

Calling the smartphone after an alarm

If the alarm or backup number calls the smartphone number after an alarm has occurred, the smartphone will pick up the call and go into speaker mode. This call can be used to talk with the user or listen to what is happening in the room for an extended period of time.

The call is ended when the caretaker or user hangs up.

The smartphone app will only pick up calls from the alarm and backup number automatically for five minutes after an alarm call has been acknowledged.

Low battery sms

When the smartphone or sensor get close to being discharged, the smartphone will send a text message to the alarm number showing which of the two is in need of being charged.

Having this setting on increases the user security and reduces the risk of the sensor or smartphone running out of charge when in use.

This setting requires the alarm number is able to receive text messages.

Missing sensor sms

When the app is unable to communicate with the sensor, either because the sensor is too far away or the sensor has run out of power, the app will send a sms to the alarm number with the user name and the text *sensor missing*.

Having this setting on reduces the risk of the using the sensor when it is not connected to the smartphone.

This setting requires the alarm number is able to receive text messages.

Protect settings

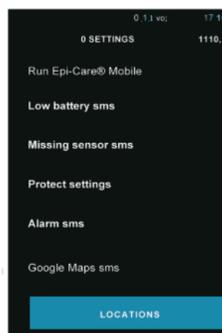
If there is a risk of the app settings being changed by accident, it is advised to activate protect settings.

When this setting is activated, a numeric code of at least one digit has to be entered twice. All subsequent attempts to change a setting will require entering the same code before the change is saved.

Remember to write the code down and store it somewhere safe.

Location based caretaker numbers

Users that are often on the move and require different caretaker numbers depending on where the user is can use the *Locations* function. The smartphone has to allow Location services and have an active data connection in order for this function to work. The app will normally call the numbers entered in *ALARMING*, however the smartphone can be configured to call a different pair of numbers when the user is in a certain area. Creating a location allows specifying an area with an alternative set of numbers; each location requires specifying at least an area and an alarm number.



Routine control

The alarm should be tested regularly. Perform powerful seizure like movements with the armband, check the smartphone goes into alarm and the right number receives an alarm call. A routine control should be performed every week, every time the phone has been rebooted, or an alarm number is changed. Test the functionality of all created locations as well. Allow ten minutes to pass between creating a location and testing it, as the smartphone has to detect the use of a new location and determine the current location before testing. Ensure the application is running on the smartphone before leaving the user unsupervised.

Limitations in range

The sensor and the smartphone have a mutual indoor range of 10 to 15 meters, depending on the surroundings. The smartphone should be placed close to the user's bed, when the user sleeps as the body can block wireless signals. The sensor will perform fast yellow blinks when it is not connected to the smartphone. When the smartphone cannot communicate with the sensor, it will give off an audible notification every 30, Second and the notification icon will turn red. When configured for it, the smartphone will send a warning sms with the text *Lost connection with sensor* and the users name to the alarm number.

Cleaning and storing

Armband and smartphone can be cleaned with a damp cloth, possibly with some rubbing alcohol. Neither armband nor smartphone should be exposed to water during cleaning and should be handled with care. The sensor and smartphone may not be worn during a shower or be lowered into water.

The smartphone must follow the user of the sensor.



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Tunstall EMERGENCY RESPONSE

The Epi-Care® Free Mobile Epilepsy Alarm

Epi-Care free Mobile epilepsy alarm

Epi-Care Free Mobile is designed to detect seizures associated with tonic clonic epilepsy. Bringing new wireless technology to the care of people suffering with epilepsy the Epi-Care Free Mobile provides second to none safety features.

The sensor, which is paired with an Android smartphone, will not only detect seizures during the night when the wearer is in bed but also when the wearer is going about their normal daily routine. This allows great freedom to not only the wearer but also to family and caregivers.

