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1. News

New in 5.2.0 (Android)

Removed background location access permission under Android (was never used)

New in 5.6.4 (iOS)

We have added the new eSense Muscle (2-channel EMG sensor) to the app!

We have fixed a few more small bugs in this version. Errors in Italian and French language and in unlimited time measurements in eSense Pulse and eSense Respiration.

2. Delivery contents eSense Temperature



Delivery contents eSense Temperature

- Mindfield® eSense Temperature Sensor
- 1 Velcro electrode
- eSense app from Mindfield (from the App Store, Google Play or Amazon Appstore)

Delivery contents eSense Temperature economy set

- Mindfield® eSense Temperature Sensor
- 1 Velcro electrode
- eSense app from Mindfield (from the App Store, Google Play or Amazon Appstore)
- **Temperature sensor finger clip**
- **Magic blue smart bulb V2**
- **roller adhesive plaster**

Notes

If you would like to have a longer cable between the eSense and your smartphone or tablet, you can extend the original cable of the eSense. [More about this in our article.](#)

Some newer iOS devices without the classic 3.5mm headphone jack need an adapter. [More about this in our article.](#)

3. Technical Data

Sampling frequency: 5 Hz (5 measured values per second).

The measured values are saved for exporting the data and can be exported as a CVS file in the app.

Resolution of the measured values: 18bit, rounded to 2 decimal places, i.e. 0.01 ° C in the data export without rounding

Absolute measurement error without calibration: ± 0.5 ° C (applies from 15 ° C to 35 ° C)

Recommended measuring range: 15 ° C to 35 ° C

Maximum measuring range: 0 ° C to 85 ° C

4. EC Declaration of Conformity

in accordance with the following directive(s):

The Electromagnetic Compatibility Directive (EMC) (2004/108/EG)

RoHS – Restriction of (the use of certain) hazardous substances (2011/65/EU)

WEEE Waste Electrical and Electronic Equipment (2002/96/EG & 2008/34/EG)

The manufacturer

Mindfield Biosystems Ltd.

Hindenburgring 4

D-48599 Gronau

Germany

WEEE-Reg.-Nr. DE 24465971

hereby declares that the following product:

„Mindfield® eSense Temperature“

complies with all applicable essential requirements of the directives.

It is in conformity with the applicable requirements of the following documents:

DIN EN 60950-1 Information technology equipment – Safety – Part 1: General requirements (2011-01)

DIN EN 55022 Information technology equipment – Radio disturbance characteristics – Limits and methods of measurement (2008-05)

DIN EN 55024 Information technology equipment – Immunity characteristics – Limits and methods of measurement (2011-09)

Place: Gronau

Date: 19th of August 2017

Niko Rockensüß, Managing Director



According to legal requirements, the Mindfield eSense has to be recycled as electrical waste. WEEE-Reg.-Nr. DE 24465971

5. Contact

Mindfield® Biosystems Ltd. · Hindenburgring 4 · D-48599 Gronau

Tel: + 49 (0)2565 406 27 27 · Fax: + 49 (0)2565 406 27 28 · E-Mail:
info@mindfield.de

If you have questions about our products or need support, please do not hesitate to contact us! To avoid inappropriate advertising and spam, we ignore messages with specific content. We therefore ask you to not write links in the contact form. If this should be necessary, please write us an email.

Please do not send unsolicited packages to us. Unfree returns will not be accepted and cannot be processed.

6. Skin temperature in general

The temperature at the surface of the skin changes according to blood circulation through body tissue. The small blood vessels (arterioles) crossing through the tissue are surrounded by fibers of smooth muscle, which are controlled by the sympathetic nervous system.

In a state of increased exertion, excitement and stress, these muscle fibers contract, causing a stenosis of vasculature. This leads to a reduction of skin temperature, since blood circulation through the tissue is reduced. In contrast, in a state of relaxation, the musculature is also bound to relax, causing the vasculature to expand. Hence, the skin temperature rises.

Mental stress often leads to a lower peripheral perfusion and a decrease of skin temperature at the hands, caused by increased activity of the sympathetic nervous system. This has a sense of evolution because tension and anxiety originally served the preparation for an impending flight or an attack. As a result, as much blood as possible is available in the working muscles (upper arms, thighs and torso), which is achieved by the narrowing of vessels in the hands, feet and forearms.

We all know a time in our lives when we got wet hands. For example, think of a speech that you gave in front of an audience or a job interview panel. If you were anxious in those situations, can you remember having cold (and sweaty) hands?

This physiological stress reaction can be useless or even harmful in many contexts in modern society (e. g. mental exertion, worries, psychosocial stress, and anxiety disorder). A conscious control of physiological stress can help you react in a more relaxed and efficient manner to many situations. Biofeedback is an established way to learn this kind of control!

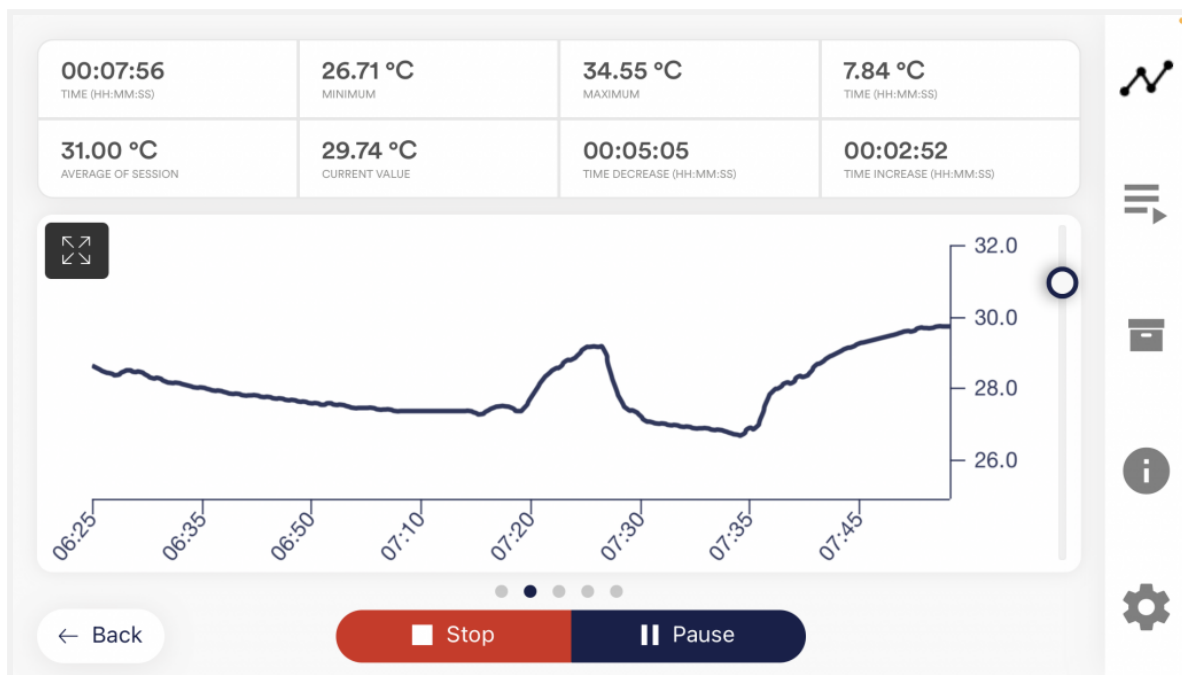
We combine the measurement and feedback of skin temperature in the eSense app with guided relaxation exercises, including guided meditations, and offer you an overall experience that goes beyond biofeedback. In addition to extensive feedback variants, you have the option of evaluating your measurements with many statistics, documenting your progress and exporting the recordings as CSV and PDF files. Your data belongs only to you! You have full access to the raw data.

7. Skin temperature and biofeedback training

To reduce stress and its vegetative symptoms, biofeedback-training can be conducted by striving for a **rise** of the skin temperature.

Biofeedback with skin temperature is mainly applied in relaxation exercises. It's easy to handle and learn. Experience with this technique shows a high rate of success and improvement of subjective well-being. In the therapeutic field, skin temperature biofeedback is often used in migraine and chronic pain. If you suffer from a serious disorder or medical condition, always consult a professional physician or therapist, and do not attempt to treat yourself. Biofeedback training is not an officially recognized medical procedure. Hence the eSense Temperature is not a medical device and may only be used for stress reduction training.

A particularly easy and effective biofeedback method is hand warming training. It works with the eSense Temperature sensor attached to a finger, or simply held between the thumb and index fingers. You will learn through direct feedback to intentionally raise the temperature of your fingers, thus increasing perfusion in your hands. The biological temperature sensors in our hands give us only an inaccurate impression of our skin temperature. We can just roughly decide between warm, cool, cold and so on. The real-time feedback with the precise eSense Sensor will give you much more precise information on the perfusion and temperature of your hands, enabling you to learn conscious control of these parameters and your relaxed well-being.



Example measurement curve eSense temperature with peaks in temperature because of several stressors and relaxation exercises

Hand warming training aims to show a person their skin temperature and help them get direct control over the blood circulation in their outer limbs.

A biofeedback training consists of four training stages. Schedule for the first training about 60 to 90 minutes of free time in which you can conduct the training undisturbed and flexibly.

It must also be differentiated between different types of stress. There is “bad stress,” distress, and there is “good stress,” eustress. You need to ask yourself if you are stressed because you feel overwhelmed and are angry about something or because you are upset. Or are you “stressed” because you are full of drive and are excited? In both cases, the eSense Skin Response shows elevated values, but

in the first case only, this is to be judged negatively. In the second case, you can simply enjoy and use the active or euphoric state.

8. Preparation and start of the app

Create the conditions needed for a successful training:

- find a quiet room (mobile phone etc. switched off)
- appropriate temperature of 20-22° C (68-72° F)
- convenient seating
- comfortable clothing

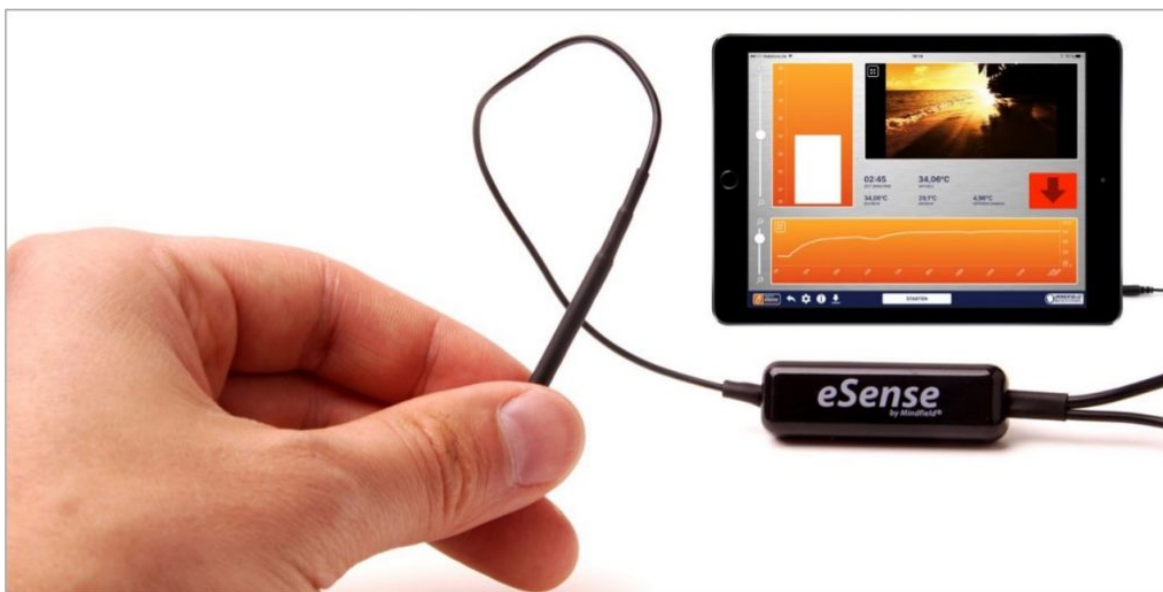
As skin temperature depends also on ambient temperature, you should try to perform each training session **under similar ambient conditions**.

You should get **accustomed** to the ambient temperature for at least five minutes (acclimatization), letting the training start while your body is in a relaxed and constant state. This phase of acclimatization can already raise your hand temperature by several degrees.

In comparison with other biofeedback techniques, you will **need fewer sessions** for a reliable success. 6-10 sessions should be sufficient. To keep focused throughout the entire session, you should limit each session's length to about 30 minutes. If you start feeling tired while training, you should shorten your sessions and practice more often instead.

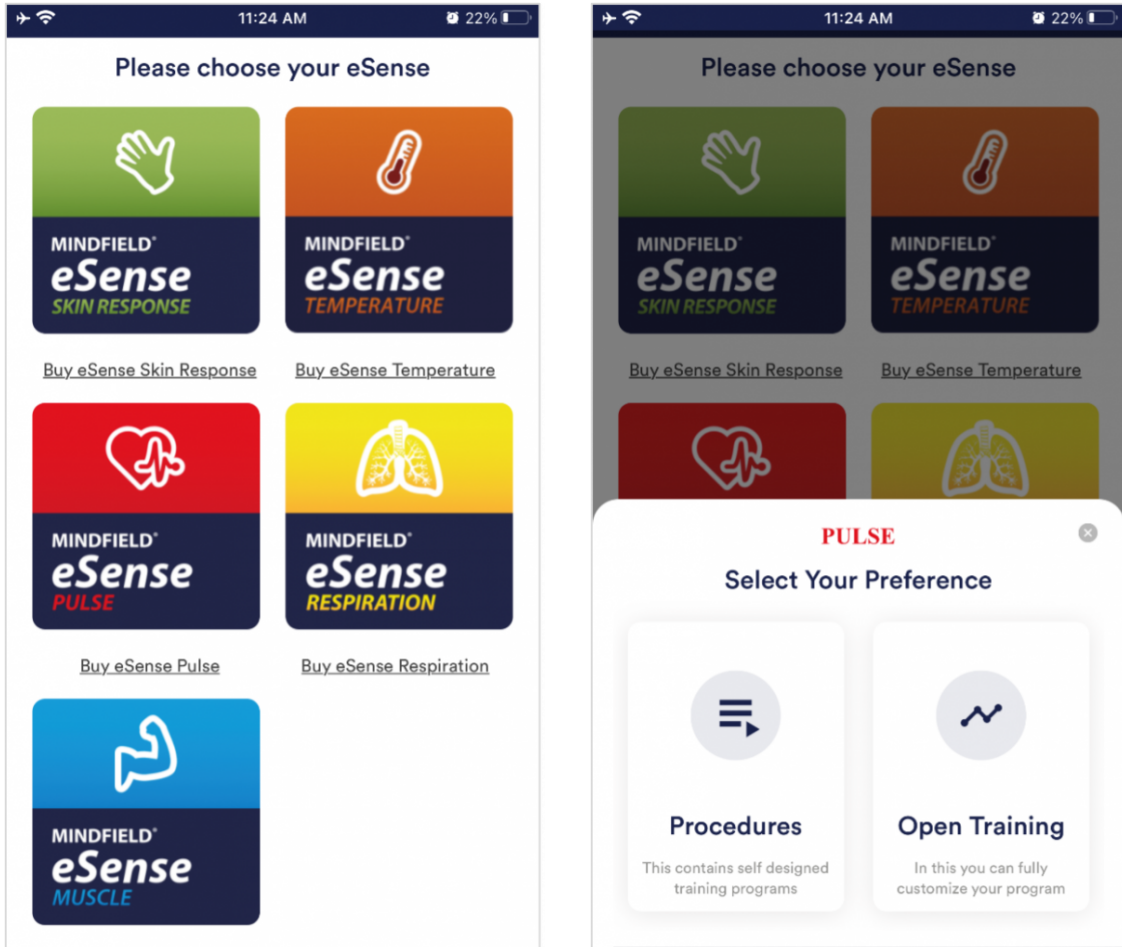
Fixation of the sensor

Use the accompanying tape (or a fabric tape of your choice, e.g. Leukoplast™) to attach the temperature sensor to your index or middle finger. Plastic tape works as well, although it's less comfortable because it's airtight and can make your fingers perspire.



eSense Temperature in use with a tablet

The next step is to start the app. At the beginning you can choose between a free training and a procedure. We recommend that you start with a procedure. We present you both below.

