University
of Basel

User Manual

MOBITEC-GP smartphone app

MOBITEC-GP

Legal notice

V E L U X   S T I F T U N G

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1. Introduction

This app measures two important aspects of mobility, both of which are important indicators for physical and emotional health, quality of life, morbidity and even mortality.

These aspects are:

- Your Life-Space mobility, in terms of the **area** in which you moved over the study period, the **total distance** you travelled during the study period as well as the **maximum action range** (maximum distance that you visited away from your home). In the app, those metrics are referred as "Life Space Assessment".
- Your mobility capacity (in terms of walking speed). In the app it is referred as "Gait Assessment".

To ensure a reliable assessment of your life-space mobility **8 days** (= 8 x 24 hours) are needed. During this time, you should carry your phone with you when you are outside of your home as much as you can. For your information: The naturally incomplete first and last measurement days will be excluded from the **analysis** of your mobility performance; this will be based on **7 full days**. That means you can start the assessment **whatever time during the day** you wish.

The «**Gait Assessment**» lasts **30 minutes**. For this assessment, you should just go for a walk, ideally at a flat area away from buildings, vehicle traffic and dense trees.

During the **Gait Assessment** you should put your phone as close as you can to your hip (either in the front pocket of your trousers or in the front/side pocket of your jacket). For the rest of the time, during which the **Life-Space Assessment** is running on the background, as long as you **carry your phone with you every time you leave your house**, you can put your phone anywhere you want, e.g. in your backpack/handbag/purse etc.

In order to evaluate your progress and/or timely detect negative changes, both assessments should be conducted **regularly**, ideally over months or even years.

Always pay attention to your battery level. It is usually enough to charge your phone one a day. This should happen preferably **overnight**, so that you have enough battery life to conduct the assessments during the day.

You can **generate a report** that contains an overview and simple evaluation of the results of your last ten assessments anytime. You can then show and discuss this report with your general practitioner (GP).

The **data collected during the assessments are stored only locally (on your smartphone) and they are protected via a code number**. This means that you are the only one that has access to your data. The generation of the performance report also happens directly on your smartphone and no data are transferred to other locations/users.

Sections 2 till 5 of this manual contain instructions for the standard use of the app. Section 6 contains instructions that are meant for persons who use the app for research purposes and wish to export raw data.

2. Download and installation of the app

The app is available upon request. You can submit your request here: https://mobility.dsbg.unibas.ch/de/ressourcen/mobitec-gp-app/. After you submit your request you will receive an email including the necessary information regarding download and installation. The app runs only on Android smartphones (version 8 or newer).

3. First steps

3.1 Starting the app

When you start the app for the first time, please stand **outside your house**. The app starts by tapping on the MOBITEC-GP icon.

1

Tap the MOBITEC-GP icon to start the app

2

This is the **home screen** of the app when it starts up for the first time.