The sensor

The Epi-Care Free sensor is worn around the wrist in much the same way as a watch would be worn. The sensor makes ongoing and very precise measurements of any movement in the wrist and is able to recognise the difference between epileptic and normal movements. The sensor has a 2 way wireless connection between itself and the Android smartphone. When a seizure with motor activity occurs the sensor sends a signal to the phone. The phone will then send text messages, with location details of the wearer, and make a voice call to the designated contacts. Location based contacts can be set up, for example there could be one set of contacts for when the person is at home and another set of contacts for when the person is at work, school or college.

The sensor is connected to the phone using Bluetooth technology which gives it about a 10 metre range from the phone. It is recommended that the phone is kept close to the bed while the wearer is sleeping. Low battery alerts for both the sensor and associated phone can be setup.

The sensor is powered by a small battery which needs to be charged once a day. The charging time is about 1 hour and 15 minutes.

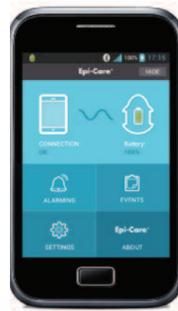
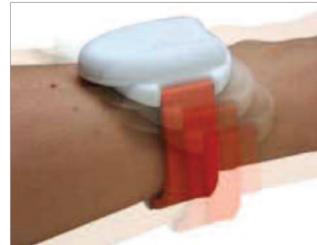
The Epi-Care Mobile App.

The Epi-Care Mobile App., which is constantly running on the Android smartphone, monitors the sensor at all times. Warnings will be given, via text messages, if the phone loses contact with the sensor, if the sensor battery is low or if a fault is detected with the sensor. A warning will also be sent if the battery on the phone needs recharging.

There is a log function built into the App. which keeps a record of events. This log, which can be viewed on the phone or emailed directly from the phone, is a very useful diagnostic tool as it allows medical staff to get precise information on the frequency of seizures.

Adults and Children

The Epi-Care Free Mobile has been developed for use with adults and teenagers. It is not suitable for children under 10 years of age. For children under this age we would recommend the Epi-Care 3000. The Epi-Care 3000 can precisely measure the motor activity associated with a seizure while the child is in bed by using a sensor or sensors fixed to the mattress.



Pairing the sensor

It is necessary to pair the sensor with the smartphone. Ensure the sensor is charged and start the application. The application will warn that it cannot find a paired sensor and help opening the Bluetooth settings page, which is used to pair the sensor with the phone.

Ensure the smartphones Bluetooth is on and select *Search for devices*. Wait until a Bluetooth device called *EpiAccelSens* appears on the list, select the *EpiAccelSens* device, enter the code **1234**, select *Done* and *OK*.

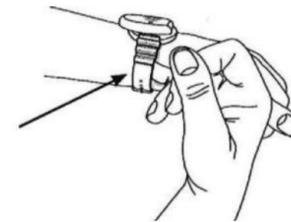
Return to the Epi-Care® application and follow the instructions for setting up an alarm number.

Setting up Epi-Care® Mobile

Sensor armband

The sensor is worn like a wrist watch. It can be worn on either the left or right wrist. The armband must be strapped tightly in order to ensure the sensor follows the movement of the wrist. It is recommended to tighten the strap until only one finger is able to slip in between the sensor and skin. The sensor does not have to point in a specific direction.

The sensor has to be charged before use.



Smartphone

Follow the instructions for using the smartphone. During the instructions a SIM card is inserted into the smartphone and it is assembled. Turn the smartphone on, start the Epi-Care Mobile application and follow the on screen instructions.

Charging

Sensor

The sensor is powered by a build on battery that has to be charged once a day. The battery is charged by using the supplied 5 Volt micro-USB charger. Take the armband off before charging the battery. Connect the charger to a 220 Volt outlet and put the micro-USB connector into the charger port on the sensor, the port is located opposite the pointy end of the sensor.

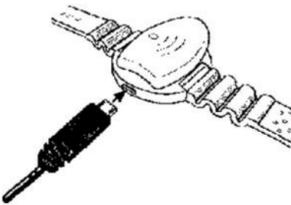
The sensor blinks slowly with a yellow light when the battery is charging.