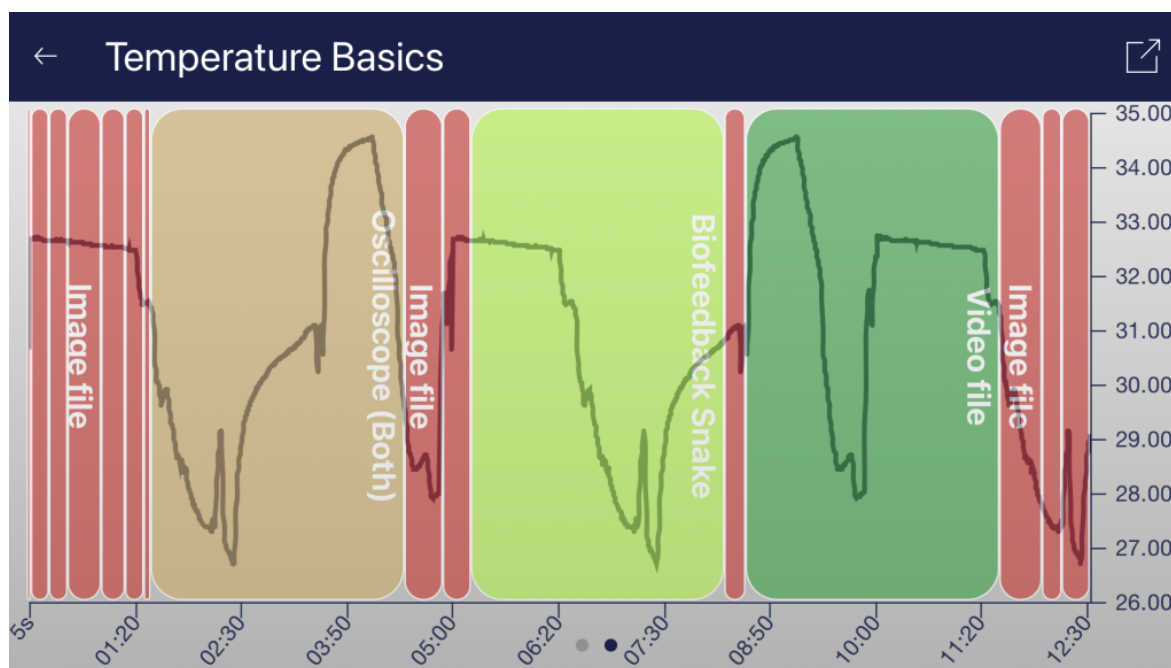


Choose between procedure or open training after starting the app

9. Procedures

A procedure consists of several assembled modules. With this new feature, you can build the perfect individual relaxation guide, do a stress test, use it for pre-defined biofeedback training or use it for research.

There are many possibilities. During a procedure, your skin response or temperature (depending on the eSense sensor you have) is recorded, and after the recording is made, you can see your results for each module and in total.



Overview after a procedure

We suggest you **test the demo-procedures** which are included in the app. Those will give you a guided overview of the different modules and functions of the procedures.

The included procedures are also protected by a password in order that those can't be edited or deleted by accident. You can any time create a copy of those procedures without a password and change it as you wish.

We also explain in detail how you can create and edit your own procedures in the chapter procedures settings.

10. Open Training

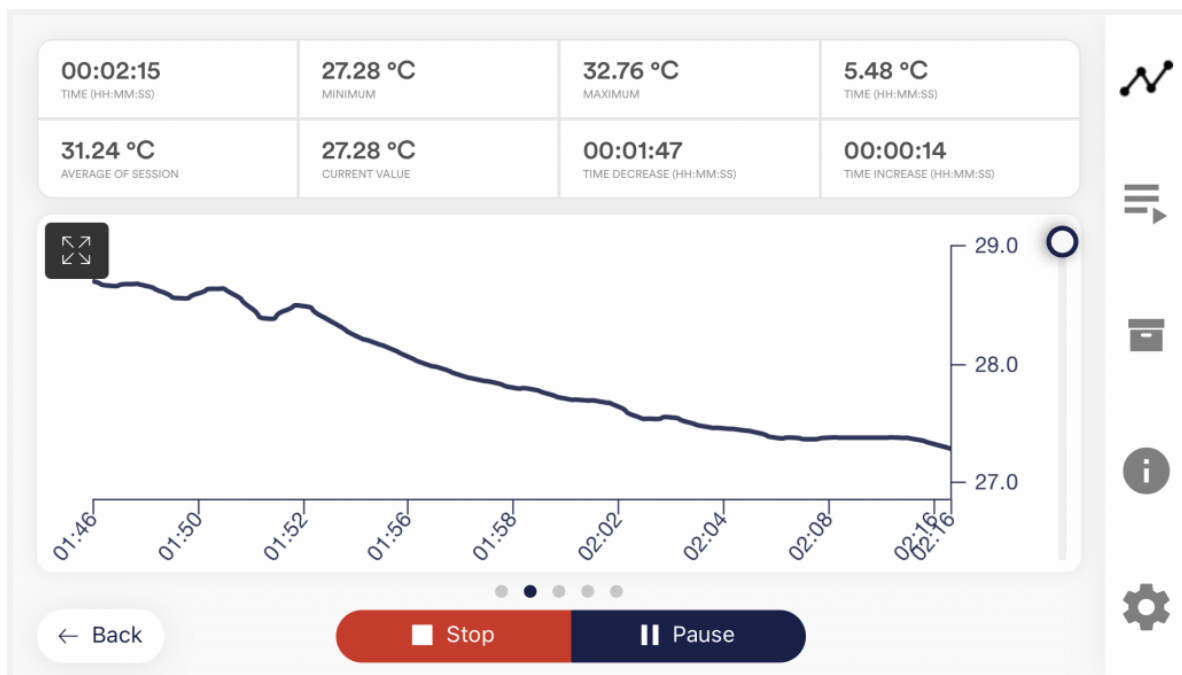
As a second option you can also conduct an open training. This is compared to the procedures a bit more complex. We therefore explain a typical open training session which consists of 4 training phases.

Preparation and start

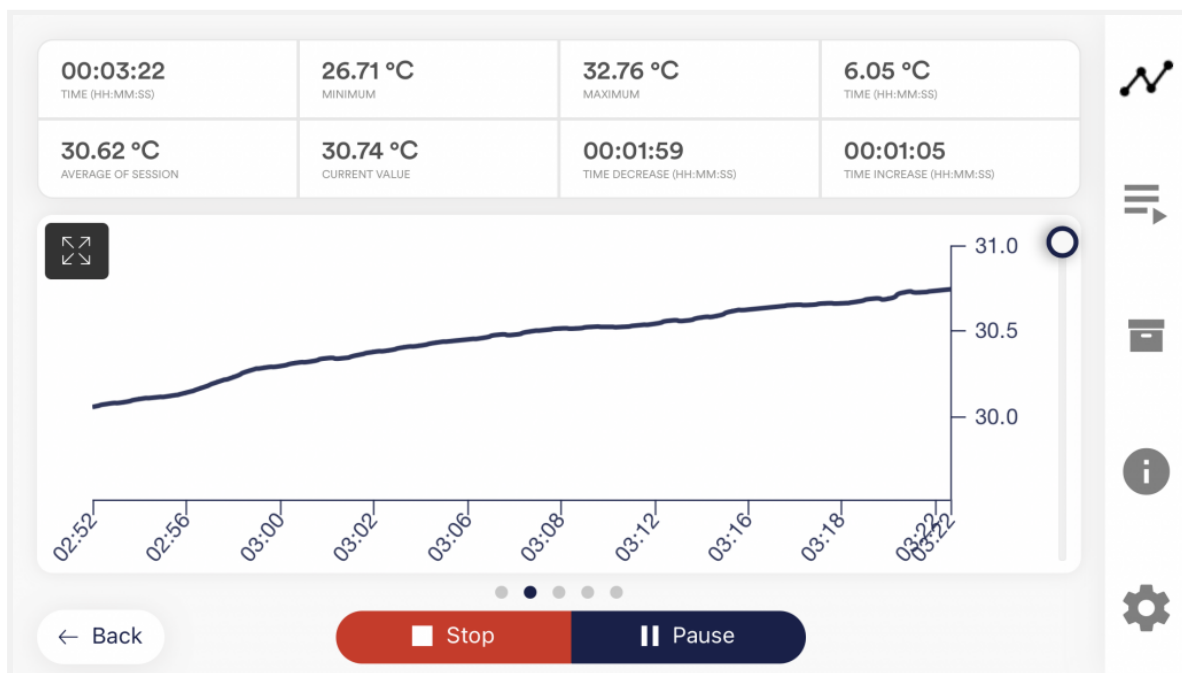
1. Follow the first steps of preparation from the previous chapter and choose an open training in the selection screen after starting the app
2. Tap on Start and have a first look at the measured values

First stage (observe and experiment; determine your initial status)

1. You should record your baseline state for 2-3 minutes at the beginning of each session, letting the sensor temperature adapt to your finger. Sit upright and comfortably, and do NOT watch the temperature but simply let the device measure. The temperature should reach a constant level for the actual training to begin.
2. In your first session, take ten minutes and try to relax. How you do this is up to your personal preferences and possibilities. Do NOT watch the temperature in the app! Training is about measuring whether relaxation already leads to a higher temperature in yourself.
3. Now look at the measured values and whether you have already caused an increase in temperature by relaxing. Were there sections of rising values? Did the level remain constant? Or does the curve drop slowly during the measurement? How do you rate your ability to relax during the measurement? You may already be able to determine a relationship between the curve and the tension or relaxation you are feeling. Regardless of whether you've succeeded, familiarize yourself with the feedback in the app. Observe the measured values and test whether you are able to influence the temperature at will. After that, the first training phase is over.



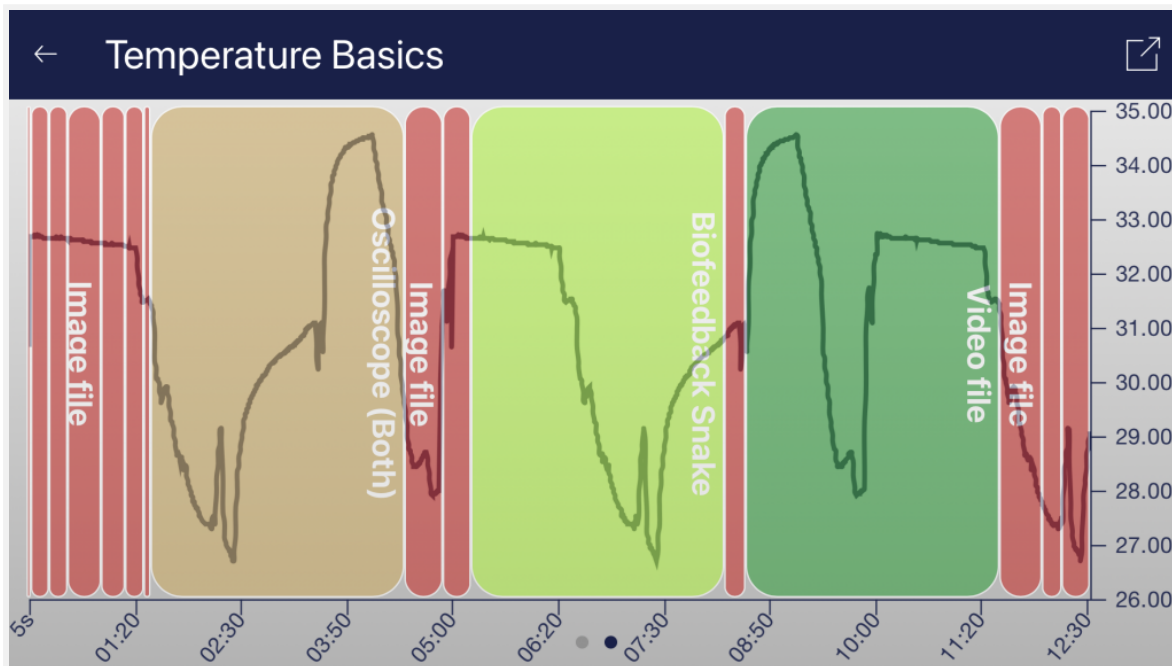
Example for a situation with rising stress; the temperature is falling



Example for a resting phase with rising relaxation; the temperature rises

- This is your initial training state. Of course, the day also plays a role here: it should make a difference whether you measure after a stressful working day (or even at work) or at the end of a relaxing weekend. **Use the corresponding function of the app to export this baseline as a CSV file. You can do this by calling the measurement in the archive. This will**

allow you to access your baseline later (in addition to the archive) by other ways (such as Excel).



Example of a measurement curve

Before taking another measurement, try to pay attention to the daily activities during which you are more likely to have hot or cold hands. These observations may be useful later in further sessions.

Second stage (targeted Biofeedback training with the skin response)

1. The second stage consists of multiple sessions. These sessions should always follow the following scheme. Start every session with a 2-3-minute baseline measurement WITHOUT watching the values to reach a steady state.
2. Now you can start to train conscious relaxation, using the feedback signal. Watch the temperature values while relaxing and try to find ways to bring them up. It can be helpful to imagine yourself lying in the sun, relaxing in a sauna, or putting your hands into warm water. You can also work with autosuggestion techniques, telling yourself sentences like, "My left hand feels warm...it feels even warmer now..." Feel free to experiment.
3. As with every activity, regular practice is the key to success. You should be able to raise your skin temperature by several degrees, unless your baseline

is already at 33-34°C / 91-93°F. The colder your hands are in the first place, the more potential you have to raise their temperature. In general, your hands can reach a temperature of more than 36°C / 97°F, which is the temperature of your body's core.