START GAIT ASSESSMENT

START LIFE-SPACE ASSESSMENT
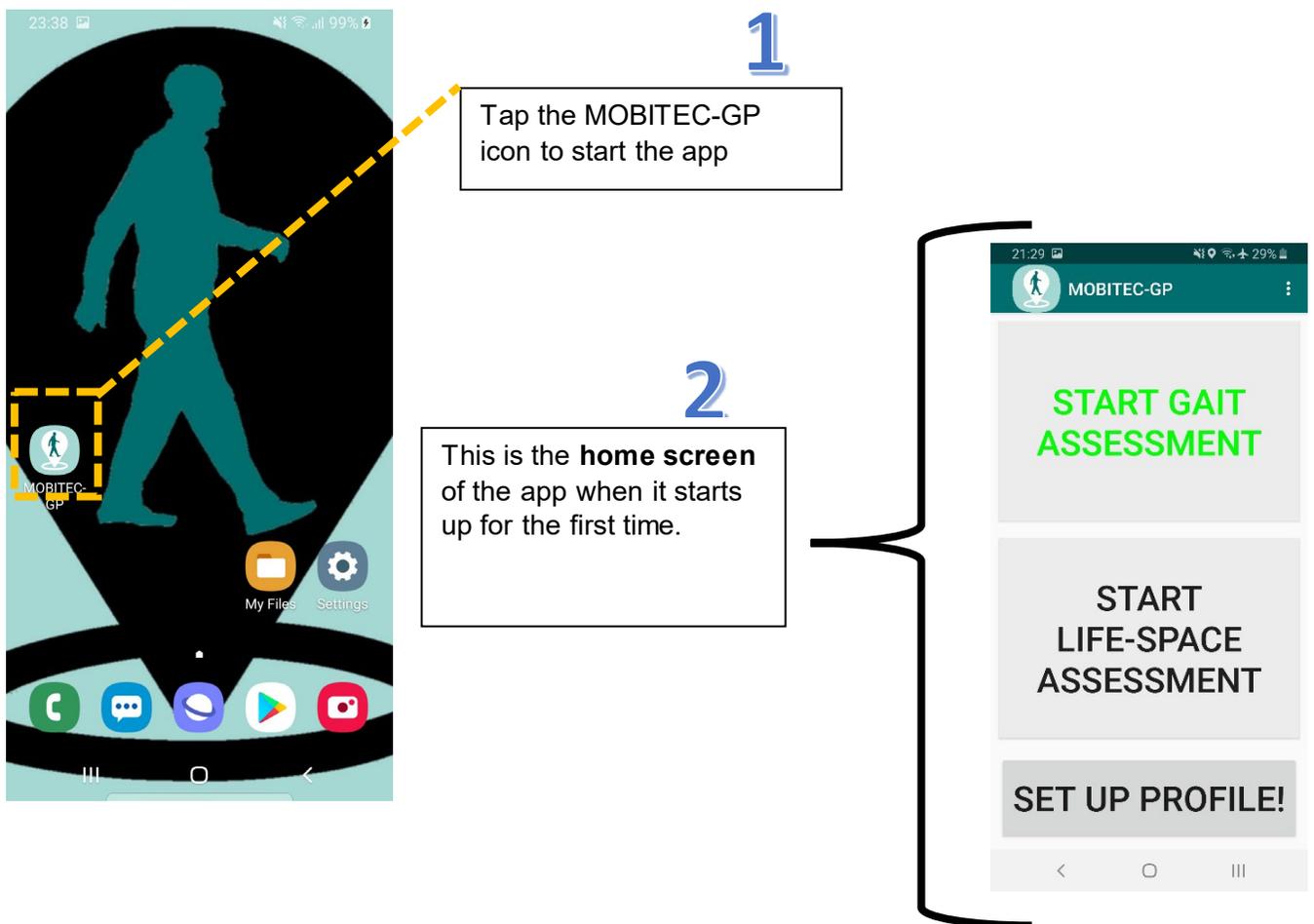
SET UP PROFILE!

3.2 Profile set-up

When you set up your profile, please make sure that you are standing outside your house`s entrance because you need to have good GPS signal.

1

Tap this button at the bottom of the **home screen**. This will bring you to the screen where you can set up your profile.

SET UP PROFILE!

2

The field «Unique User-ID» is relevant only for research purposes. You can enter a random number of your choice or just leave it empty.

3

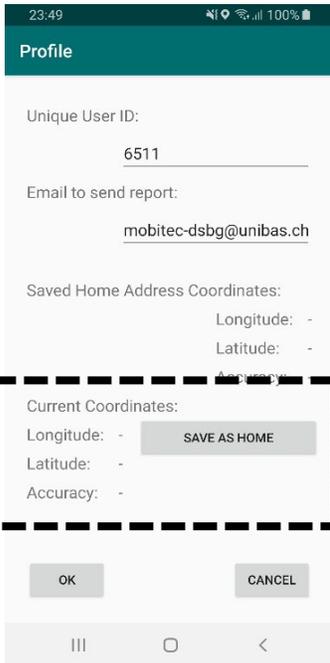In this field you can fill in the email address to which the performance reports should be sent. This can be your personal email address or any other, e.g. the email address of your GP.

23:49   100%

Profile

Unique User ID:

6511

Email to send report:

mobitec-dsbg@unibas.ch

Saved Home Address Coordinates:

Longitude: -
Latitude: -
Accuracy: -

Current Coordinates:

Longitude: -   SAVE AS HOME
Latitude: -
Accuracy: -

OK   CANCEL

4

This section regards finding and saving your home location. The minus "-" signs indicate that there is no home address saved yet.

