed: adjust the scale, Marker correction, smooth
- Save (analyze data) and print out

Handling:

- Pressing the BABYflash button for a short time generates a stimulus
- Pressing down the button longer than 1 second, goes to the next step.

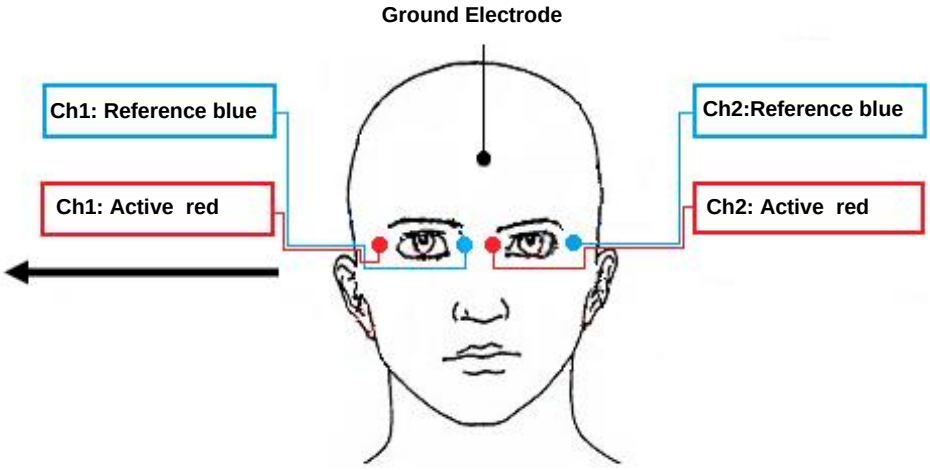


Single Response



Steady State Response

11 EOG

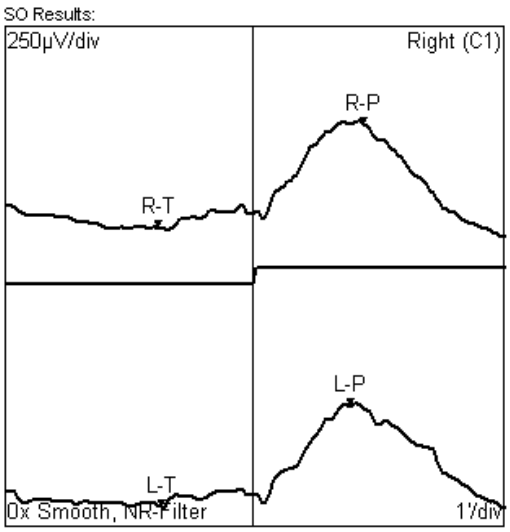


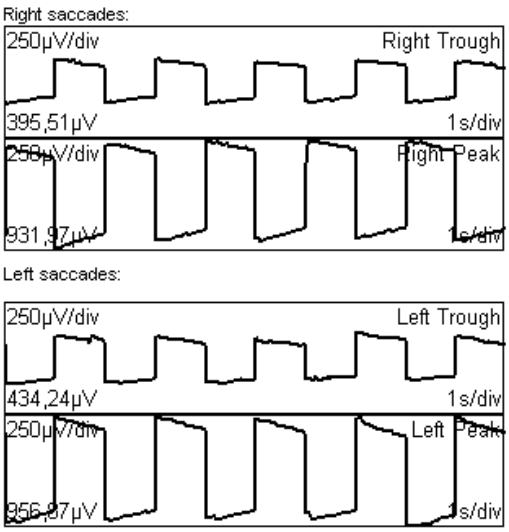
Requirement:

- 20 min normal room light adaptation before measurement
- Impedance < 5 kΩ
- 5 x EEG-Electrodes
- Patient has to move his eyes to LED, with the head fixed, patient should move eye between illuminating LEDs
- Without correction
- Dilated or non dilated eyes
- Complete dark room

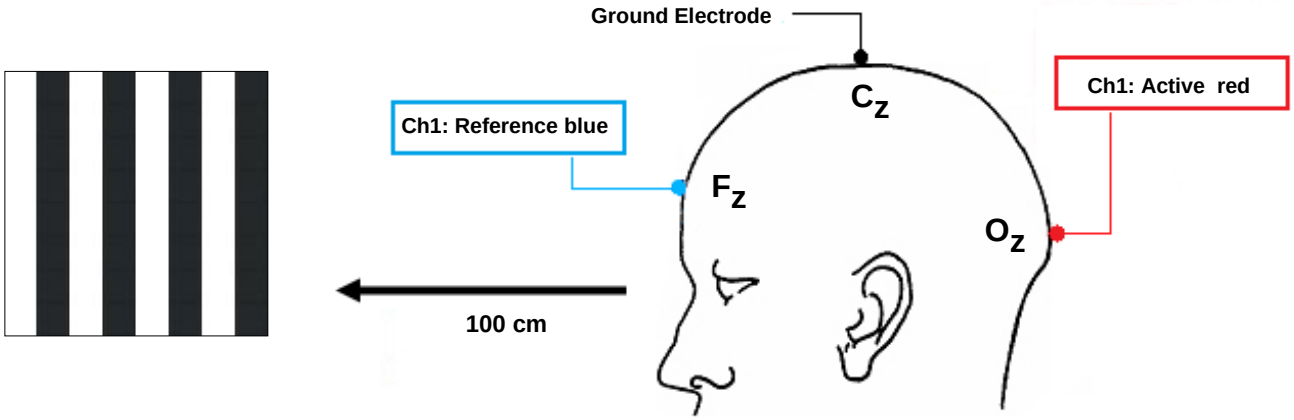
Measurement:

- Program EOG → select “Dilated pupil” or “Non dilated pupil”
- Enter patient data
- Electrodes placement
- Measure impedance
- Start measurement
- Measurement 15 min dark, then 15 min with light, runs automatically
- go to Analysis
- Set min. value marker with left mouse button and max. value marker with right mouse button
- Save (analyze data) and print out





12 Visual Acuity

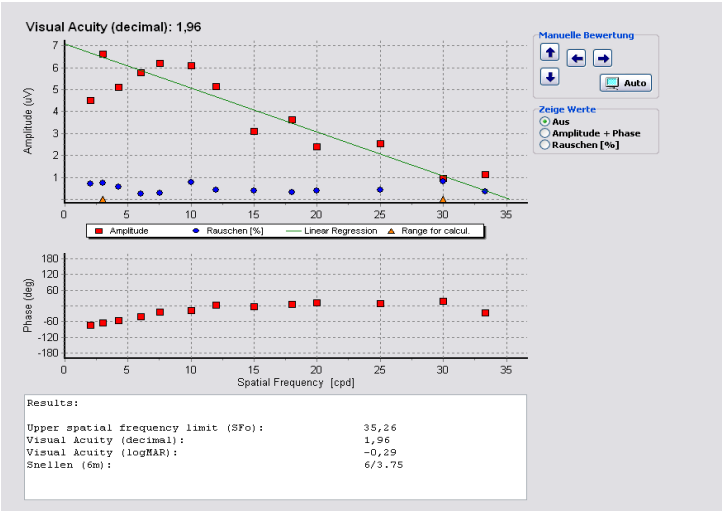


Requirement:

- Distance patient → monitor: 100 cm
- Light-adapted, (photopic conditions)
- Patient refraction/correction for 100 cm viewing distance
- 3 x EEG-Electrodes at channel 1
- One eye covered
- Impedance < 5 kΩ

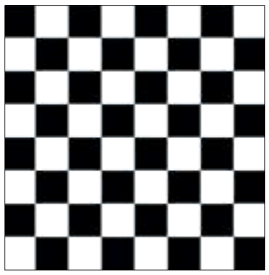
Measurement:

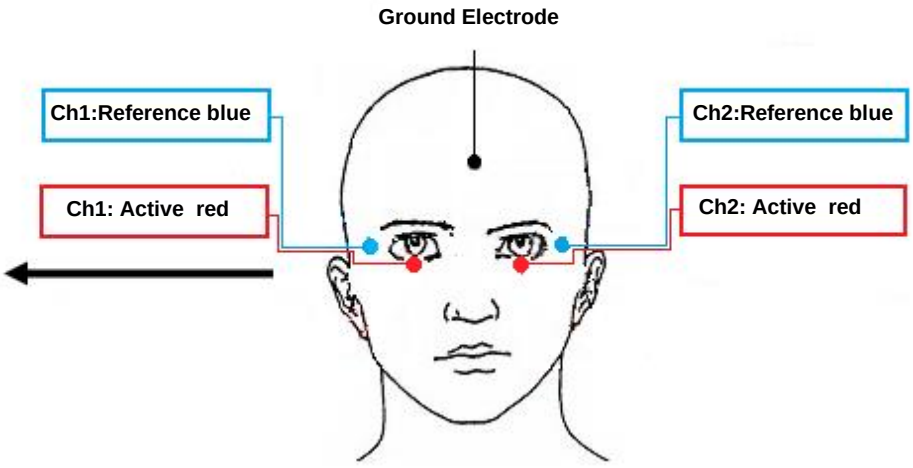
- Program Visual Acuity → „Right VisAc“ for right eye, „Left VisAc“ for left eye
- Enter patient data
- Electrodes placement
- Measure impedance
- All 13 steps runs automatically
- go to Analysis
- if needed: adjust the scale, smooth
- Save (analyze data) and print out



This examination is based on:
“Methods of visual acuity determination with the spatial frequency sweep visual evoked potential” by William H. Ridder III, Southern California College of Optometry, Fullerton, USA, Documenta in Ophthalmologica (2004) 109: 239–247 Springer 2005

13 Glaucoma Screening with PERG



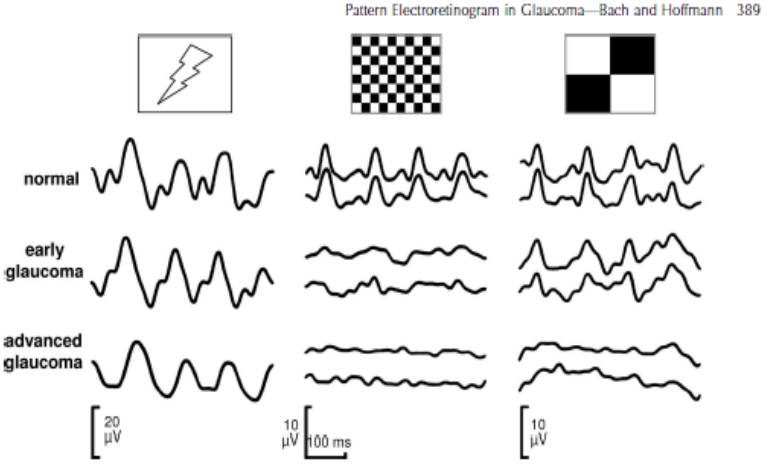


Requirement:

- Distance patient → monitor: 50 cm
- Light-adapted Patient (photopic conditions)
- Patient refraction / correction for 50 cm viewing distance
- Right: Channel 1 / Left: Channel 2
- 2 active electrodes: ERG-Thread/Gold foil/HK-Loop
- 2 reference EEG electrodes,
- 1 ground EEG electrode
- Both eyes at same time
- Impedance < 5 kΩ

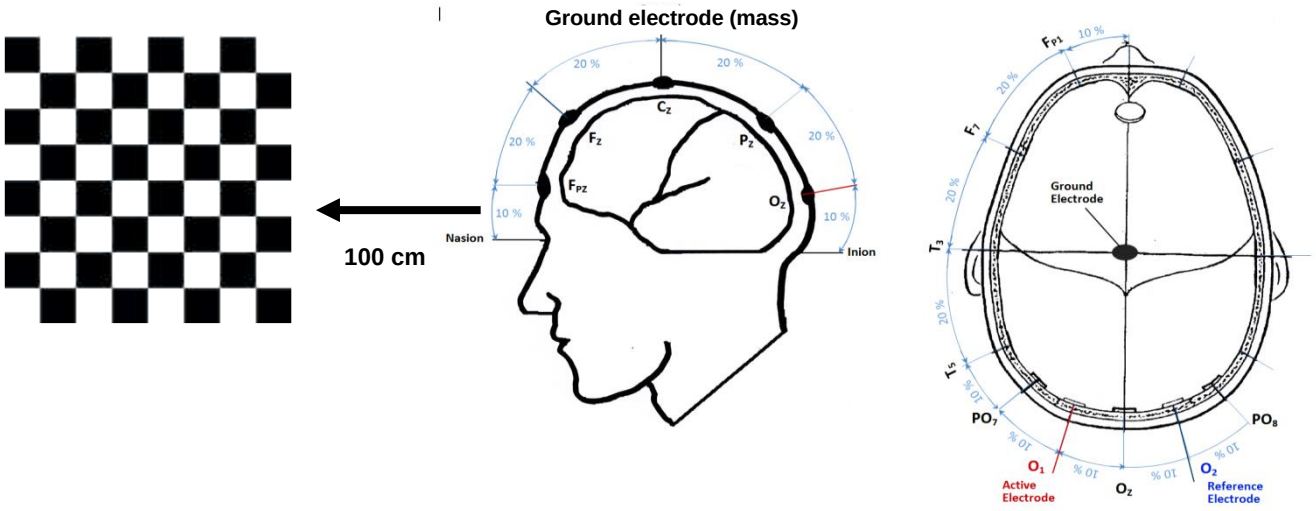
Measurement:

- Program Glaucoma Screening
- Enter patient data
- Electrode placement
- Measure impedance
- Measurements: 1. step: check size 16 deg of arc; 2. step: check size 0,8 deg of arc; result of first step is in shadow to check the reproducibility of the response
- Go to Analysis,
- Save (original data)
- if needed: adjust the scale, Marker correction, smooth
- Check the Ratio
- Save (analyze data) and print out



This examination is based on::
Michael Bach, PhD, and Michael B. Hoffmann, PhD, in OPTOMETRY AND VISION SCIENCE 1040-5488/850-0386/0 VOL. 85, NO.6,PP.386-395

14 Albino VEP (1 Channel)

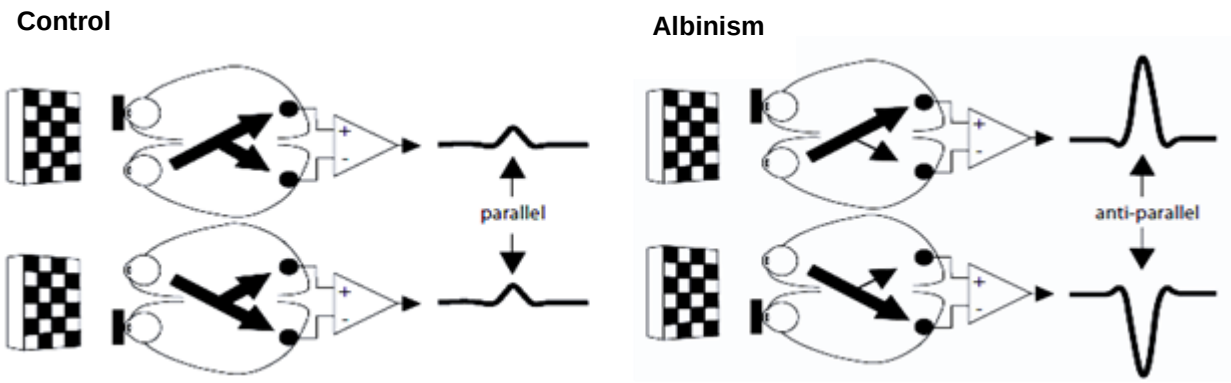


Requirements:

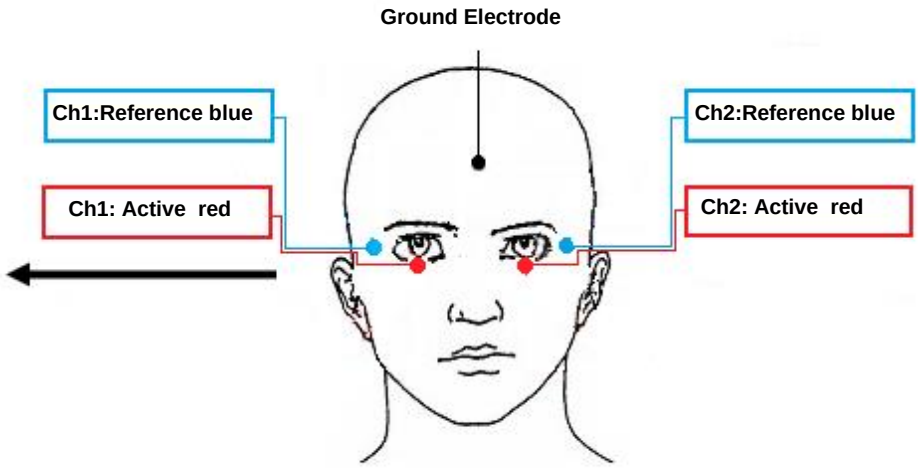
- Patient distance → monitor: 100 cm
- Normal room light (light-adapted, photopic conditions)
- Patient with a visual aid
- 3 x EEG-Gold-Cup electrodes on channel 1
- One eye covered
- Impedance < 5 kΩ

Measurement procedure:

- Programme → Albino VEP 1Ch (M)
- Input and save patient details
- Electrodes placement
- Measure impedance
- 2 x 2 measurements on the right eye (check results can be replicated if necessary)
- Switch the eye patch to cover the other eye
- 2 x 2 measurements on the left eye (check results can be replicated if necessary)
- → Analysis
- if needed: adjust the scale, Marker correction, smooth
- Save (analyze data) and print out



15 Photopic negative response ERG Ganzfeld Q450 C/SC

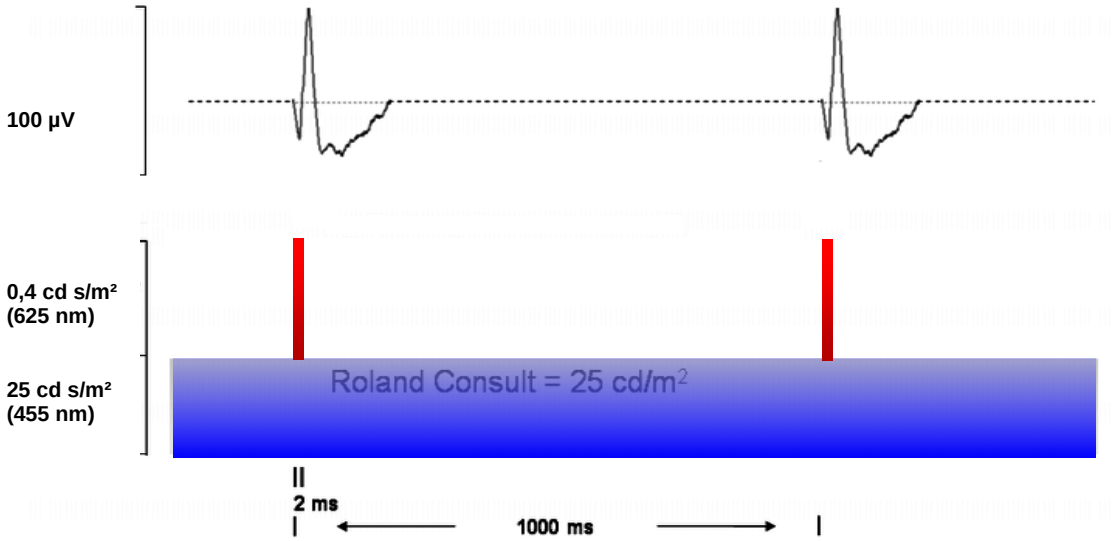


Requirement:

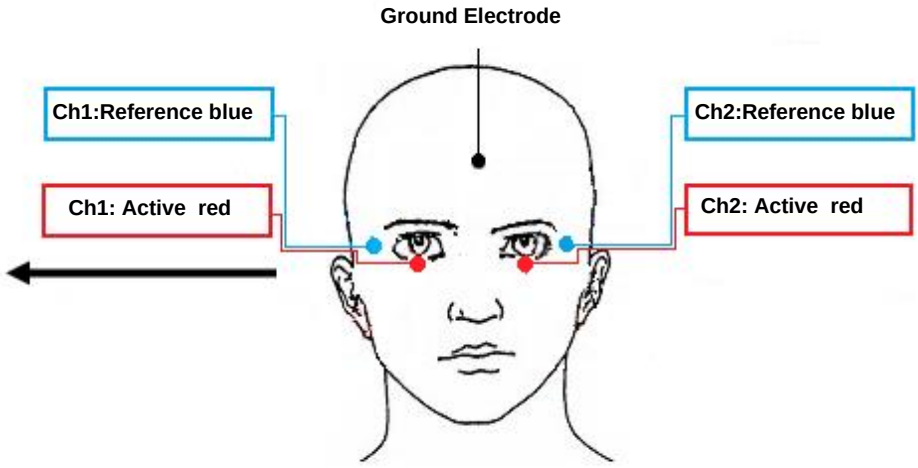
- Pupils dilated
- Right: Channel 1 / Left: Channel 2
- Active Electrodes: ERG-Thread/ERG-JET/Gold foil/HK-Loop
- No visual correction
- Both eyes
- Impedance < 5 kΩ

Measurement:

- Program → PHNR ERG (GF)
- Enter/Load patient data
- Electrodes placement
- Measure impedance
- Ganzfeld Settings: Background blue 25 cd/m², red flash 0,4 cds/m²
- 1 Measurement
- go to Analysis**,** Save (original data)
- if needed: adjust the scale, Marker correction, smooth, blinking artifact remove
- Save (analyze data) and print out



16 S-Cone ERG Ganzfeld Q450 SC

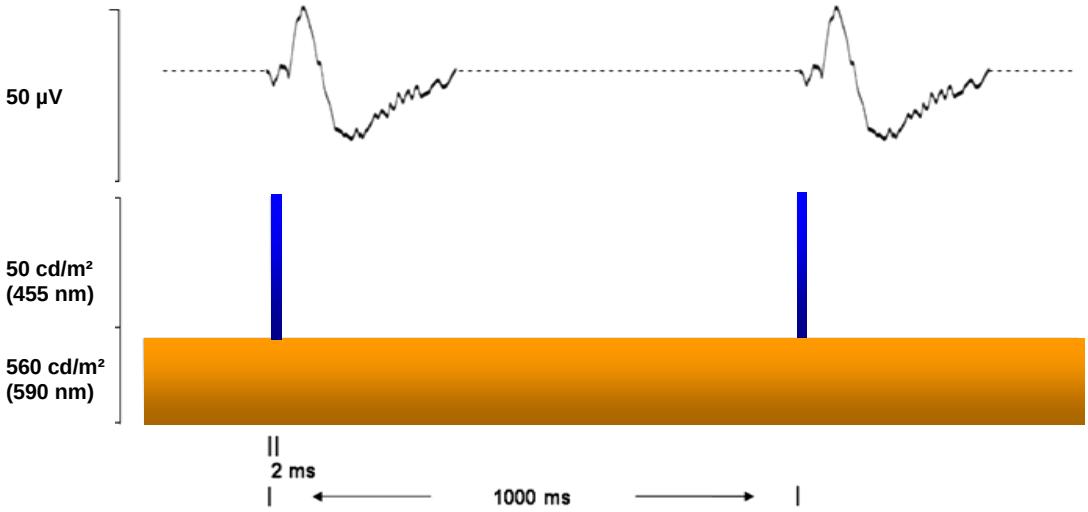


Requirement:

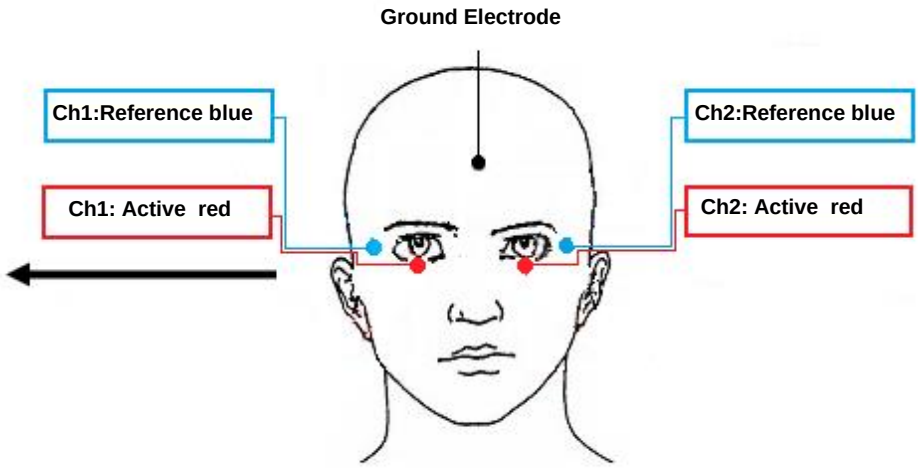
- Pupils dilated
- Right: Channel 1 / Left: Channel 2
- Active Electrodes: ERG-Thread/ERG-JET/Gold foil/HK-Loop
- No visual correction
- Both eyes
- Impedance < 5 kΩ

Measurement:

- Program → S-Cone (GF)
- Enter/Load patient data
- Electrodes placement
- Measure impedance
- Ganzfeld settings: background orange 560 cd/m², blue flash 0,1 cds/m²
- 1 measurement
- go to Analysis, Save (original data)
- if needed: adjust the scale, Marker correction, smooth, blinking artifact remove
- Save and print out