Third stage (transfer; relaxation without feedback)

1. Now you can check if a state of deepened relaxation, and the corresponding rise in skin temperature, can already be achieved without feedback. After measuring the baseline as usual, you should alternate between watching and not watching the feedback (two minutes each way). The longer and more often you can keep the temperature up without the feedback, the better your self-control has already become. When you are not using the feedback, don't look at the values in the app.
2. Perform multiple sessions in third stage. When you can keep your skin temperature up for a prolonged time and mainly without feedback, you have successfully completed this stage.
3. Our eSense app offers not only the free training but also procedures. These are ready-made training programs that you can customize according to your wishes. For the best comparability of training sessions, these should always be performed under identical conditions (same time of day, electrode position and type) and of approximately identical duration. The procedures are a great help. For more information, see the relevant section of this manual.

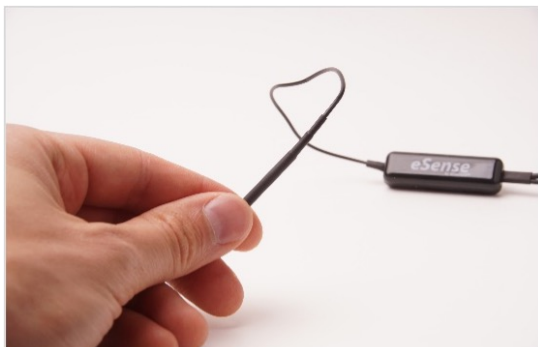
Fourth stage (deliberate provocation, relaxation and stress coping)

1. Finally, you should check if you have acquired improved stress resilience. Start a session with the baseline as usual, then keep your skin temperature on elevated levels (well above 30°C / 86°F) for a couple of minutes.
2. Try to bring yourself into a strenuous situation. You can recall previously memorized everyday situations in which you had cold hands, or situations that made you tense and angry. You can also move to a stressful environment or ask another person to exert a stressful stimulus upon you. Keep the stress situation short and do not overload your ability to cope with it.

3. Now under stress, observe if the temperature drops, and still try to keep the temperature at a high level and avoid temperature drops. Always change phases of stress and targeted relaxation.
4. If you can sustain elevated levels of skin temperature during strenuous situations, ideally at levels above your personal maximum in the first stage, you have learned to remain relaxed and calm even in difficult and stressful situations. You have fully reached the goal of hand warming training!

11. Possible fixations of the sensor

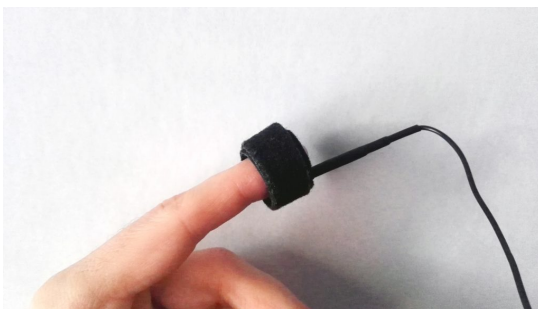
Holding



Simply hold the sensor between your index finger and thumb.

+ No additional equipment necessary.

Velcro tape (included)



A Velcro strap is included with the eSense Temperature. You can use the Velcro to attach the sensor to your finger.

+ No further equipment necessary

+ More comfortable for longer measurements

Leukosilk (medical tape)



Simply attach the sensor to your finger or palm with roll adhesive plaster. You can get roll adhesive plasters in every pharmacy.

- + Can be attached to a finger or the palm of the hand.
- + More comfortable for longer measurements

Finger Clip



This is our recommended method of attachment. The finger clip does not stick because no glue is used. The open design ensures that there is no heat buildup.

- + no sticking
- + no heat accumulation
- + for longer measurements optimal fixation of the temperature sensor

You can order the finger clip in our online store: [\[sc name="fingerclips-shop-english"\]](#)

12. Extending the cord of the eSense

If you wish to use a longer cord between the eSense and your smartphone or tablet, you can extend the original cord of the eSense with a common, 4-pin, 3.5mm jack headset extension cord. We have tested three cords that have worked well:

2m cord: [\[sc name="amazon-2m-cable-german"\]](#)

0,5m cord: [\[sc name="amazon-05m-cable-german"\]](#)

110cm cord: [\[sc name="amazon-110-cm-cable-german"\]](#)

All three suggested cords cost between £6-8 and are available from Amazon. Alternatively, you should be able to use other 4-pin cords as well.

13. Smart Bulbs (optional)



Smarte Glühbirne in Verwendung mit dem eSense Skin Response

The eSense app can support biofeedback via smart bulbs. Smart bulbs can change their colors and brightness and can be controlled via Bluetooth. In combination with the eSense app, smart bulbs indicate your level of stress or relaxation through their lights.

Currently, the eSense app supports the Magic Blue and Phillips Hue smart bulbs. Both are smart bulbs which can be controlled via Bluetooth. The color as well as the brightness can be adjusted. From within the eSense App, you can connect to the Magic Blue or the Phillips Hue and use it in your biofeedback session. Here you connect to the Hue Bridge from the eSense app and select the desired lamps.

Magic Blue

You can buy the Magic Bulb at our shop at [\[sc name="magic-blue-shop-english"\]](#) [/sc].

You can also find more information about Magic Blue in our article.

Philips Hue

You should be able to find the Phillips Hue in every well-sorted electronic store. You can also order it online. A list of the on- and offline-merchants can be also found on the page of the Phillips Hue: [\[sc name="philips-hue-website-english"\]](#) [/sc]

We suggest you use one of the starter kits from Phillips, with the eSense. This also contains a colored bulb ('Color Ambience'): [\[sc name="philips-hue-amazon-english"\]](#) [/sc].

You can also find more information about Philips Hue in our article.

14. Functions of the Mindfield eSense App

The eSense comes with the eSense app which you can load for free in the Google Play Store (Android) or Apple App Store (iOS).

It offers a wealth of features for effective biofeedback training in a modern design. Essential functions are: the display of measured values as a bar graph, an oscilloscope, feedback via video, music, sound, vibration, and smart bulbs (Magic Blue and Philips Hue). You receive a comprehensive evaluation after each measurement and can compare measurements with each other in the archive and export them as CSV files.

The app is available in English, German, Spanish, French, Italian, Portuguese, Ukrainian, Russian, Turkish, Dutch, Japanese and Chinese. The language is chosen automatically according to the set language of the smartphone or tablet.

Download Links



iOS: <https://itunes.apple.com/us/app/mindfield-esense/id1141032160?mt=8>

Android: <https://play.google.com/store/apps/details?id=com.mindfield.boisystem.esense>

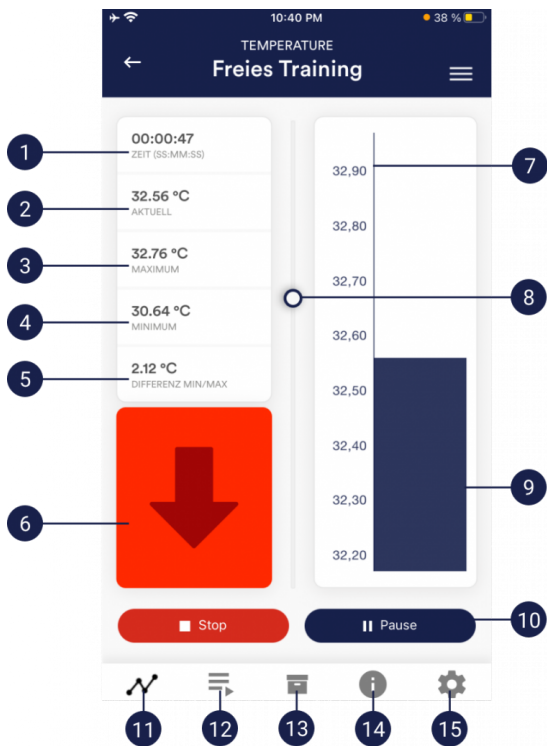
15. General notes

- If the text on your Android device is sometimes cut off the reason can be a larger font in the system settings (especially for Huawei). In the Android settings, there is usually a way to adjust the font size and display size. It's best to set this to "standard" or "default", otherwise it can cause problems with app.
- For data files which you can load as own media into the eSense App, the general limitations by Android and iOS apply. We have successfully tested the following:
 - Images: PNG and JPG (GIF can be loaded but isn't animated)

In following the app is described in full details.

16. General view & Open Training

Portrait



1. Time elapsed
2. Momentary value
3. Overall maximum
4. Overall minimum
5. Difference between minimum and maximum
6. Indicator for rising or falling values
7. Scale for temperature
8. Zoom for temperature scale
9. Momentary value
10. Start, pause and stop of the recording
11. Open Training
12. Procedures
13. Archive
14. Help
15. Settings

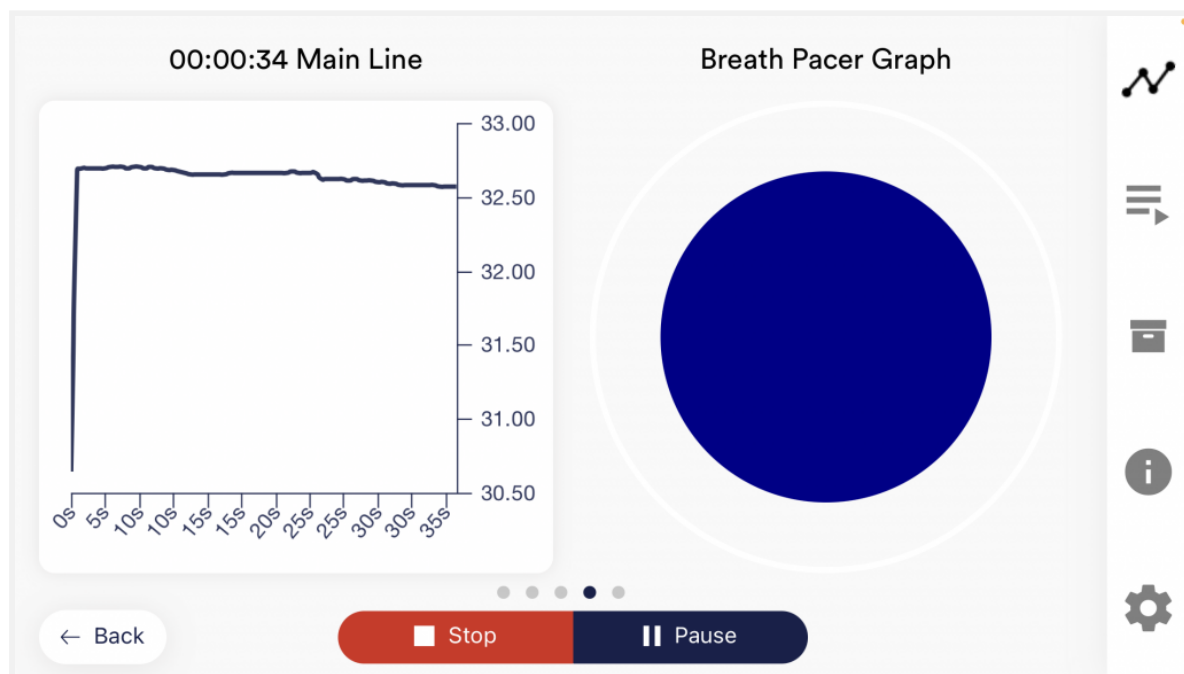
Landscape



1. Absolute decrease of measured values
2. Absolute increase of measured values
3. Swipe the screen to the left or right to change between this main screen and the other views. After the measurement, you can also swipe to the pie charts.
4. Set marker

17. Breath Pacer

If you have toggled this option on in the settings, you can have the Breath Pacer displayed. In the settings you can choose between line or sphere.



Breath Pacer as sphere

You can configure the breath pacer in the settings. There you can freely choose inhalation time, hold, exhalation and hold in 0.1s increments.

18. Biofeedback Snake



Biofeedback Snake for the Temperature

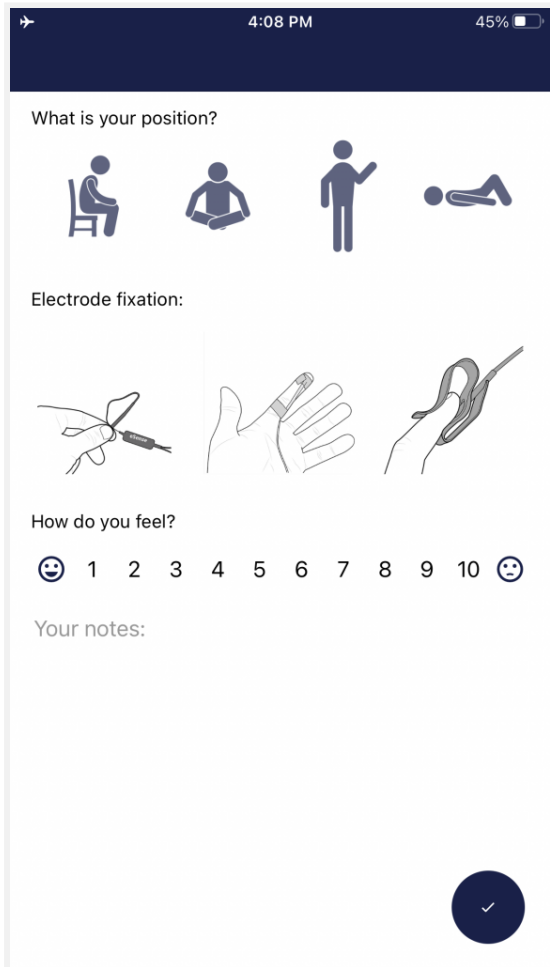
You can also display the Biofeedback snake as an additional option. After 10 green symbols you will also be rewarded with a star and after 50 green symbols even with a shooting star. If the snake goes over the entire screen you will see the last 5 minutes.

In detail, the symbols are calculated as follows. During the last 5 seconds of measurement, if...

- ...the value is $> 35^{\circ}\text{C}$, the thermometer is always green
- ...the value rises for 3-5 seconds, the thermometer is green
- ...the value rises for 33°C , the thermometer is green
- ...the value rises for < 3 seconds and the temperature is $< 33^{\circ}\text{C}$, the thermometer is yellow
- ...the value rises for 30°C , the thermometer is yellow
- ...the value rises for < 3 seconds and the temperature is $< 30^{\circ}\text{C}$, the thermometer is orange
- ...if the value rises for 25°C , then the thermometer is orange
- ...the value rises for < 3 seconds and the temperature is $< 25^{\circ}\text{C}$, the thermometer is red

19. Survey (optional)

If you have toggled this option on in the settings, a survey will appear after each measurement. This enables you to archive reproducible measurements and to document changes in your measurements (for instance, if you change the electrodes type or if you start to use the eSense while you are lying down instead of sitting).