23:49   100%

Profile

Unique User ID:

6511

Email to send report:

mobitec-dsbg@unibas.ch

Saved Home Address Coordinates:

Longitude: -
Latitude: -
Accuracy: -

Current Coordinates:

Longitude: -   SAVE AS HOME
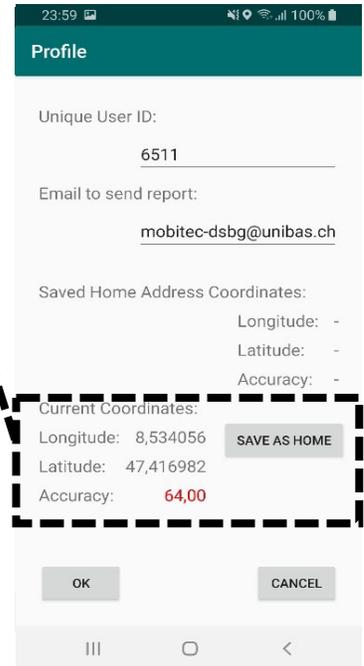Latitude: -
Accuracy: -

OK   CANCEL

5

Signal has not been found yet (no numbers are to be seen). Please wait a bit longer and preferably move (e.g. just a couple of steps away from your building) a bit, in order to improve reception.
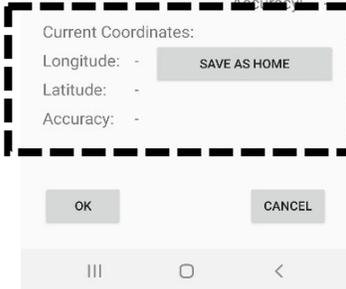
6

Location Signal found!

It would be advisable to wait a bit longer until the number turn **green**.
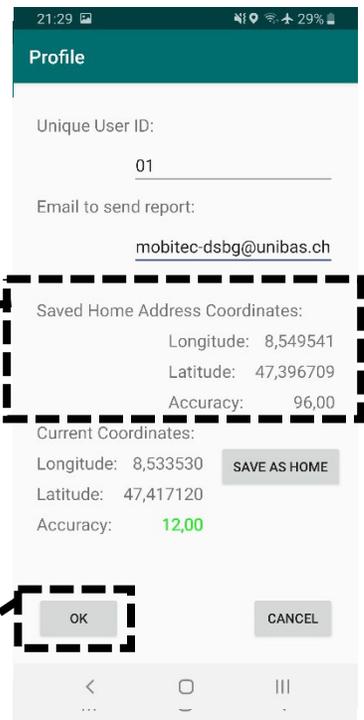
Then tap "Save as Home"

7

Please confirm that you are at home!

If that is true, tap "Yes"
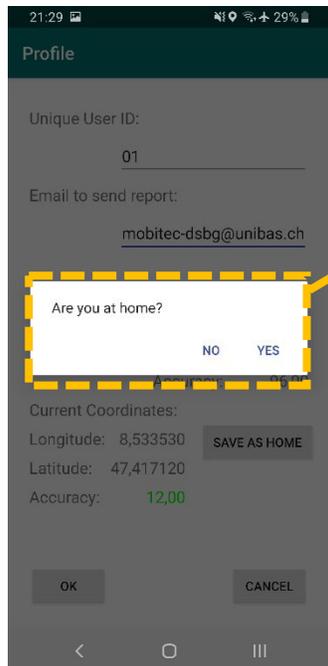
8

If you tapped «Yes», then the coordinates are saved!

You have successfully saved your home location!

(If you tap "Save as home" another time, the data will be updated.)

9

Tap «OK» to finalize your profile set-up and return to the **home screen**.

4. Mobility Assessments

4.1 Life-space mobility assessment

Start a Life Space Assessment by tapping the corresponding button on the **home screen**. The assessment will run in the background for the next 8 days (=8 x 24 hours). You can return to the **home screen** anytime.

1

Tap here to start a Life Space Assessment

2

The app will switch to the Life Space Assessment screen and display details about it, such as the time remaining to complete the assessment.