17 On-Off ERG Ganzfeld Q450 SC

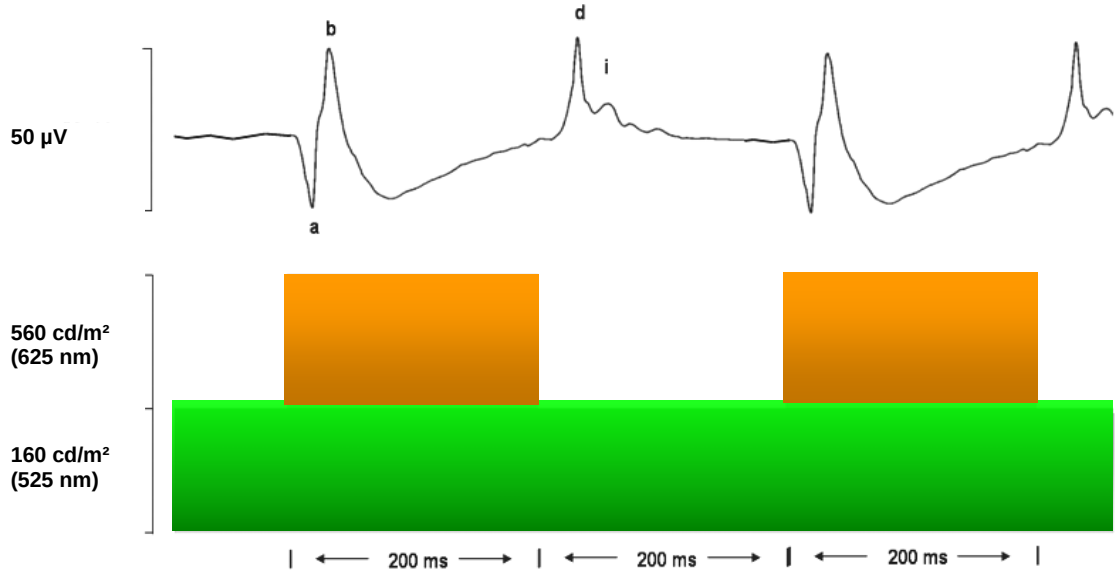


Requirement:

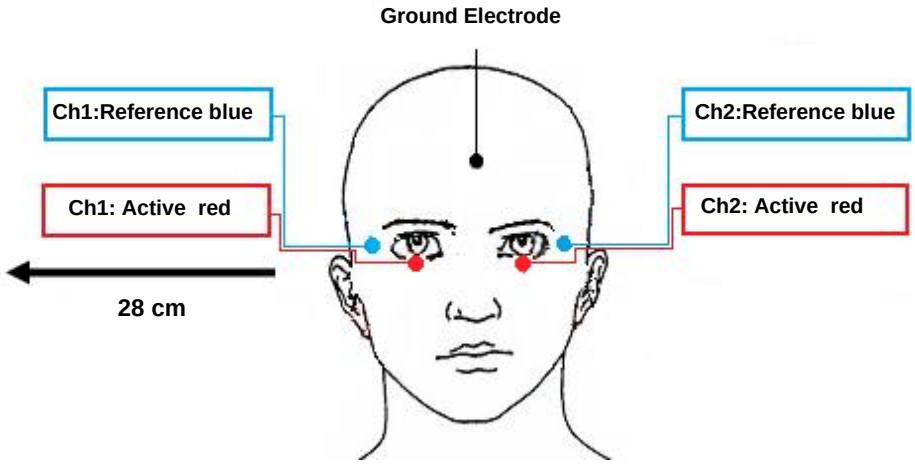
- Pupils dilated
- Right: Channel 1 / Left: Channel 2
- Active Electrodes: ERG-Thread/ERG-JET/Gold foil/HK-Loop
- No visual correction
- Both eyes
- Impedance < 5 kΩ

Measurement:

- Program → ON-OFF Resp. (GF)
- Enter/Load patient data
- Electrodes placement
- Measure impedance
- Ganzfeld settings: Background green 160 cd/m², orange Flash: 560 cds/m²,
- On / 200 ms, Off / 200 ms
- 1 measurement
- go to Analysis, Save (original data)
- if needed: adjust the scale, Marker correction, smooth, blinking artifact remove
- Save (analyze data) and print out



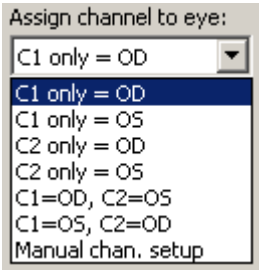
18 multifocal ERG



Requirement:

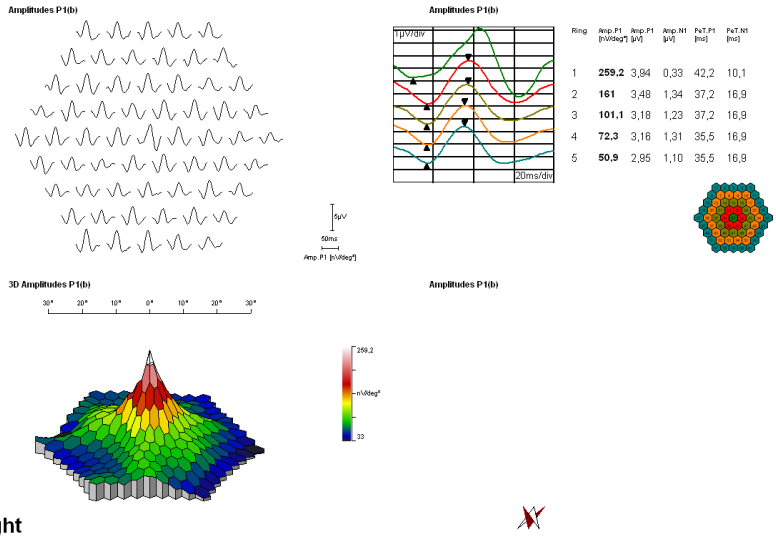
- Distance patient → monitor 28 cm (Chinrest), standard 61areas
- Light-adapted patient (photopic conditions)
- Pupils dilated with correction lenses (correct value= patient value +3 Dp.)
- Right: Channel 1 / Left: Channel 2 (according to the Channel selection)
- Test each eye separately (both eyes together is also possible)
- Active electrodes: ERG-Thread/ERG-JET/Gold foil /HK-Loop
- Impedance < 5 kΩ

Channel selcetion
Measure window



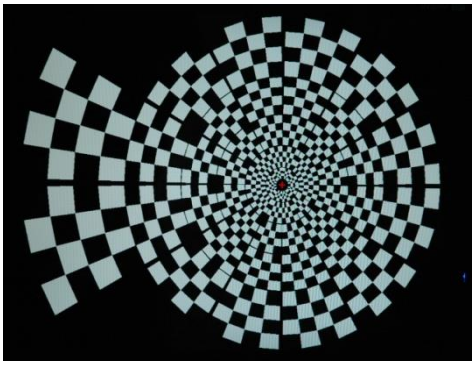
Measurement:

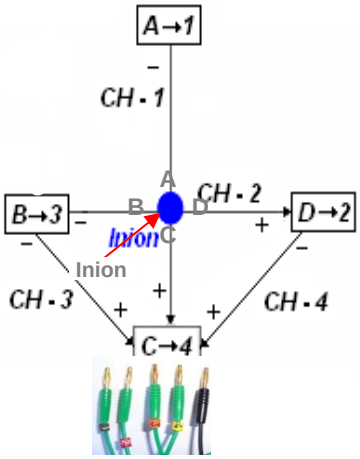
- Program mfERG → Measure
- Enter patient data
- Electrodes placement
- Measure impedance
- 8 runs (61 areas) right eye (or eye with disease first)
- Change eye, and select the correct channel
- 8 runs opposite eye
- go to Analysis
- if needed: adjust the scale, Marker correction, smooth, blinking artifact remove
- Save (analyze data) and print out
- In case the patient needs an examination pause, press the button Pause

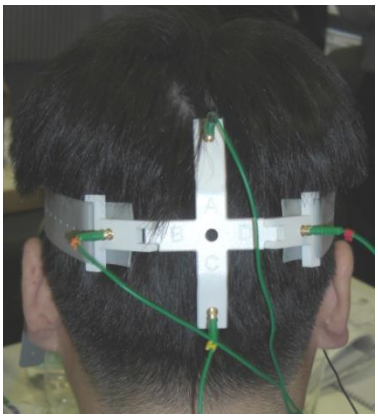


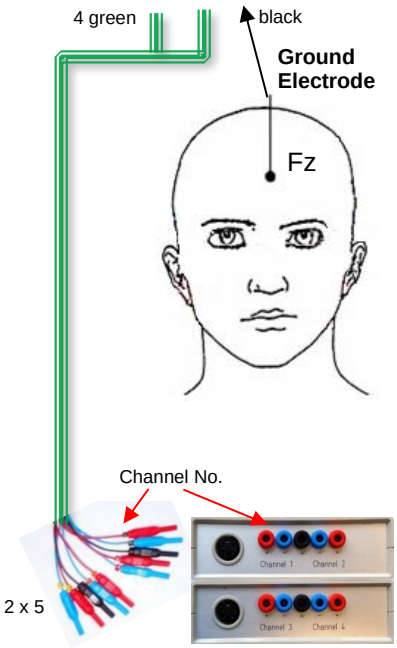
Right

19 multifocal VEP







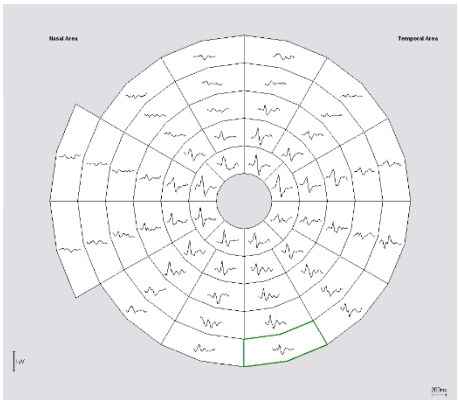


Requirement:

- use the mfVEP-Set : cross, cable 5/10 and Ag/AgCL electrode
- 1 ground electrode (black) on the forehead position Fz
- 4 active electrodes (green 1…4) on the cross
- Distance patient → monitor 28 cm (Chinrest)
- Patient refraction/correction for 28 cm viewing distance
- Photopic conditions
- Pupils dilated with correction lenses
- One eye covered
- Impedance < 5 kΩ

Measurement:

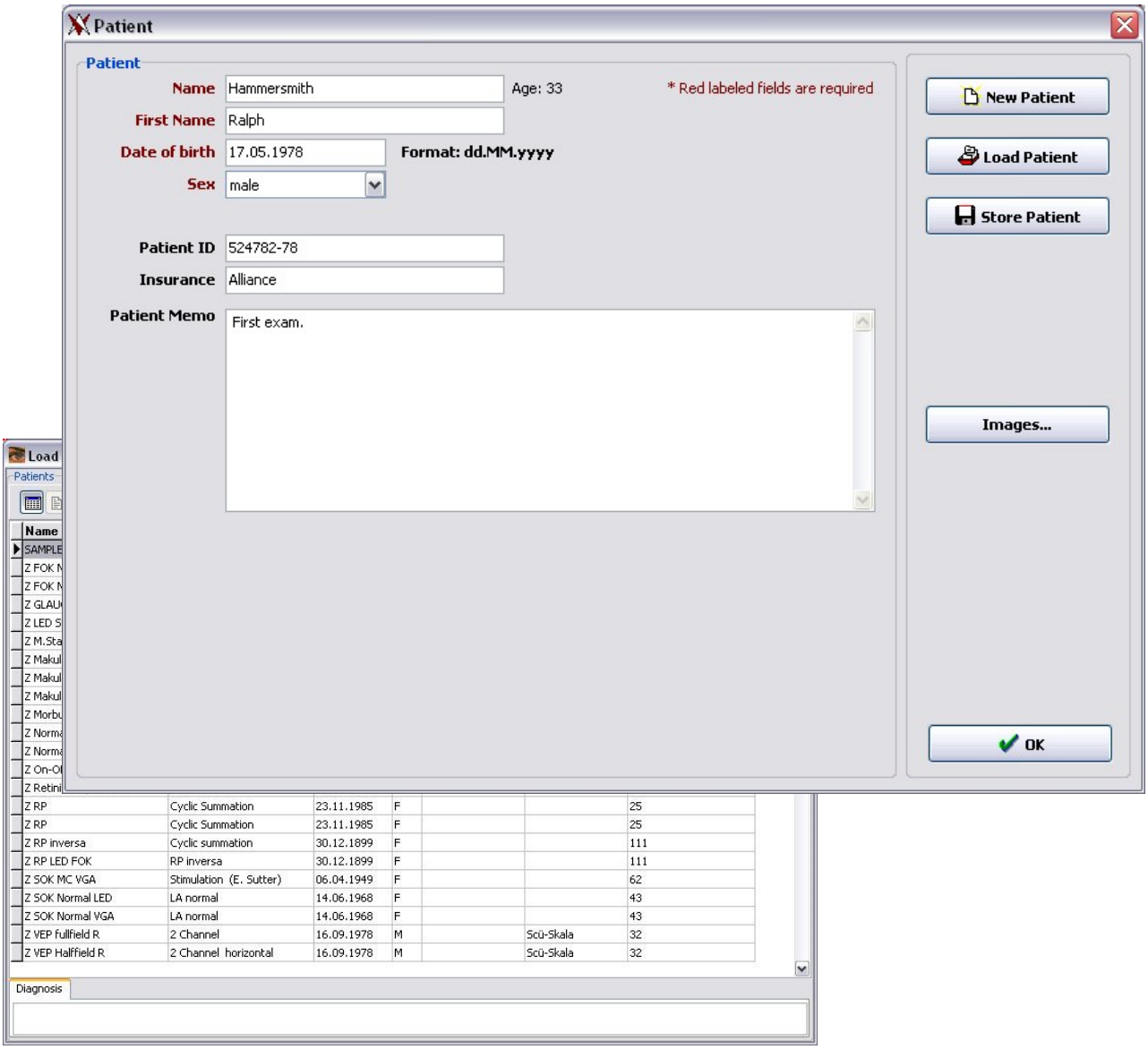
- Program mf VEP
- Enter patient data and click on „Take“
- Set controls
- Electrodes placement
- Measure impedance
- Start measurement
- Go to Analysis
- Save (analyze data) and print out
- In case the patient needs an examination pause, press the button Pause