What is your position?

Choose between sitting, legged/yoga sitting, standing or laid.

Electrode type

The first image represents the gel electrodes, the second image represents the Velcro electrodes, and the third image represents the EDA finger clips.

How do you feel?

Here you set your mood after the session. This enables you to save your mood in connection with the measurements for the long term.

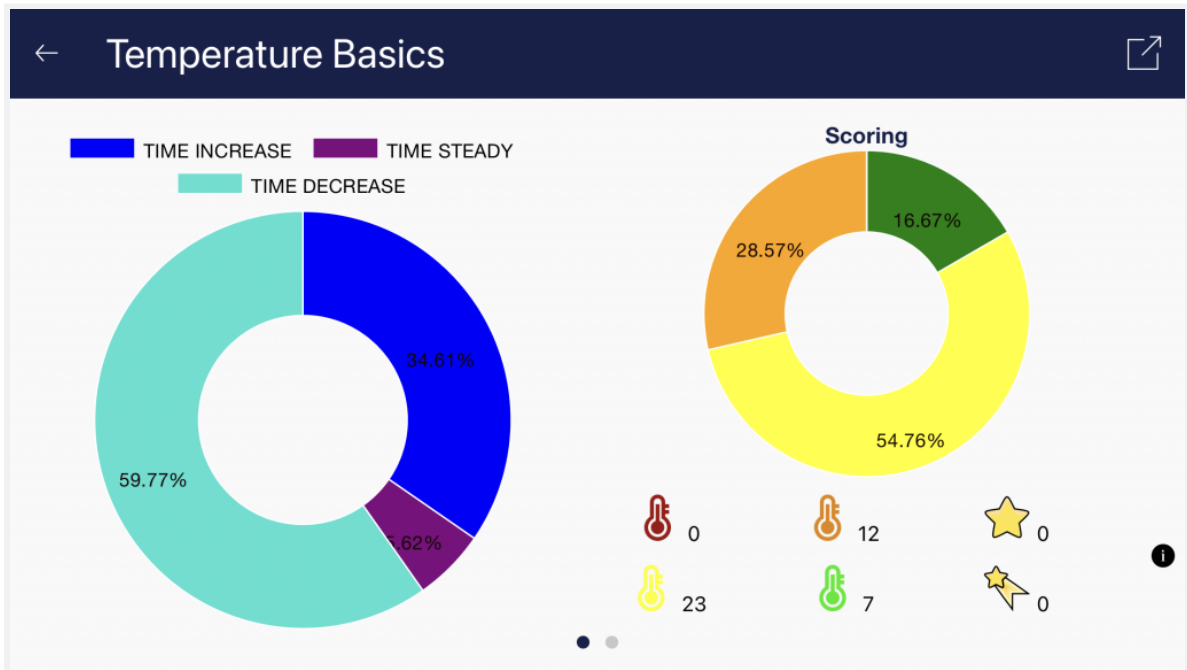
Note (here “Test tone and tactile”)

Here you can simply note a free text to the measurement. We suggest noting down special circumstances so that you can classify measurements with a lot of stress or relaxation even much later in time.

20. Pie charts (after a measurement)

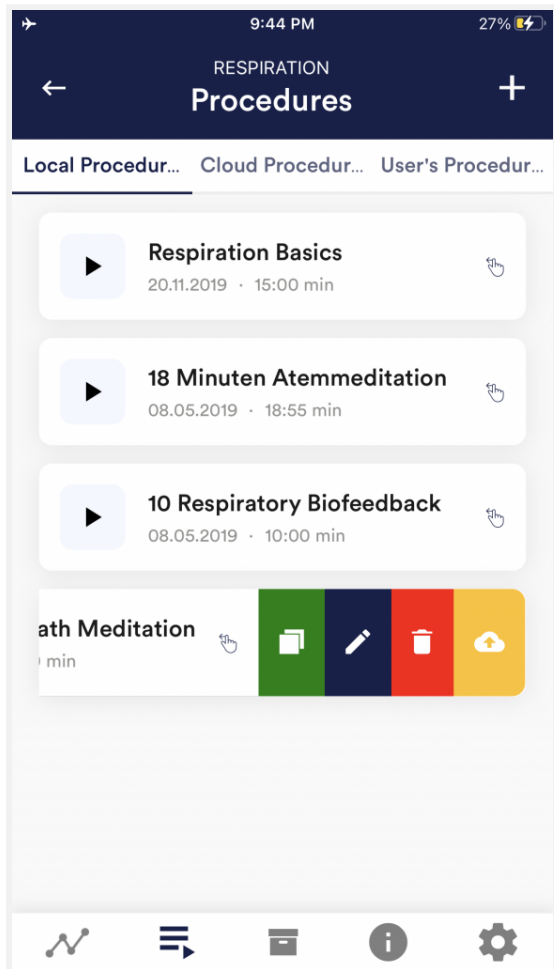
After the measurement (and optional survey), in the landscape mode, a survey appears with two pie charts: one shows your SCR while your measurement and another shows the time proportions of rising, falling or steady values (see screenshot).

Here you can also swipe the screen to the left or right to change between the pie chart and the graph of your measurement.



Both pie charts after a measurement

21. Procedure Overview



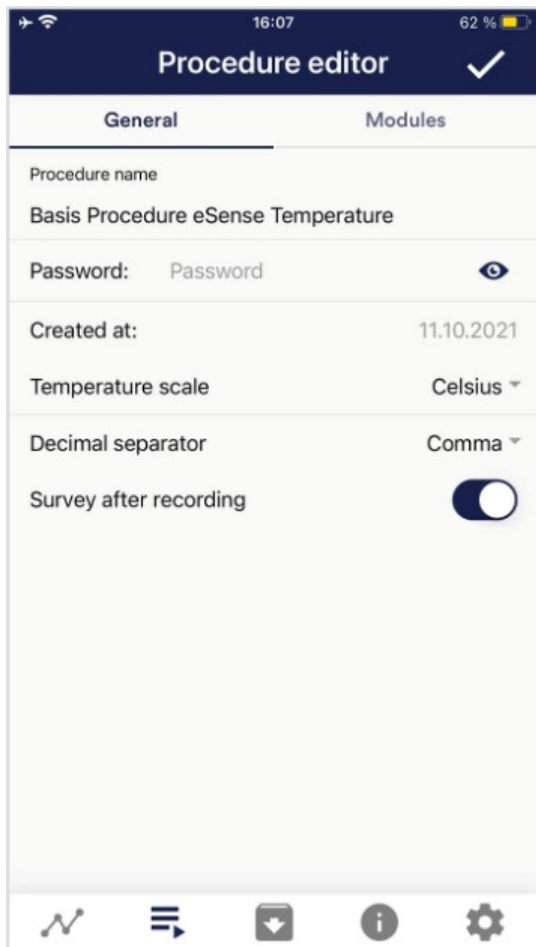
Edit or delete procedure

To edit a procedure, simply swipe it to the left in the overview.

You can then tap the blue pen-symbol to edit the module.

If you want to copy the procedure, tap on the green copy-symbol. By touching the red trash symbol, you can delete the module.

22. Procedure editor



Procedure name

Here you can name your procedure with a suitable name (in this example, it is simply “test”).

Password (optional)

If you wish, you can protect your procedure with a password.

Temperature scale

Set the unit to Celsius or Fahrenheit

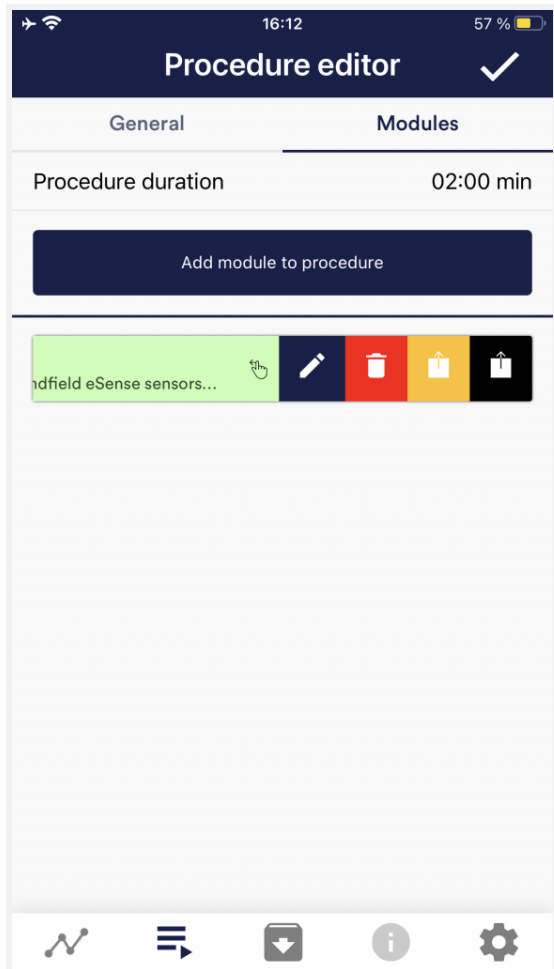
Decimal separator

You can choose between point or comma as separator of values in CSV export of procedures.

Survey after recording

Here you can activate/deactivate the survey (position, mood, notes) after each measurement.

23. Add new module



In the procedure editor, select the “Modules” tab.

Add module to procedure

Click on this button to add another module.

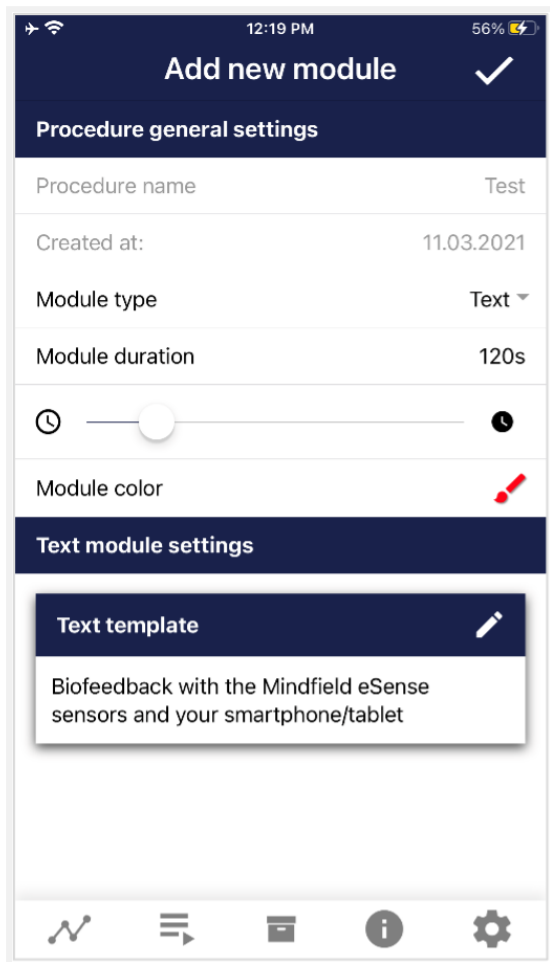
Edit module

Slide the module to the left and tap on the blue pencil symbol to edit.

To delete a module, tap the red trash can icon.

To duplicate a module within the procedure, click on the yellow sharing symbol.

To duplicate a module to another procedure, click on the black sharing icon and select the procedure from the following popup.



Module Type

You can choose between a text, a fixation cross, an image, a video, an audio file, an arrow, a bar graph, a smart bulb, an oscilloscope, a breath pacer or the biofeedback snake.

Module duration

Set how long the module shall last. To do this, simply move the slider to the left or right.

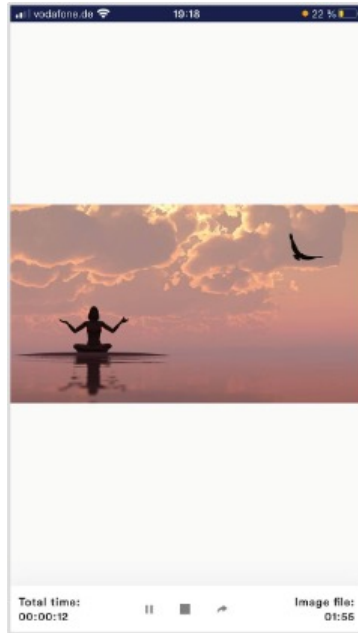
module color

Determine the color of the module in the procedure editor.

24. Overview of the modules



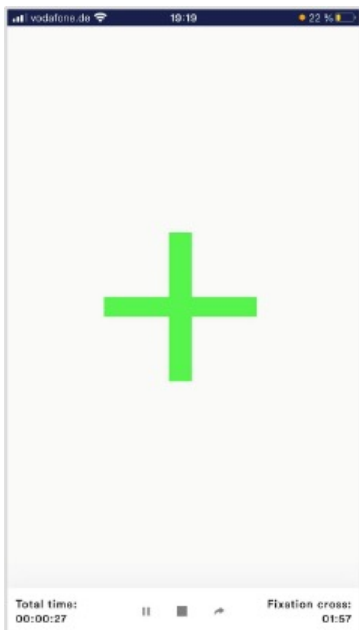
Text module This module shows a text which you can edit.



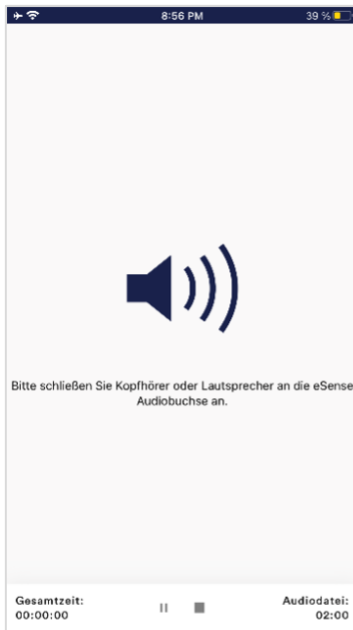
Picture module The picture module shows either a standard picture from the app or a picture from your gallery.



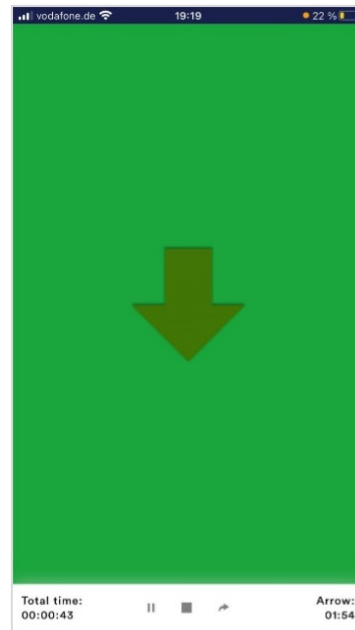
Video module In the video module, you can choose either the standard video from the app or use your own video.