You can tap "Back" to switch to the home screen – the assessment will continue running in the background.

3

Back on the home screen, the button is green when an assessment is running.

Optional

If, for any reason, you want to pause or terminate the assessment, you can do it by tapping the button "MANUAL STOP".

In order to have a complete assessment of your mobility, please start the Life-Space Assessment again as soon as possible.

4.2 Walking speed assessment

In order to conduct a walking speed assessment, please take time for a **30-minute stroll**. Start the walking speed assessment by tapping the respective button on the home screen (see figure on the next page). The assessment will run in the background for 30 minutes while you walk. You can go back to the home screen anytime (but preferably before you start walking so that you do not interrupt the assessment).
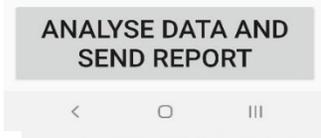
Please pay attention to the following point regarding the **walking speed assessment**:

- Please do not walk with your dog, as dogs can affect your walking speed and/or interrupt your walking.
- Please conduct the walking assessment alone (i.e. do not walk together with another person) as this could also affect your walking speed.
- Please make sure that you are already outdoors (preferably already at a park or similar location) before you start the walking speed assessment.
- Please choose a flat area away from buildings, vehicle traffic and dense trees.
- If possible, please conduct the walking speed assessment when it is not rainy or very cloudy.
- As soon as you arrive at your chosen location, start the Gait Speed Assessment. Put your phone as close as you can to your hip (either in the **front pocket of your trousers or in the front/side pocket of your jacket**). Then begin your stroll!
- Walk at a speed that is comfortable for you and that you can keep throughout the assessment duration (30 minutes).
- Try not to take any breaks. However, should you feel tired, you can stop walking any time and take a rest; you can also sit for a while, e.g. on a park bench. The assessment will keep running during the resting period.
- Should you face symptoms such as breathlessness, pain or dizziness, stop the assessment immediately, call for assistance and consult a physician.
- After 30 minutes the smartphone will vibrate shortly, indicating that the assessment is over.
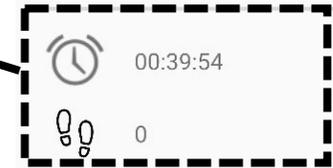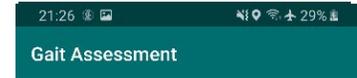
1

Tap here to start the walking speed assessment.

START GAIT ASSESSMENT

MOBITEC-GP

LIFE-SPACE ASSESSMENT RUNNING

ANALYSE DATA AND SEND REPORT

2

Gait Assessment

00:39:54

0

0.00 m/s

0

BACK   MANUAL STOP!

The app will switch to the Gait Speed Assessment mode and display details about it, such as the time remaining to complete the assessment or the number of steps you have taken so far.
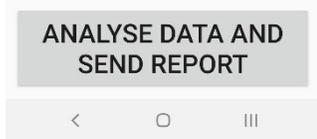
You can tap "Back" to switch to the home screen – the assessment will continue running in the background.

3

MOBITEC-GP

GAIT ASSESSMENT RUNNING

Back on the home screen, the button is green when an assessment is running.

LIFE-SPACE ASSESSMENT RUNNING

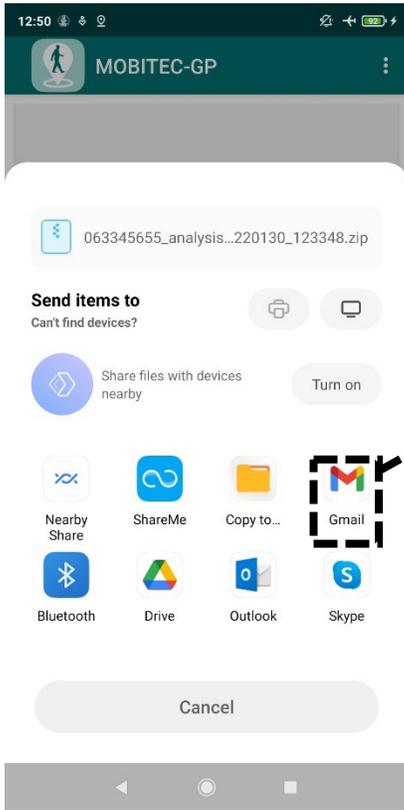ANALYSE DATA AND SEND REPORT

Optional

If, for any reason (e.g. you bumped into a familiar person that you want to greet, it suddenly starts to rian etc.), you want to pause or terminate the assessment, you can do it by tapping the button "MANUAL STOP".