The battery does not have to be fully discharged before charging. The sensor can be left in the charger longer than necessary without damaging the battery.

The charge time is approximately 1 hour and 15 minutes, depending on how discharged the battery is.

When the sensor is unplugged from the charger, it will automatically start after a few seconds. The sensor does not have to be turned on or activated and will remain active until the battery is discharged.

The sensor has to be recharged before use, if it has not been in use for over one day.



Smartphone

The smartphone should be left plugged into the charger when possible.

A good rule is to always place the smartphone next to the users bed and charge it when the user sleeps.

Battery and charge time for the smartphone depends on how much it is used and the functions enabled in the application.

The alarm does not work when the smartphone is off or discharged.

The alarm does not work if the battery in the sensor is discharged.

The application menu

The application shows if it is connected to the sensor and the battery level of the sensor in the upper half. The four icons in the lower half of the screen can be used to navigate to the following areas of the application:

1. Alarming; 2. Events; 3. Setting; 4. About.

Please notice it is always possible to hide the application by pressing the *"HIDE"* button in the upper right hand corner. It is possible to return to the previous screen by pressing the back arrow in the upper left hand corner.

Alarming

This section is used to enter the number the application calls when an alarm occurs. It is possible to enter a back number, which is used if the alarm number does not respond.

It is possible to write the users name in the User name field, the name will be used in all messages send from the application. Alarm calls can be delayed by moving the slider under the text Alarm delay seconds. This feature allows the user to cancel false alarms.

Alarms are cancelled by pressing the power button on the smartphone a couple of times before the set delay time has passed. The application automatically returns to normal mode after an alarm has been cancelled.

The call events triggered by an alarm are described in depth on page 8.

The alarm does not work, when an alarm number has not been entered.



Settings

The settings section allows controlling the application behaviour such as when a text message shall be send and specifying call locations.

A longer description of each point is available. **Run Epi-Care® Mobile:** Controls if the application shall communicate with the sensor and call the alarm number when an alarm occurs. This point has to be selected when the alarm is in use.

Low battery sms: Controls if the application shall send a message when the sensor or smartphone battery is close to being completely discharged.

Missing sensor sms: Controls if the application shall send a message when it has lost the connection to the sensor.

Protect settings: Used a code to protect all settings in the app, read more in the *Protecting settings section*.

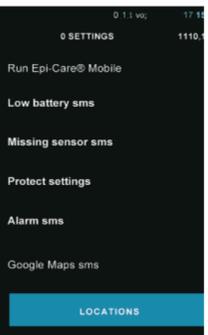
Alarm sms: Controls if the application shall send a message to the alarm number before calling, when an alarm occurs.

Google Maps sms: Controls if the application shall send a message with a link to the location of the user, after it has called the alarm number.

This function uses a combination of the GPS in the smartphone and a data connection to determine the location.

The smartphone has to allow Location services and have an active data connection in order for this function to work.

Locations: This function can be used to make the alarm contact different numbers depending on where the user is located. The function is described in the section called Controlling alarm locations.



About

Shows an about screen for the application, this includes a version number for the app and other miscellaneous information. **The alarm does not work, when Run Epi-Care® Mobile is not selected.**

Alarm calls

The smartphone app gives of an alarm tone and calls the entered alarm number, when an alarm occurs. False alarms can be stopped by setting an alarm delay in ALARMING. It is not possible to stop the alarm calls if a delay has not been set. The caretaker with the phone receiving the call has to pick up the phone and hang up again in less than 20 seconds to confirm receiving the call. If the app does not register calls being hang up, it will call the backup number after three attempts. The smartphone is on speaker mode during alarm calls, enabling the caretaker to hear what is happening around the smartphone before hanging up. The smartphone will send text messages with each alarm, the messages depend on the chosen settings in the application.

A maximum of six calls is performed, three for each number, if the calls are not answered.