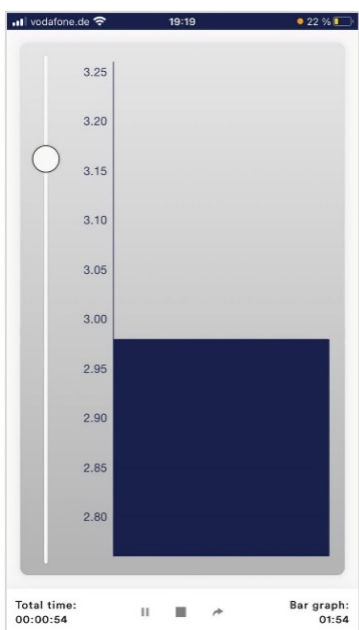
Fixation cross moduleThe cross changes its color depending on the conductance and provides direct biofeedback.



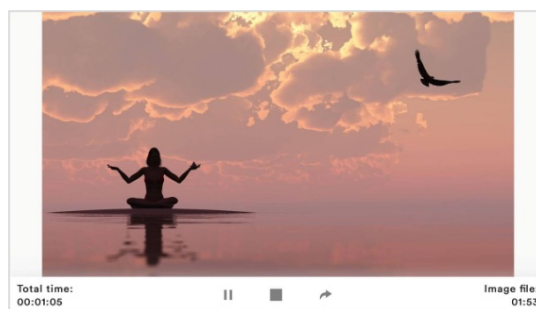
Audio moduleThe audio module is playing a relaxing song. You can choose your own music.



Arrow moduleThe arrow changes depending on relaxation and gives you direct biofeedback.



Bar graph moduleThe bar graph shows you your current value and



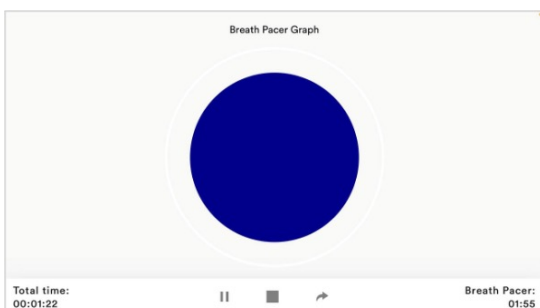
Picture module in landscape formatThe procedures can be displayed also in landscape format.

gives you direct biofeedback.



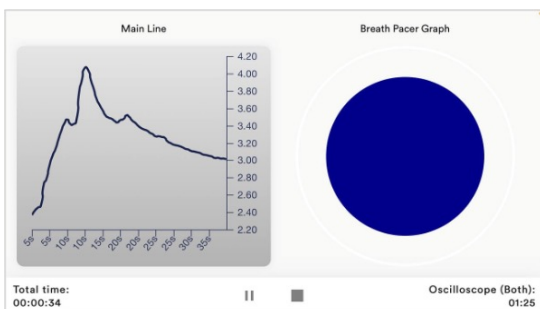
Breath Pacer module in landscape format

The bar indicates the breathing rhythm. When the bar goes up, inhale. As the bar goes down, exhale. You can also set holding phases between inhaling and exhaling.



Oscilloscope Type Breath curve (Sphere)

The circle leads the breathing rhythm. When he expands, inhale. When the blue circle contracts, breathe out. You can also set holding phases between inhaling and exhaling.



Oscilloscope Type Both

This is a combination of the graph to the left and the breathing aid to the right \. You can see the measured values while following the breathing aid.



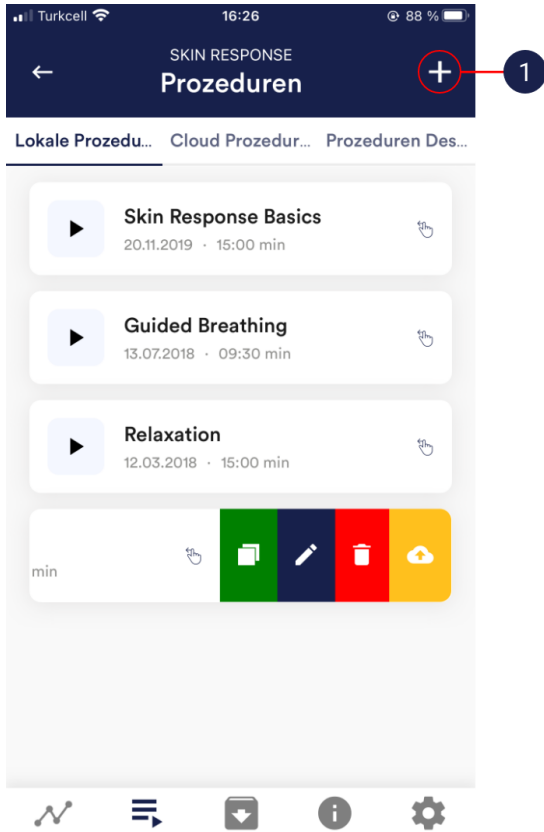
Biofeedback Snake The Biofeedback Snake is also available as module.



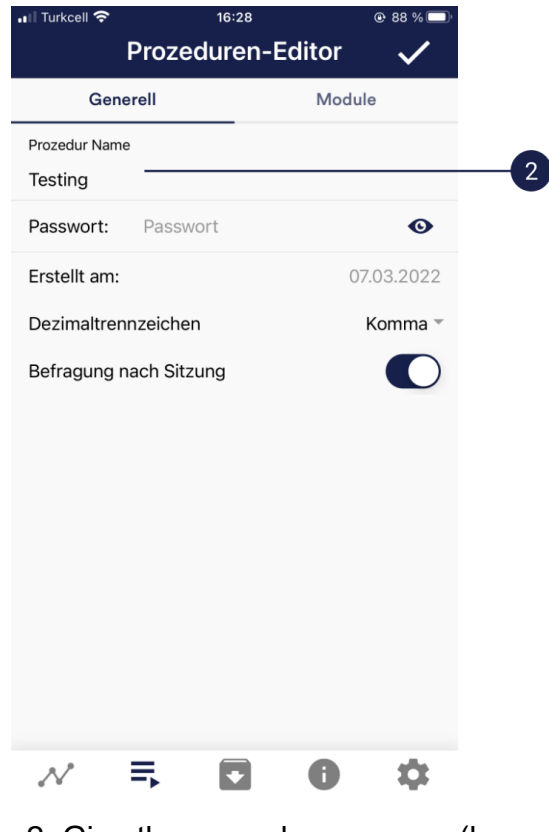
Procedure in the archive

The colored background represents the SRC per minute (green = relaxed state / little SCR, yellow = excited state / medium SCR)

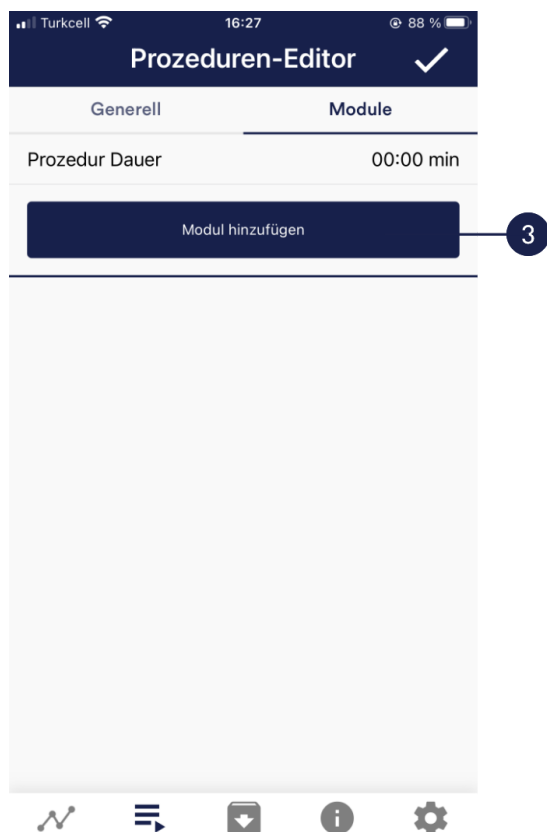
25. Creation of a procedure



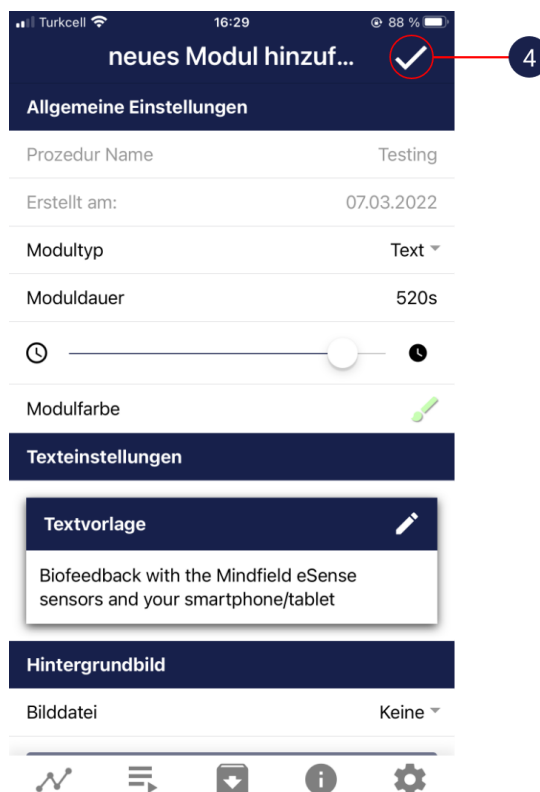
1. Tap on the plus icon to create a new procedure.



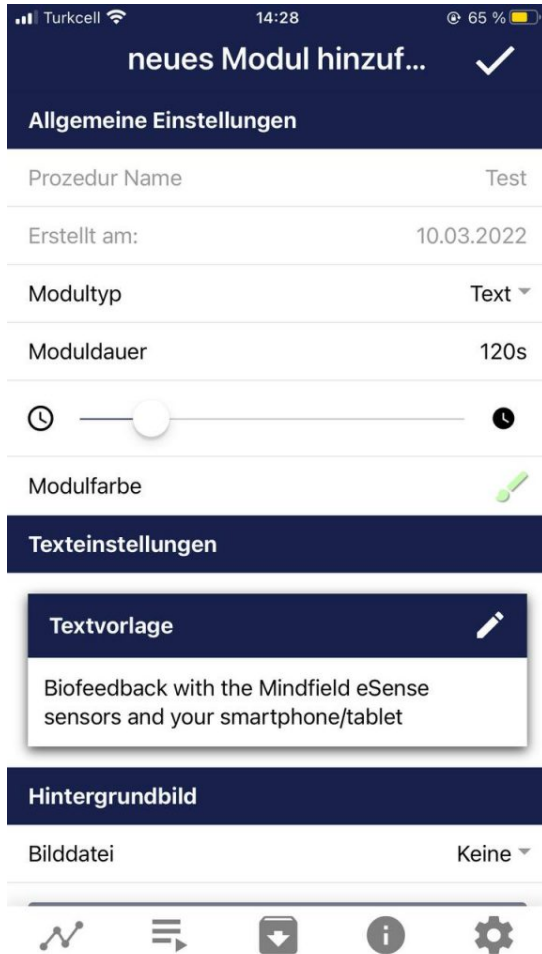
2. Give the procedure a name (here "Example Procedure"). You can simply accept all other default settings for this example.



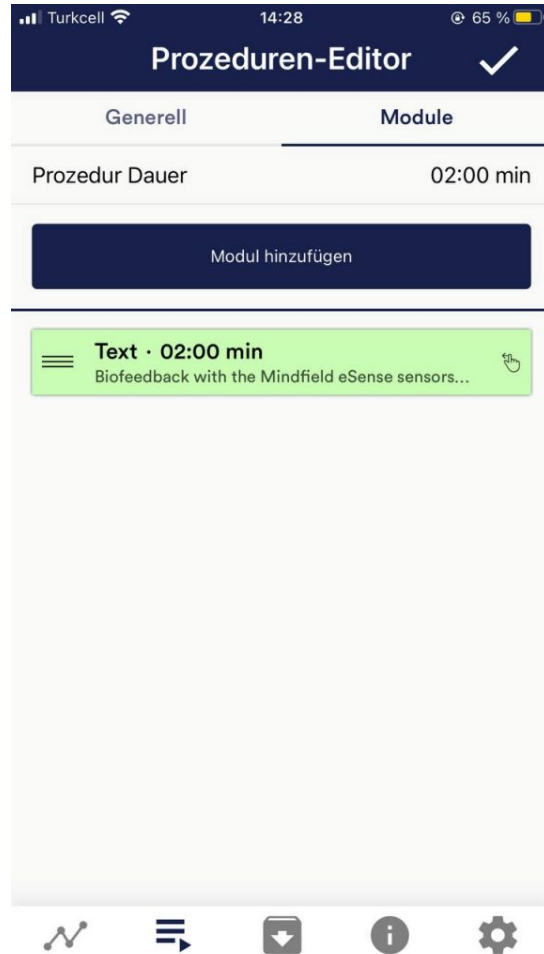
3. Select the upper tab “Module” and tap on the button “Add module”.



4. Select a bar graph module and tap the check mark. Here, too, you can accept the default settings.



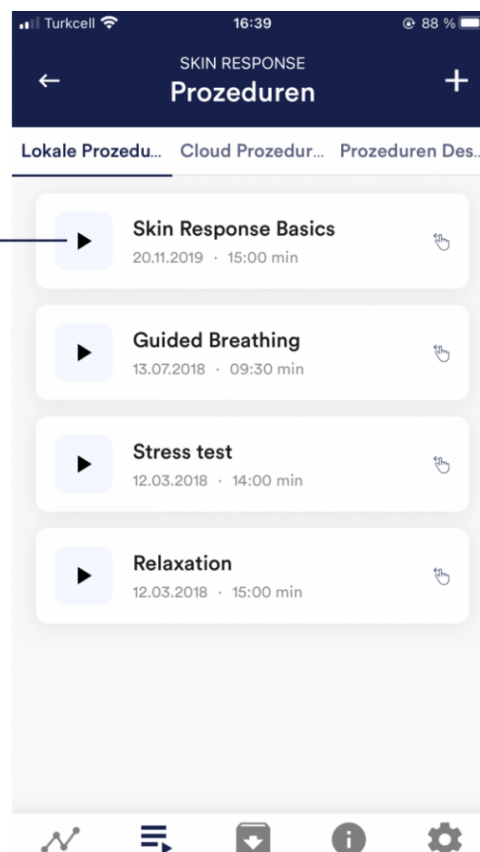
5. Then add an Oscilloscope and breath pacer module Here, too, you can accept the default settings.



6. Your procedure should now look like this.



7. If you want to change something at a later date on one of the modules, you can swipe the corresponding module to the left and tap on the blue pencil symbol. Otherwise you can now tap the tick at the top right.



8. Start the procedure by tapping the play button. Have fun!

26. Meditations

You can also choose one of our guided meditations as a procedure. The breathing meditation is already included in the eSense app.

We will also offer more meditations shortly as new free cloud procedures for users with account. The meditations thus offer you an easy way to train your awareness and attention and, at the same time, receive biofeedback.