In that case, please try to conduct another (complete) walking speed assessment at the next possible occasion (e.g. later on the same day or the day after)

5. Report generation and dispatch

You can generate a performance report, which summarizes the results of the last 10 walking speed and life-space assessments at any time. To do that, tap "ANALYSE DATA AND SEND REPORT" on the **home screen**.

1

Tap here to generate the report.

2

The phone will need some time to analyse your data. Please do not interrupt this process. You can place your fingers at the top of the screen and swipe down in order to see the progress of the data analysis.

3

As soon as the data analysis is finished, several options about sending the report will appear. Choose your preferred email provider in order to send the report as an email attachment (in form of a PDF file).
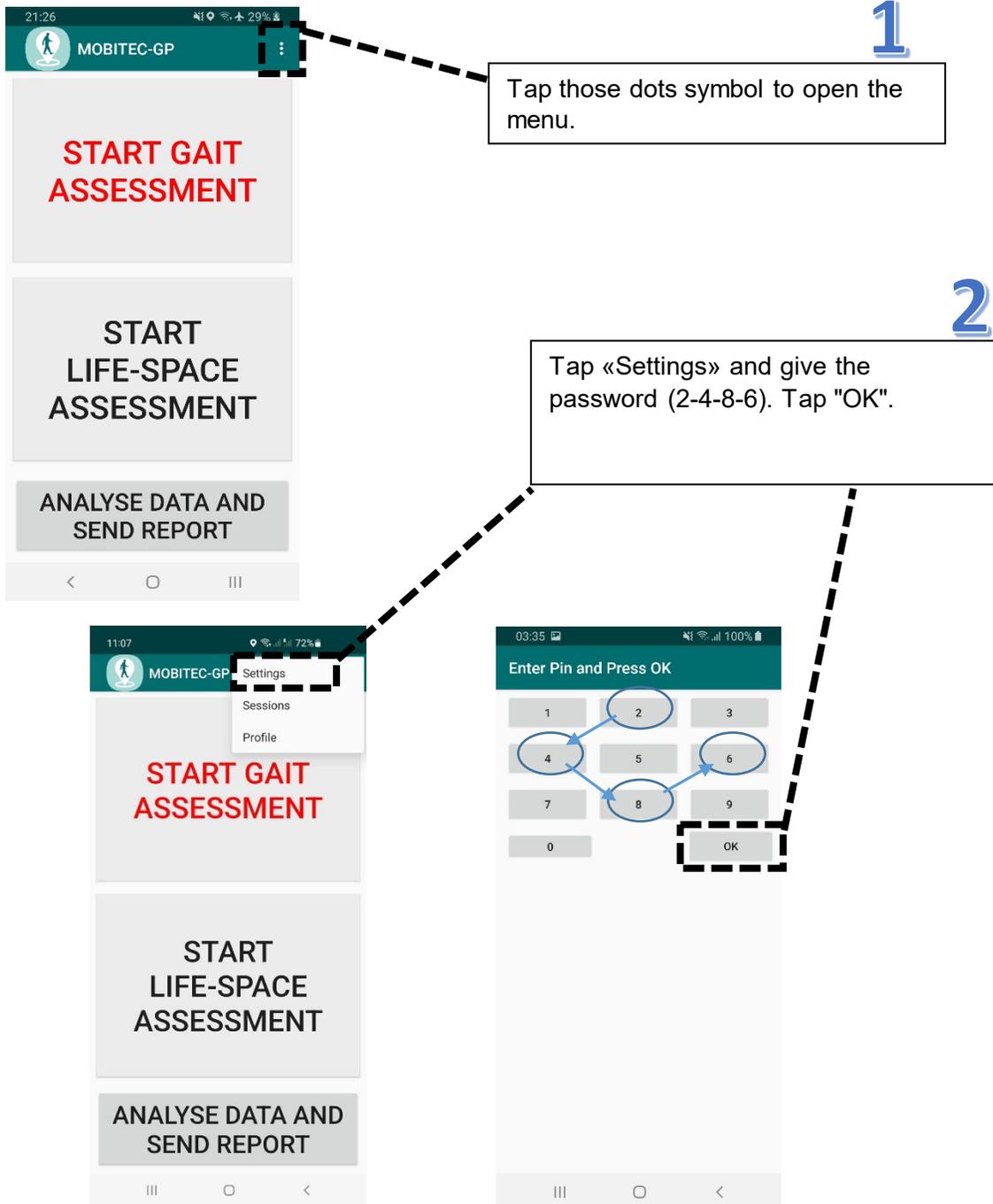
4