Color	Electrode position	Line number
Brown / 1	A	1
Red / 2	D	2
Orange / 3	B	3
Yellow / 4	C	4

Channel	reference	active
1	C	A
2	D	B
3	C	B
4	C	D

20 Patient Window



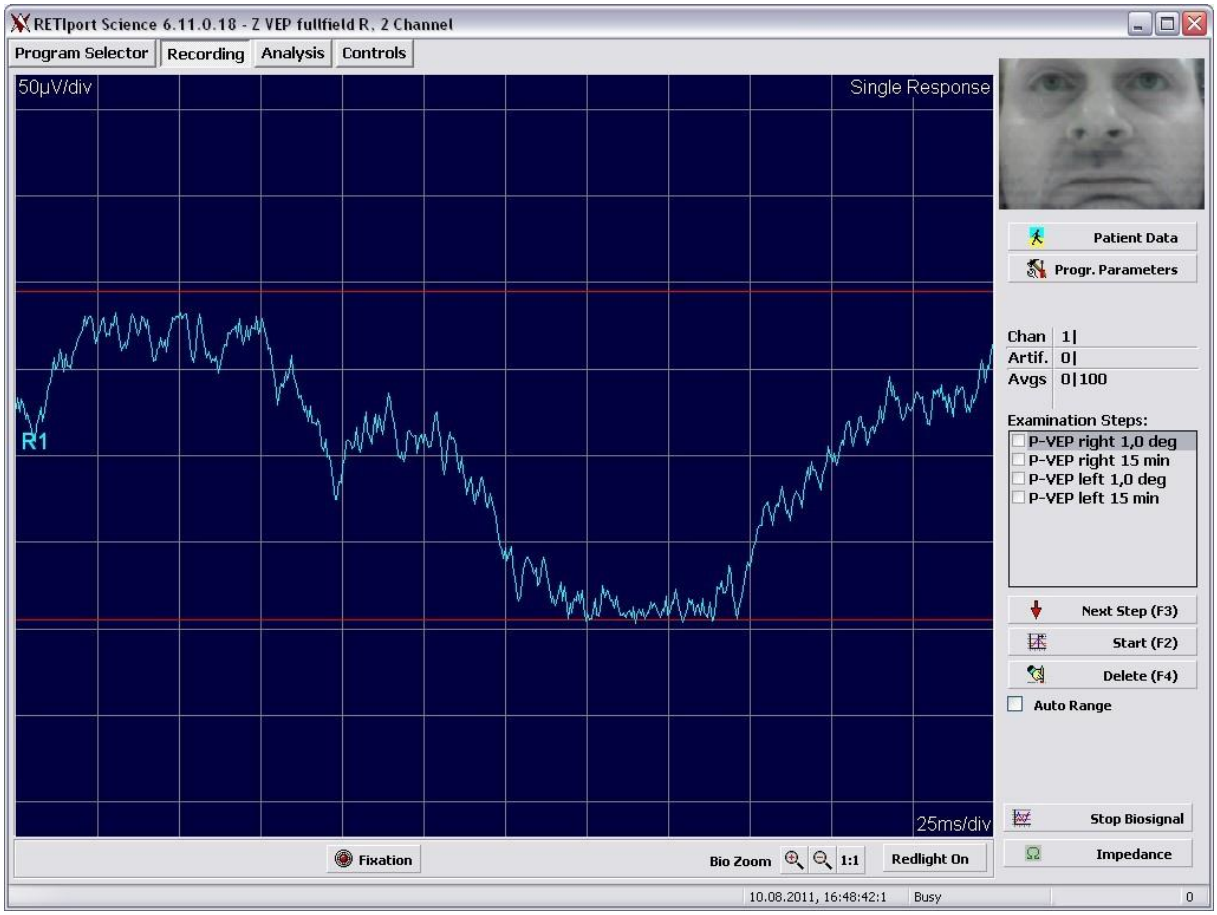
New Patient:

- click on **New Patient**. This will clear the data fields.
- insert the patient data. The red labeled fields are required.
- click on **Store Patient**. This will store the patient data into the database
- set the examination parameters for the patient.
- click on **OK** to close the window and start the measurement

Load Patient:

- click on **Load Patient** to open the database window.
- select a patient.
- Click on **OK** to close the window and start the measurement

21 Recording Window



Preparations:

- click on **Impedance** to check the impedance of the electrodes
- click on **Start Biosignal** to check the signal

Recording:

- click on **Start** or press **F2**
- the first step will run
- after the first step the recording stops
- click on **Next Step** or press **F3** to select the next step
- repeat this procedure for all steps