27. Own media (photos, videos and audios)

You can use your own pictures in the picture module, your own videos in the video module or your own music or melodies in the audio module in the procedures.

Android usually enables this without any further problems. As long as you allow the eSense app to access your files on your device, you can upload them to the eSense app.

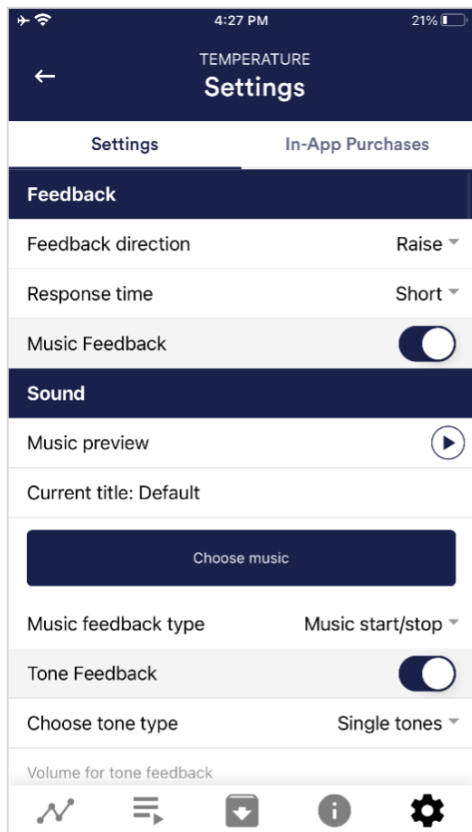
iOS is a bit more restrictive. As usual, you can use your pictures from your device in the iCloud for pictures and videos.

For audio files you need iTunes (or an alternative such as “CopyTrans Manager”). This is where your music or melody must be. You can find your music in iTunes (or CopyTrans Manager) under the tab “My Sound” and insert it into your procedures.

We have a detailed video at https://www.youtube.com/watch?v=A_CRbmBeBBc where we show all the steps.

On **iOS** the **power saving mode** must also be deactivated, otherwise the videos in the procedures cannot be played.

28. Settings (Overview)



Feedback Direction

Select the direction in which you want the feedback to react to. It can respond either to an increase or decrease in the measured values.

Response time

The default setting is “Short”, which allows feedback to respond quickly to changes in readings. For longer measurements we recommend “Medium” or “Long”, then the reaction time will be slightly delayed and the eSense will no longer react to every small change of the measured values.

Music Feedback

If the value moves in the unwanted direction (e.g. lower values), the music will become quieter or change its speed depending on the type of feedback you choose.

Music Preview

Tab the play button to listen to the selected song.

Choose music

You can choose default or your own music.

Music feedback type

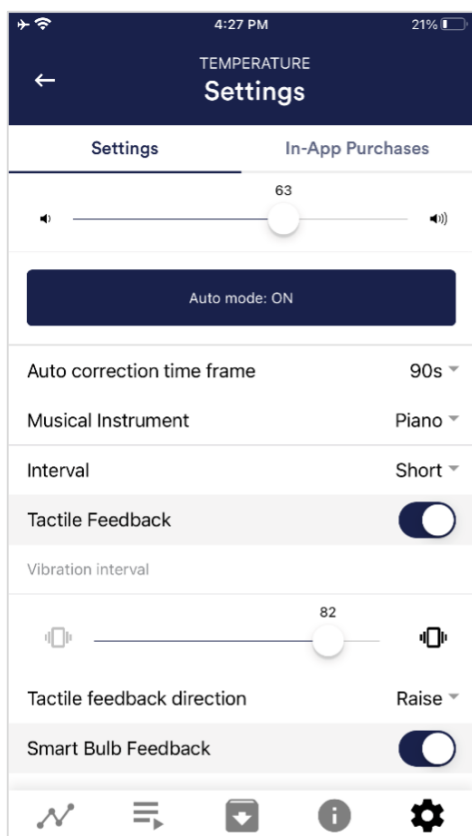
You can optionally choose between music start/stop, volume feedback or playback rate feedback. Note: For iOS are the Restricted options.

Tone Feedback

In the background, you can hear sounds from other apps.

Choose tone type

You can choose between single or continuous tones.



Auto Mode

When this is activated, the range in which the sound changes is automatically adjusted. The minimum and maximum values of the set time window are automatically used for the lower and upper limits of the following interval.

Value range from-to

(Not visible when auto mode is enabled)
You can set the area in which the feedback is active. We recommend selecting the range wide at the beginning and to set it smaller over time if necessary. Alternatively, you can use the automatic mode.

Auto correction time frame

(Only visible when auto mode is enabled)
You can specify the time window in which the automatic mode adjusts itself each time.

Musical instrument

You can choose from various preset instruments.

Interval

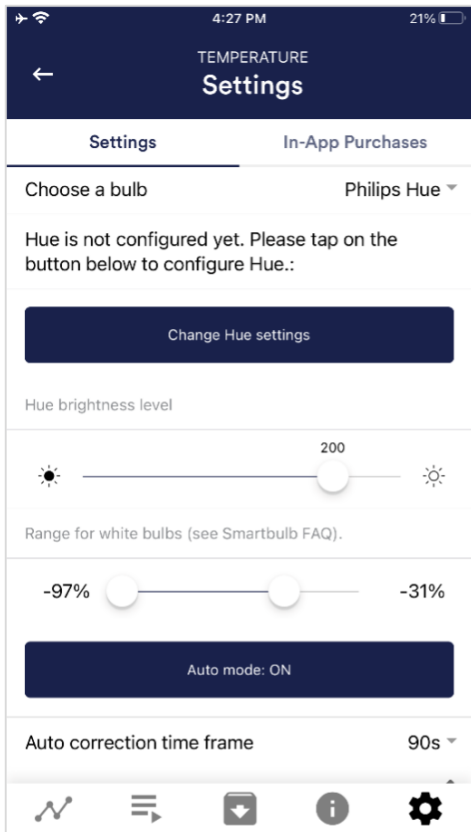
Set an interval for the tone feedback.

Tactile Feedback

Your device will vibrate to provide feedback. Only smartphones support this feature, tablets do not have a vibration motor.

Tactile feedback direction

Decide whether decreasing (“Decrease”) or increasing (“Increase”) tactile feedback values should be considered a success.



Smart bulb feedback

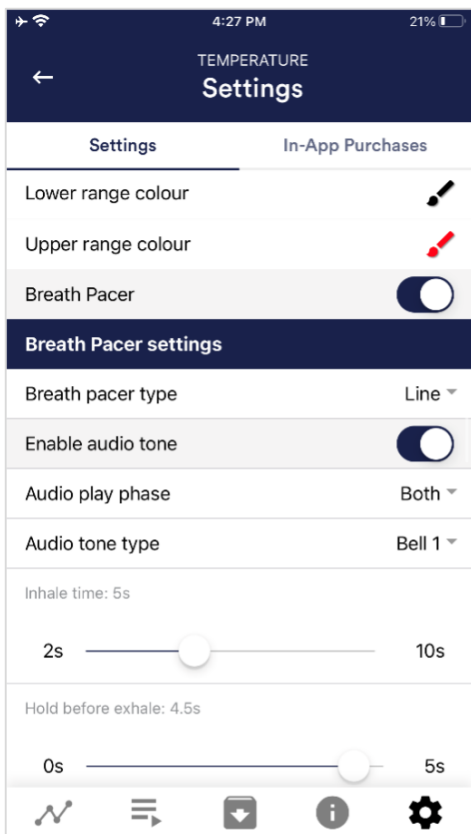
The light bulb changes its color depending on the values.

Choose a bulb

Choose between Magic Blue or Phillips Hue.

Connection test

With this option, the bulb changes color if the connection is successful.



Breath Pacer

If activated, a breathing aid is displayed during the measurement.

Breath pacer type

You can choose between line and sphere.

Enable audio tone

Tones can also be added as auditory breathing aids.

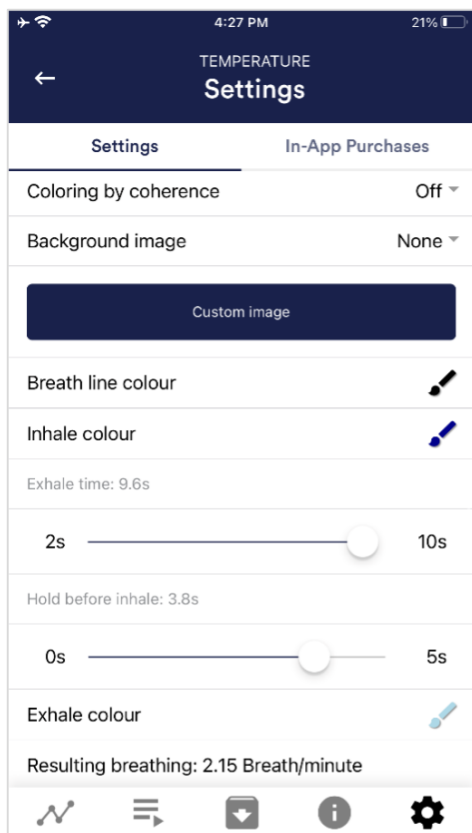
Inhale time / exhale time

Select the seconds for each inhalation breath and exhalation breath to display the breathing aid.

Hold before inhale / exhale

Select the seconds between inhalation

and exhalation breaths

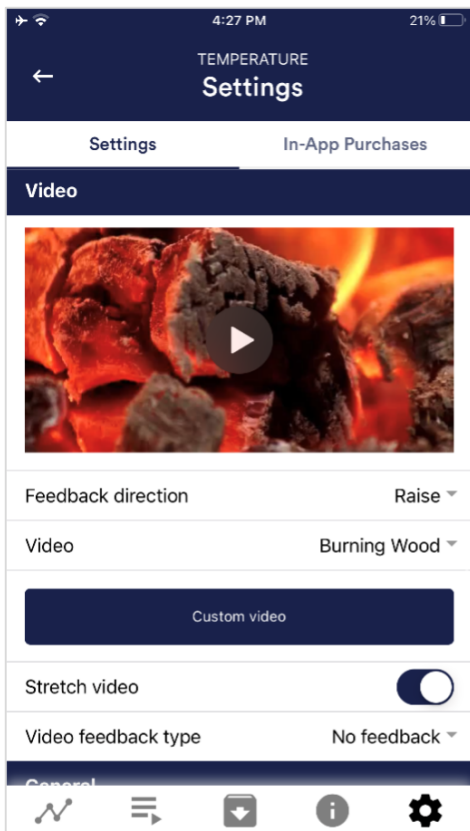


background image

You can choose a background image for the breathing aid.

Inhale color / exhale color

Select the color for each inhalation and exhalation stroke of the bar or ball.

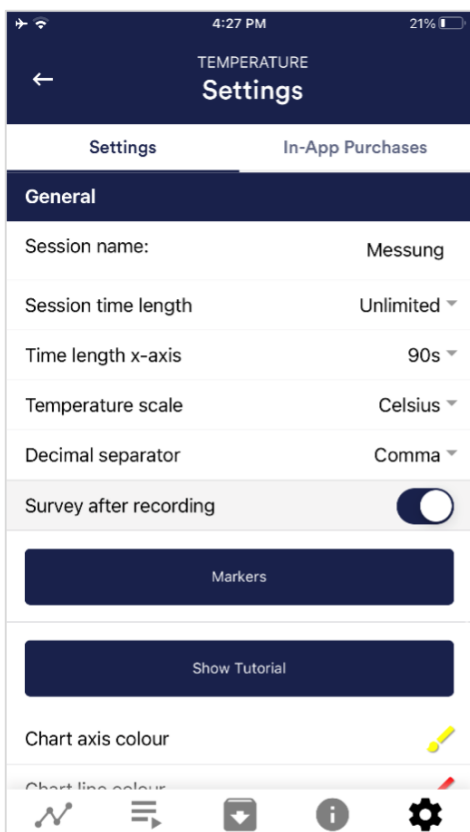


Video

Choice: In the dropdown menu, you can select from included videos and “Select your own video”. You can select your own videos from your device.

Video Feedback Type

Effects can be applied to the video as feedback. Sie können zwischen Start/Stop, Schärfe, Helligkeit und Sättigung wählen. You can choose between Start/Stop, Sharpness, Brightness and Saturation. In addition, the automatic or manual mode for selecting the upper and lower limits is then available for sharpness, brightness, and saturation. In between is then interpolated. “No feedback” is also possible, then the video is simply played.



General:

Session name

Enter the name of your session which will be displayed in the archive here.

Session time length

You can automatically time-limit normal measurements. They stop automatically after the set time.

Time length X-Axis

You can set the time displayed on the X-axis of the oscilloscope. We recommend 90 seconds.

Temperature scale

Set the unit to Celsius or Fahrenheit

Decimal separator

You can choose between comma or dot.

Survey after recording

Here you can activate/deactivate the survey (position, electrode type, mood, notes) after each measurement.

Markers

You can define markers by tapping the button. These are the markers you can set during a measurement. (See also 'Set Marker' in Landscape mode of the general view above).

Show tutorial

You can watch the tutorial again at any time from the first start of the app.

Chart settings

You can change the colors of the graph and the oscilloscope in the general view.

Chart axis color

You can change the color of the chart axis in the main view.

Chart line color

You can change the color of the chart line in the main view.

Oscilloscope background 1&2

You can change the background color of the oscilloscope in the main view.

Smoothing of oscilloscope curve

You can adjust the smoothing of the

curve in the oscilloscope between 1 (hardly) and 10 (very strong).

Reset to standard colors

You can restore the default colors for the graph at any time.

Arrow raise / lower color

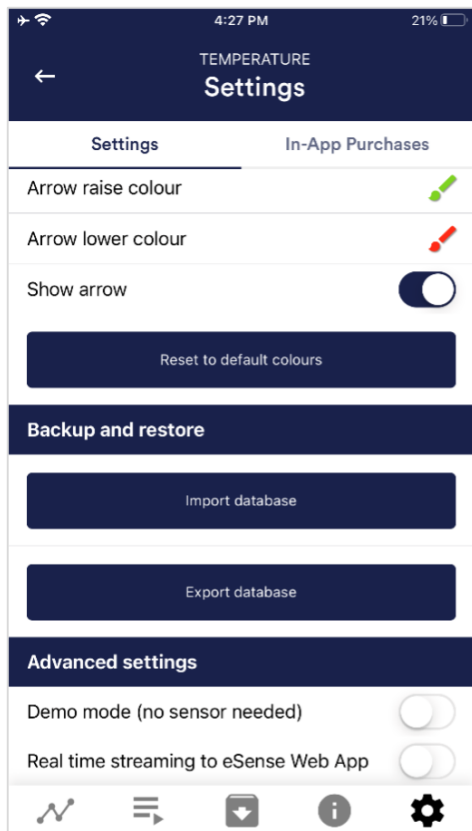
You can change the color of the arrow in the main view.

Show arrow

You can also disable the arrow in the main view.