An email with the PDF report attached to it will be automatically created. The recipient email address will also be automatically filled in (based on the information you entered in your "Profile", see chapter 3.2). Once you have checked all details, please tap on the "send" button.
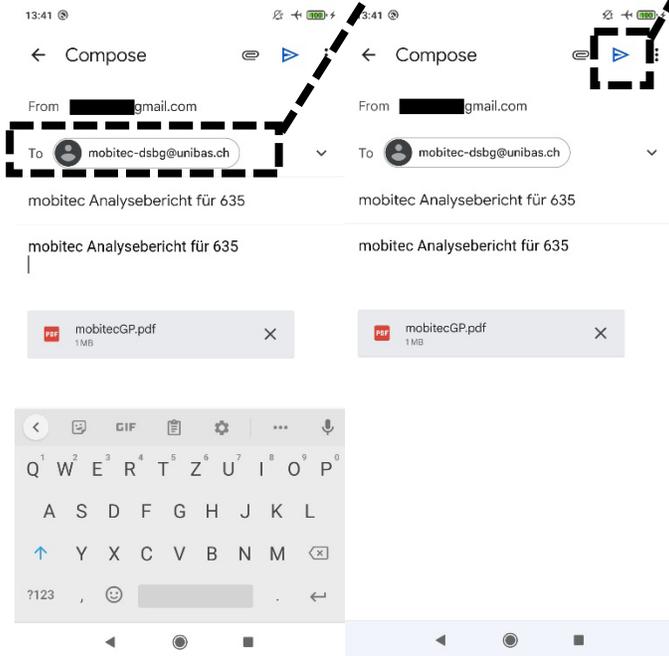
6. Basic settings, data export and data deletion

This section is relevant only when using the app for **research purposes**. Use the menu «Settings» to **change basic settings, export or delete data**.

1

Tap those dots symbol to open the menu.

START GAIT ASSESSMENT

START LIFE-SPACE ASSESSMENT

ANALYSE DATA AND SEND REPORT

2

Tap «Settings» and give the password (2-4-8-6). Tap "OK".

MOBITEC-GP
Settings
Sessions
Profile

START GAIT ASSESSMENT

START LIFE-SPACE ASSESSMENT

ANALYSE DATA AND SEND REPORT

Enter Pin and Press OK

| 1 | 2 | 3 |
4	5	6
7	8	9
0		OK

6.1 Basic settings

If you use the app for research purposes, you can change the basic assessment settings (e.g. duration of the gait assessment, duration of the life-space assessment, sampling rate). However, the performance report will only be correct if the basic settings remain unchanged.
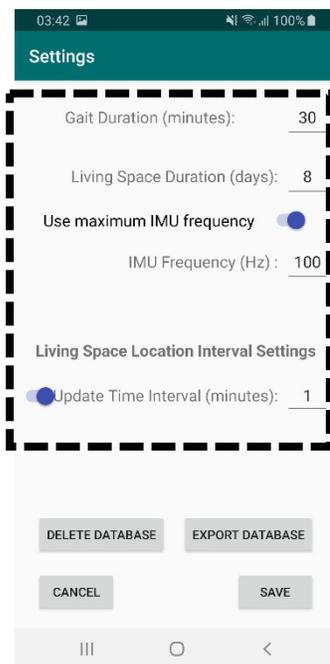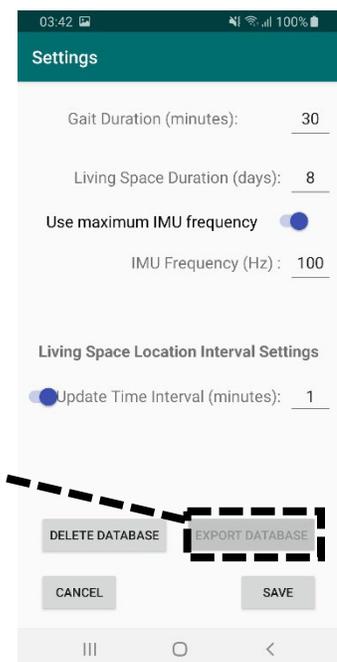