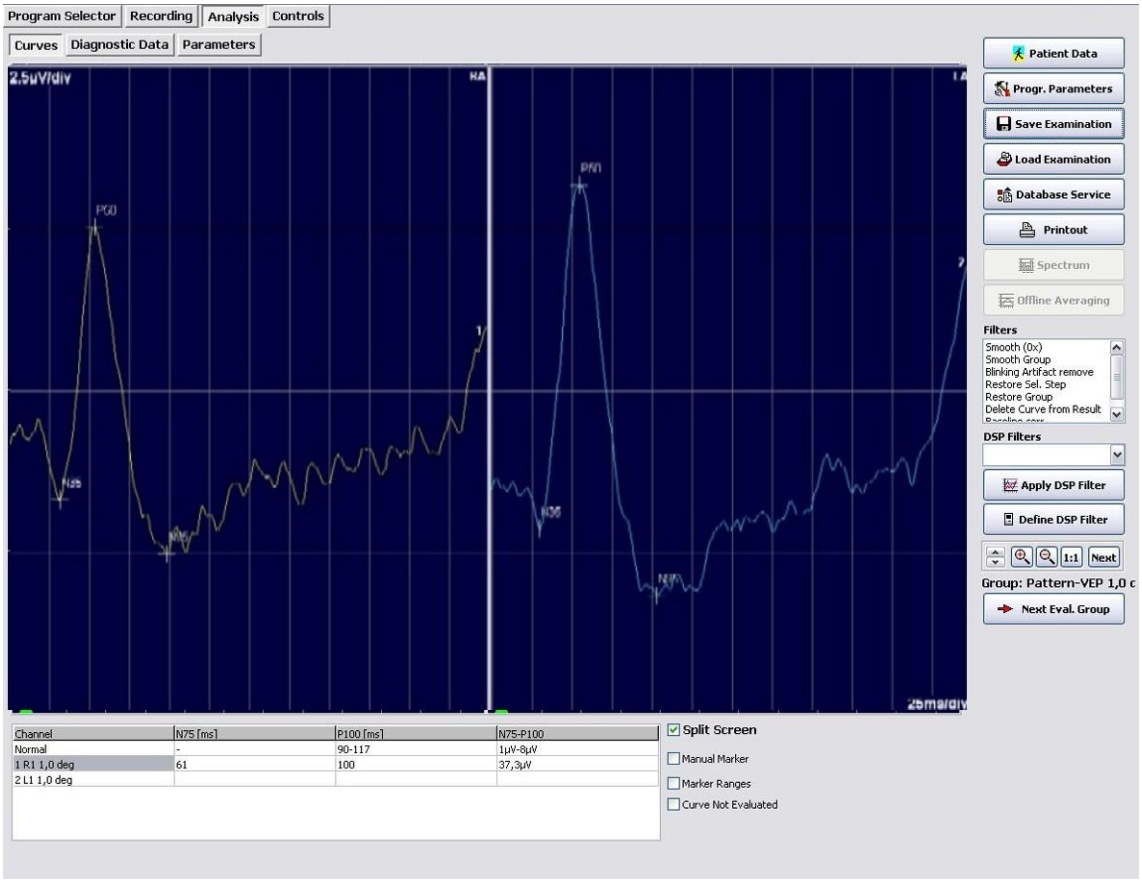
Delete:

- select the step in the **Examination Steps** window
- click on **Delete** or press **F5**. This will delete the selected step only
- click on **Start** to run this step again

Artifact rejection:

- if the bio signal is higher than 95% of the amplifier input range, the system detect this signal as an artifact, and the artifact counter is increasing
- the system starts again, if the response is lower than the 95% the signal will except and does to the average calculation, the average number is increasing

22 Analysis Window



Save examination:

- click on **Save Examination**. Afterwards confirm the message box.

Load examination:

- click on **Load Examination**
- select a patient in the upper part of the window
- select a examination in the lower part of the window
- click on **OK** to confirm your selection

Set marker:

- move the mouse in the near of a marker
- press the left mouse button and hold
- move the marker to the new position
- release the left mouse button
- the marker values are displayed together with normal values in the lower table
- the checkbox **Curve Not Evaluated** disables the marker for the selected curve

Next Group:

- click on **Next Eval. Group** to switch between the different groups of a program

23 Print out

Settings:

- select a printer
- select groups for printing
- set the check box **Colored** for a color print
- set the check box **Anonymous Print** for a print without the patient data

Preview:

- click on **Preview** to see a preview of the print

Print out:

- click on **Print Out** to make print with the chosen settings

Print to file:

- click on **Print To File** to save the Printout as PDF, BMP, GIF or JPG on hard disk

Export:

- click on **Export CSV** to export the data as text file

24 Cleaning Instruction

24.1 Cleaning and Disinfection

The device and its accessory parts, especially the accessory parts which come into contact with the patient, should be cleaned and disinfected on a regular basis. Surfaces should be covered to prevent germs from being transferred. The device should be switched off and disconnected from the power supply at all poles and removed from the patient before it is cleaned or disinfected.

The surfaces of the device and its accessory parts should be wiped cleaned, as recommended by the Robert Koch Institute (RKI). This process should be carried out with a fresh, damp cloth which has been sprayed with a recommended cleaning/disinfecting agent. Kohrsolin extra is a recommended cleaning/disinfecting agent produced by the BODE Chemie company.
Please observe the specifications, safety information and the disposal instructions provided by the manufacturer of the cleaning/disinfecting agent.
Please follow the instructions on the manufacturer's packaging insert when handling and cleaning the electrodes. Single-use electrodes should be disposed of as medical waste after they have been used.

25 Disposing of old equipment

After the device has been taken out of service, the user/operator should clean and disinfect it, along with its accessory parts. The product should be taken out of service by the manufacturer when its service life has come to an end, or if it has been damaged beyond repair. The manufacturer is responsible for disposing of the device in an environmentally friendly manner by repossessing the product.

If the device is disposed of incorrectly, waste and residual materials may pose risks for the environment and this should be avoided. The RETI-port/scan 21, including its accessory parts, do not belong in household or bulk waste. The WEEE registration number for Roland Consult Stasche & Finger GmbH is: WEEE reg. no. DE 52140632.

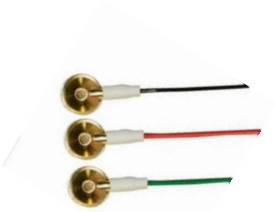
Please make yourself aware of your country's current regulations on disposal.
You can also find information on how to dispose of products correctly by contacting your supplier or the local authorities in your city or municipality.

26 Help and Support

In Case of trouble contact first your distributor please or Roland Consult:

Support Hotline: +49 3381 890 2985
Roland Consult Stasche & Finger GmbH
Heidelberger Str. 7,
14772 Brandenburg an der Havel,
GERMANY

27 Accessories - Pastes and Electrodes

Designation	Image
Standard consumables and disposables	
Gold Cup Electrodes	
Sterile ERG Thread Electrode (Single use)	
Sterile ERG Thread Patient lead	
NuPrep skin preparation gel	
TEN 20 electrode, adhesive and conductive paste	

Designation	Image
Optional consumables and disposables	
ERG-Jet Electrode (Single use)	
Neonatal Skin Electrode (Single use)	

28 History

Rev.	Valid from	Valid to	Remarks
24	2023-04-24	2024-04-14	• Changes in Chapter 1: “1.3” added • Changes in Chapter 2: “2.2.13” and “2.5.14” added • Changes in chapter 27: “Standard consumables and disposable” and “Optional consumables and disposables” added
25	2024-04-15		• Change DTL to Sterile ERG Thread Electrode • Delete HK Loop