Backup & Restore

You can export and import your procedures and measurements. More about this in our [FAQ](#)



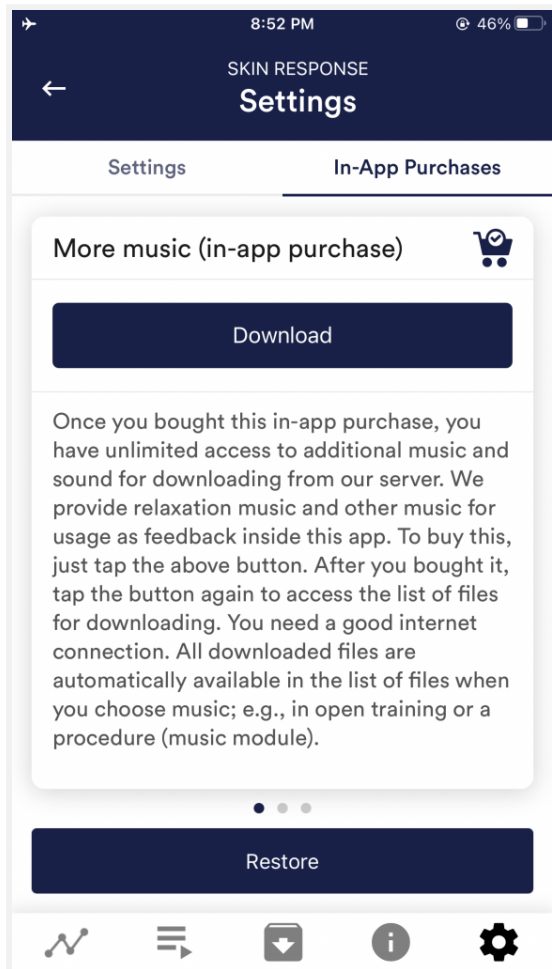
Demo Mode

A saved measurement is played back automatically. A real sensor is not needed.

Real time streaming to eSense Web App

This allows you to stream the data live to the eSense Web App. More information in the Account and Cloud section.

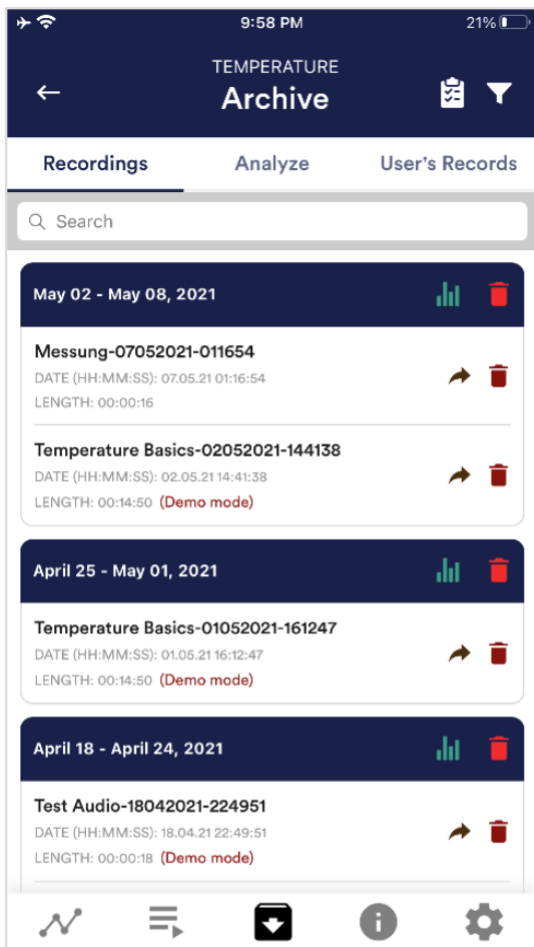
29. In App Purchases



In-App Purchases

Additional to the option to use your own music or videos in the eSense App you can also purchase additional music or videos. We regularly extend the offer.

30. Archive (overview)



The app also contains an archive, in which you can save your measurements and export them as well. You can watch those in detail again, compare them to each other and export them individual or all together (as ZIP file).

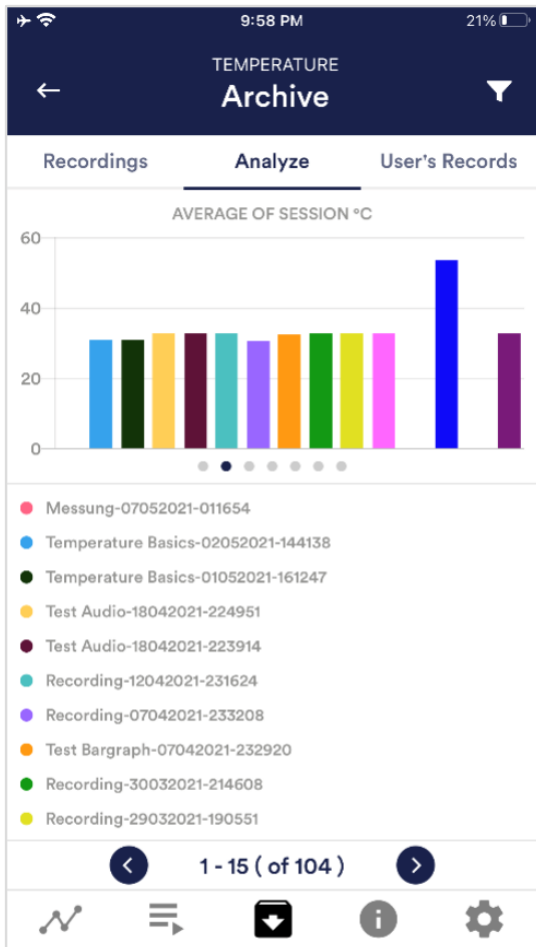
Recordings

Here you can see your measurements listed. You can view a single measurement by tapping on it.

If you click on the clipboard symbol at the top right, you can mark one, several or all measurements. You can then export, analyze or delete the exported measurement (s).

On the filter symbol you can choose whether you want to sort the measurements by name, date, length in ascending or descending order.

If you want to delete a single measurement from this list, you can also tap on the trash can symbol to the right of the measurement.



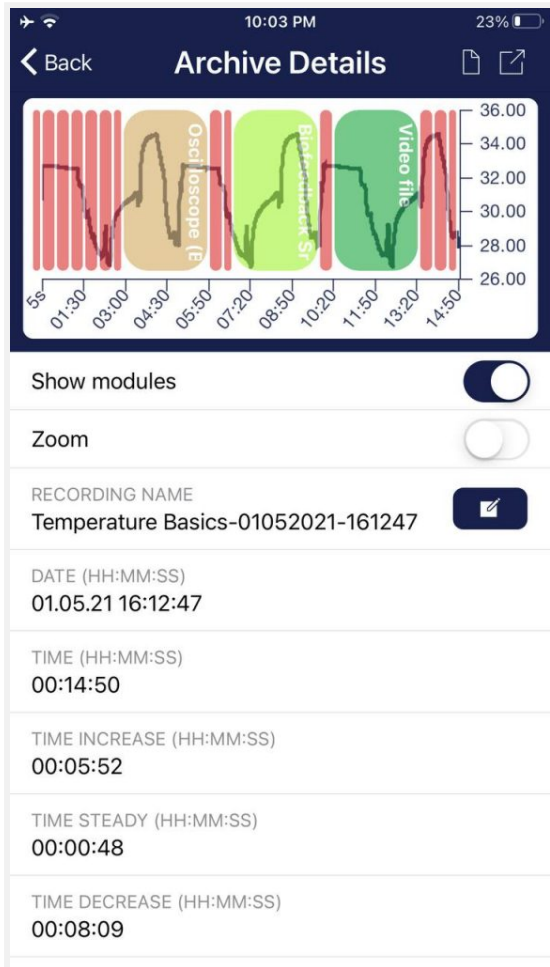
Analyze

Here all measurements are listed according to the following factors:

Time, Average of Session °C, Minimum °C, Maximum °C, Difference Min/Max °C, Time Decrease, Time Increase.

With this, you can recognize trends over time and over several measurements (if, for example, your % of SCR of Session decreases by regular training, you can see this here immediately).

31. Archiv (individual view)



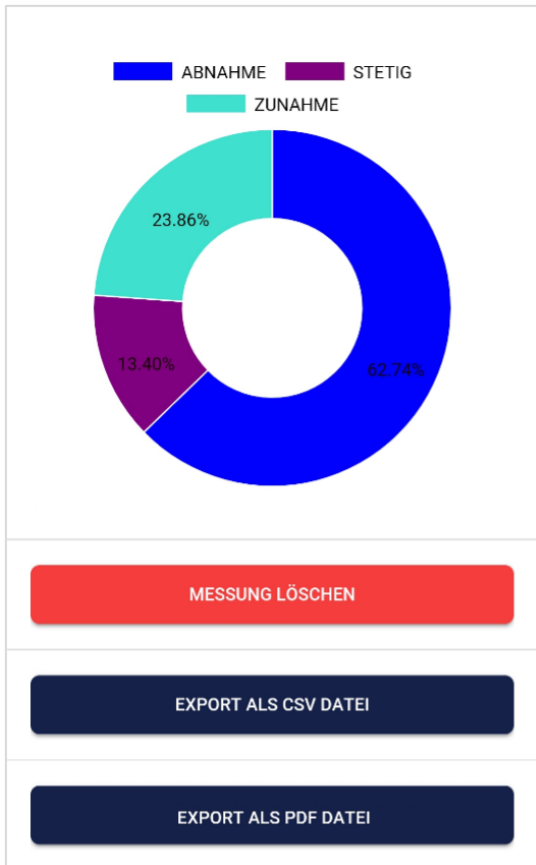
Export data

If you click on the export symbol on the top right, you can export the measurements as a .csv-file with all common apps (for instance, send over the Messenger, WhatsApp, email, etc.) or simply save them on your device or in your cloud.

The data are exported as a.csv-file (comma separated values). This format can be opened with Microsoft Excel or Open Office Calc (for free).

If you like to work with Google, Google Sheets can be an alternative to Excel for you. You can open your exported .csv-files, visualize and access them via the cloud easily from several devices. Google Sheets has almost the same functions and interface as Excel.

Note: We have also summarized more **detailed information on CSV export and processing your data in an extra article on streaming and analyzing eSense data.**

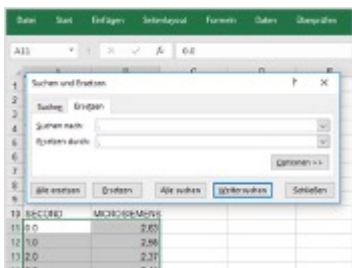


Parts of increase/decrease/steady

In the pie chart you can see the parts in which the measured values were increasing, decreasing or steady.

Export as PDF File

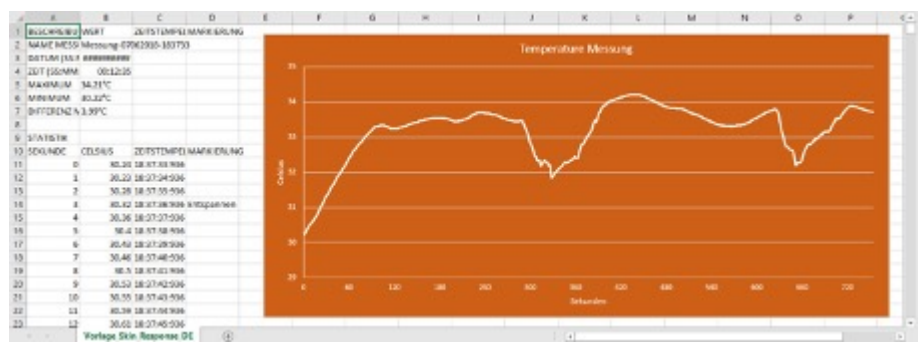
You can export the measurement also as PDF alternatively. Note: This takes a moment.



In Excel™ or Google Sheets™

Notice: If you open the .csv-file with Excel™ (or Google Sheets™) and your values make no sense, then there is usually a different set language in the eSense App and Excel™ and Sheets™.

Note: We have also summarized more **detailed information on CSV export and processing your data in an extra article on streaming and analyzing eSense data.**



Exported data in Excel

32. Compatible Android and iOS devices

General

Note for all eSense:

We recommend using a tablet instead of a smartphone due to better display.

If you don't have a device yet and/or want to buy an extra device for the eSense, we recommend depending on your taste either

- a Nokia 2.4 (<https://amzn.to/3olUjyn>), a Nokia G20 (<https://amzn.to/35JPDvS>), a Motorola Moto E7i Power (<https://amzn.to/3GyOh3X>) or a Xiaomi Redmi 9a (<https://amzn.to/32WHvao>) if you prefer **Android**

or

- a refurbished iPad in good condition (from bsw. <https://www.refurbed.de/c/ipads/> or <https://www.rebuy.de/kaufen/apple-tablets>) if you prefer **iOS**.

In our experience, these options offer enough power for the eSense app, will remain upgradeable to upcoming Android and iOS versions for some time and are still reasonably priced. The Android devices also still have a normal 3.5mm jack input and do not require an adapter for the eSense.

iOS devices compatible with the eSense

- **All iOS devices from version 12.5 or higher, which are (in part):**
- Apple® iPhone® 5S, iPhone® 6 / 6S, iPhone® SE / SE 2, iPhone® 7/7 +, iPhone® 8/8 +, iPhone® X, iPhone® XR, iPhone® XS, iPhone® 11/11 Pro, iPhone® 12/12 Pro
- Apple® iPad® from 5th generation (iPad Air) or newer, including all iPad Mini from 2nd generation
- Apple® iPad® Pro from 1st generation or newer
- Apple® iPod Touch® from 6th generation or newer

Note:

Some newer iOS devices without the classic 3.5mm headphone jack and with the

newer Lightning / USB-C connector also work perfectly with the eSense. You either need an original **Apple USB-C** (<https://amzn.to/2OQYssu>) or **originalen Apple Lightning** (<https://amzn.to/2SJVg37>) to 3.5 mm connection adapter (not included in the scope of delivery of the eSense). Alternatively, you also can use any other adapter with a DAC chip. We recommend this adapter on Amazon: <https://amzn.to/2SnAUA1>.

Additional note Siri:

Please note that Siri can NOT be activated while you do a measurement with the eSense app (this applies to all eSense sensors). Otherwise a running measurement can be disturbed and your values be wrong therefore. You have to deactivate Siri YOURSELF (our app can't do this due to the settings of Apple).

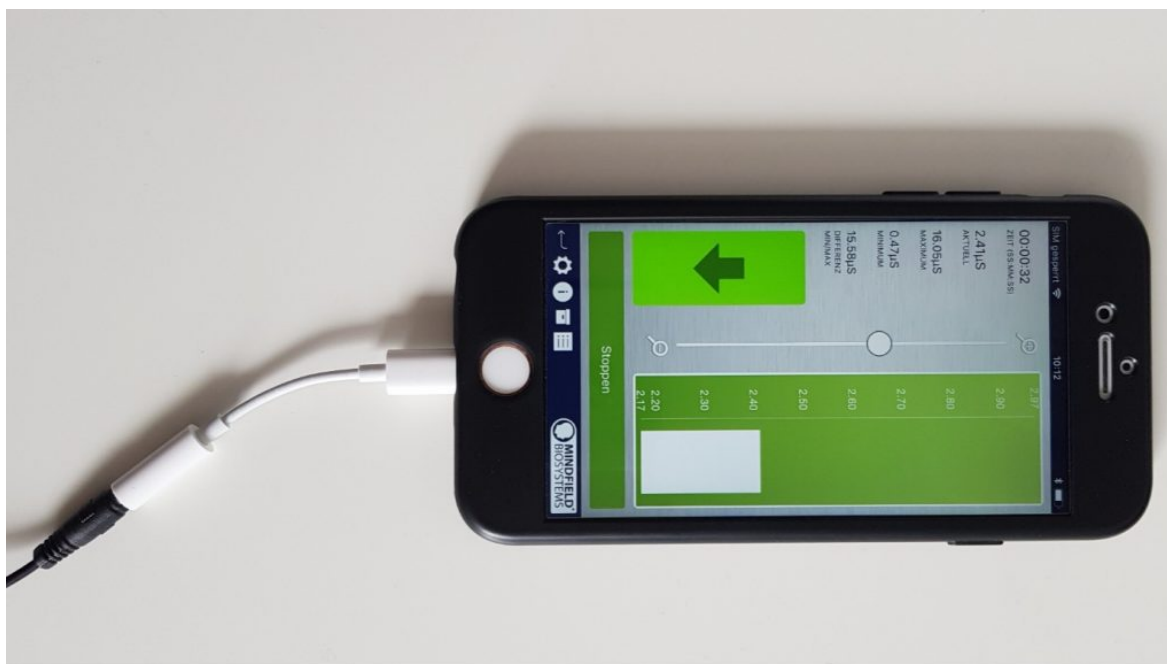
In order to deactivate Siri go Settings -> (> Siri and deactivate > (the exact steps can vary depending on the version of iOS).

Important notice on iOS devices and the eSense Pulse:

Your iOS device needs to support **Bluetooth 4.0 LE** (sometimes also referred to as **Bluetooth Low Energy** or **BLE**) which is supported from iOS 5. But we recommend the devices listed above. We recommend the devices in the list above.

Important notice on Android devices for the eSense Respiration, Skin Response and Temperature:

The eSense works via the **microphone input**. If you have iOS 7 or higher, you have to give the eSense app permission to use the microphone port, otherwise it will not work. You will be asked for permission asked during installation, so please answer the request by clicking "Yes" or "Allow". After installation, you can make this setting manually: Allow the eSense app to use the microphone port in the system settings of your iOS device: >Settings -> Privacy ->>Microphone



Lightning to 3.5 mm Headphone Jack Adapter which no longer has a 3.5mm headphone jack, e.g. the iPhone X.)

Android devices compatible with the eSense

- All Android Smartphones and Tablets from Android 7.0 (Nougat)
- If you plan on purchasing a device for using the eSense, we suggest Nokia 2.4 (<https://amzn.to/3olUjyn>), a Nokia G20 (<https://amzn.to/35JPDvS>), a Motorola Moto E7i Power (<https://amzn.to/3GyOh3X>) or a Xiaomi Redmi 9a (<https://amzn.to/32WHvao>) as an inexpensive entry-level device

Important notice on Android devices for the eSense Pulse:

Your Android device needs to support **Bluetooth 4.0 LE** (sometimes also referred to as **Bluetooth Low Energy** or **BLE**) which is supported from Android version 4.3 (Mid 2013). But we recommend Android 4.4 and higher anyway. So generally, the eSense Pulse works fine with most current Android devices.

Important note about Android devices for the eSense Muscle:

You cannot use the app from the Google Play Store for the eSense Muscle. We have made a version of our eSense mobile app customized for the Muscle available for you to download as an APK. This is otherwise identical to the eSense app from the Google Play Store. [You can find more information and download the APK here.](#)

Important notice on Android devices for the eSense Respiration, Skin Response and Temperature:

Your Android device needs a **3.5 mm input for external microphones/headsets**. Most devices have this input, often included in the headphone jack. If no 3.5 mm input for external microphones is present, such as with the Google Nexus 7, you cannot use the eSense! (All iOS devices specified above have this input).

Alternatively, you also can use any other adapter with a DAC chip. We recommend this adapter on Amazon: <https://amzn.to/2SnAUA1>.

Here are **some Android devices we tested** and can confirm that they **work well** with the **eSense Pulse, Respiration, Skin Response and Temperature** (Whitelist). (This list is only a very small sample and most available Android devices worldwide work fine with the eSense).

- Google Pixel 2 (Smartphone)
- Huawei P10 (Smartphone)
- Huawei Honor 9 Lite (Smartphone)
- Motorola Moto E7i Power (<https://amzn.to/3GyOh3X>) (Smartphone, our recommendation)
- Nokia 2.4 (<https://amzn.to/3oIUjyn>) (Smartphone, our recommendation)
- Nokia 3 (Smartphone)
- Nokia 5 (Smartphone)
- Nokia G20 (<https://amzn.to/35JPDvS>) (Smartphone, our recommendation)
- Samsung Galaxy S7 (Smartphone)
- Samsung Galaxy S8 und S8+ (Smartphone)
- Samsung Galaxy Tab S2 (Tablet)
- Samsung Galaxy Tab A 2018, 10.1" (Tablet)
- TECLAST P80X (Tablet)
- Xiaomi Redmi 9a (<https://amzn.to/32WHvao>) (Smartphone, our recommendation)

The following Android devices will NOT work with the eSense Respiration, Skin Response and Temperature (Blacklist). There may be a few other devices not on this list which will not work. When in doubt, please check the Microphone jack as described above!

- Google Nexus 7 (no build in 3.5mm microphone, just a headphone bush)
- Amazon Fire 8 HD (before model 2018 with model no.: KFKAWI, no signal)
- Huawei Honor 6A (strange “breakdowns” in signal during the session, unique behavior of this device, never seen before, maybe the test device is defective?)
- Lenovo Tab M10 HD (app is not starting)

33. eSense Web App

In addition to the app, we have also developed an eSense web app that mirrors and supplements the app. You can use this with the account and plans mentioned above.

You can analyze your recorded data (with the basic plan) or even transfer your data to a PC in real time (live streaming with the premium plan).

The main advantage of this is that you can see the graph even better with a large screen and enlarge individual areas and have more advanced analyze features.



eSense Web App with a live measurement with the eSense Pulse

With the eSense Web App, you can also view measurements from several and different eSense simultaneously and in real time, which allows a professional trainer client to design the workflow.

You can find the web app at <https://esense.live>. There you can login with the same account (username and password) as for the eSense app. For more information on the eSense Web App and its capabilities, see also our **article on streaming eSense data**.

34. Account and Cloud

You can register your own, free account for the eSense app and book plans. You can also benefit from free, regularly added procedures without booking a plan. Thus, we recommend using the app with an account. With the plans you can mainly use the cloud and its functions and get also access to the eSense web app at <https://esense.live>.

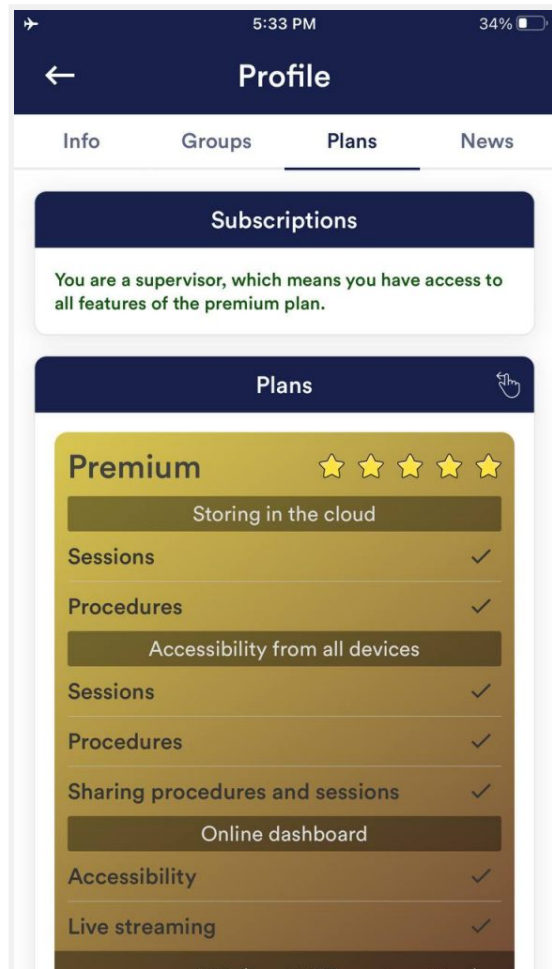
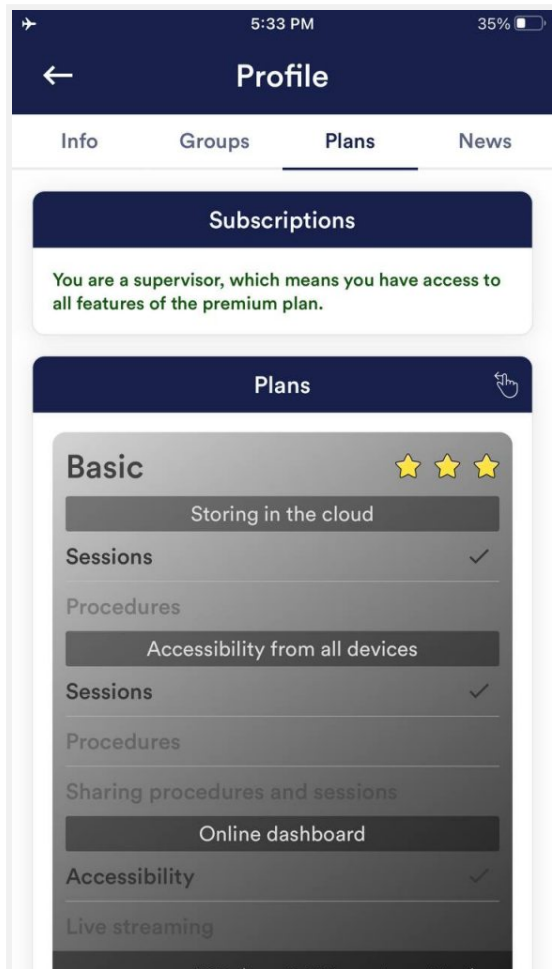
With the Basic plan, you can save your measurements locally and online in the cloud and thus access your measurements from all devices and from anywhere. You also get access to the eSense web app.

The Premium Plan includes all functions of the Basis Plan. In addition to your measurements, you can also save your custom procedures online in the cloud and thus access your procedures from all devices. (Attention: Technical limitations from Apple unfortunately do not allow the upload (and thus the synchronization) of audio files. The synchronization of picture and video files is possible, however).

You can also share your measurements with other users as Premium plan user. You also have the option to live stream your data to the eSense Web App in real time. To do this, activate “Real-time data transfer to eSense Web App” in the settings at the bottom.

These plans can be used, among other things, to design a trainer’s client’s workflow. You can find an overview of the account and the cloud in our **account comparison article**.

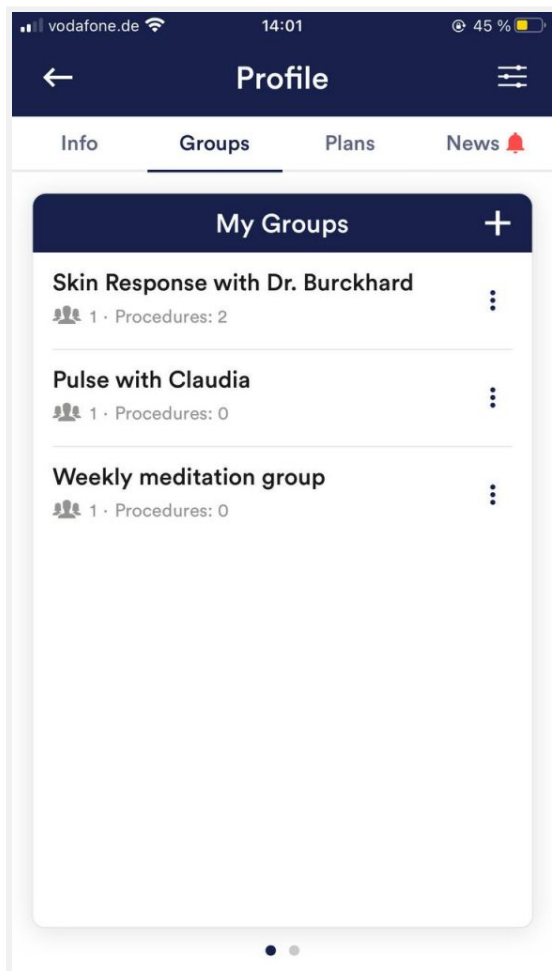
You can book the plans in our app in the profile tab:



Plans in profile tab

35. Groups

The accounts enable you to create your own groups or to join other groups. This allows you to share your recordings with your friends. Or you can work with a trainer as a client since you can share your recordings with the trainer.



Create a group

Tap on the plus symbol to create a group.

Edit a group

Tap on the 3 dots next to the group name. You can then (if authorized) view and remove the members of the group or add new members.

You can also change the title of the group or delete the group.

36. Privacy policy

The eSense App does not collect any personal data, such as name, gender, date of birth, etc.. Each recording of measurement data is done under a general prefix such as “measurement”,

supplemented by with the eSense sensor used, the current date and time of the measurement. The recorded measurement data cannot therefore be assigned to any person.

The prefix of a recording, e.g. “measurement”, can be changed by the user in the settings and used for the assignment to a person. Users can decide whether to change this prefix to their name, for example. Then each measurement and also each CSV file exported from it contains the name of the user in the file name.

Access rights within the eSense App

- **Microphone input:** Access to the microphone input is required to receive measurement data from the eSense sensor at all. This access is mandatory.
- **Access to media library:** Access to photos, music, and videos is only required if you want to use your own photos, music, and/or videos in the eSense App. The eSense app should be used as feedback. It is also possible to use only the by the app supplied media.
- **Access to the location:** The access to the location (activation of GPS) is only required for the Bluetooth connection to the Magic Blue bulb (optionally available) or the eSense Pulse. This is mandatory under Android and lies outside the possibilities of the publisher of the eSense App. No standard data is collected, the standard function is not used.
- **Access to Bluetooth:** If the eSense app is used with the Magic Blue smart bulb to provide biofeedback by modifying the color and brightness of the light bulb, it needs to be connected via Bluetooth within the app. To do this, the Bluetooth function is used. For the eSense Pulse Sensor, Bluetooth is also required as it transmits the data via Bluetooth.