Check if the basic settings are correct (30 minutes, 8 days, 100Hz)!

6.2 Raw data export
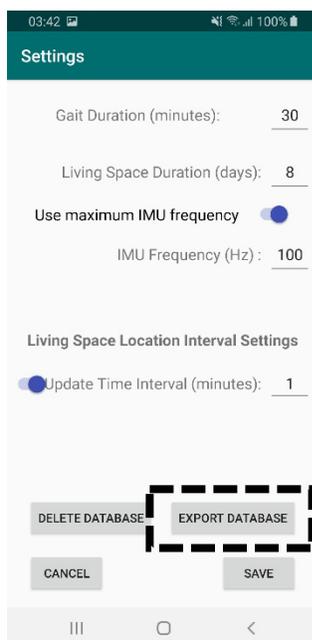
1 Tap "Export database" to export the raw data of the assessments.

2 The button will turn grey until the export is complete.

The data will be then saved locally on the smartphone in a folder named "mobitecGP". You can find this folder under «Documents»

Connect the smartphone with your computer (using charging cable via the USB port). Using your computer`s explorer you can find the "mobitecGP" folder and save it on your computer. The exact location of the MOBITEC-GP folder can slightly vary depending on the brand of your smartphone.
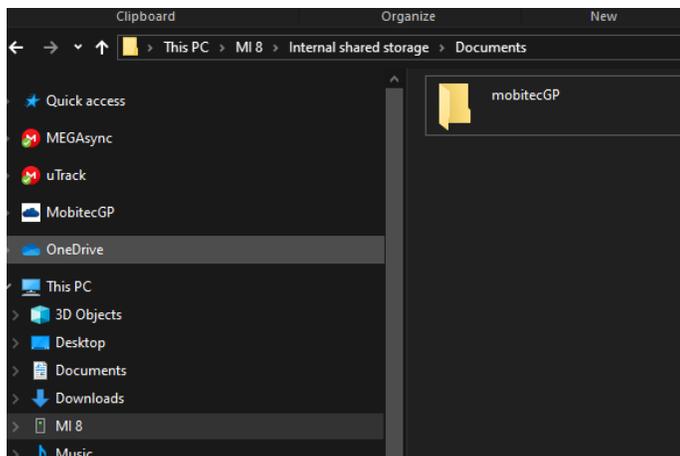
- Example Samsung S8

At the Samsung S8 go to:
"This PC" → "Galaxy S8" → "Phone" → "Documents"
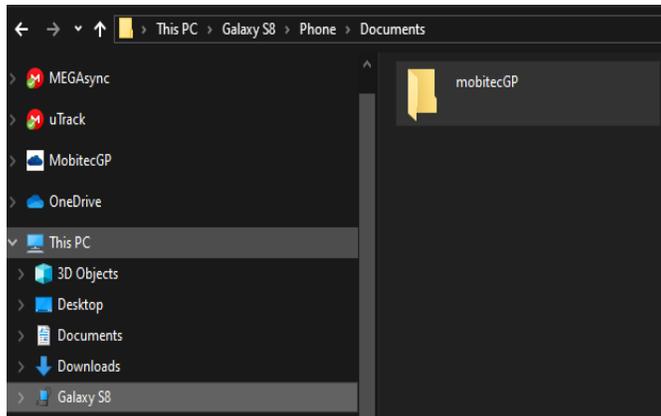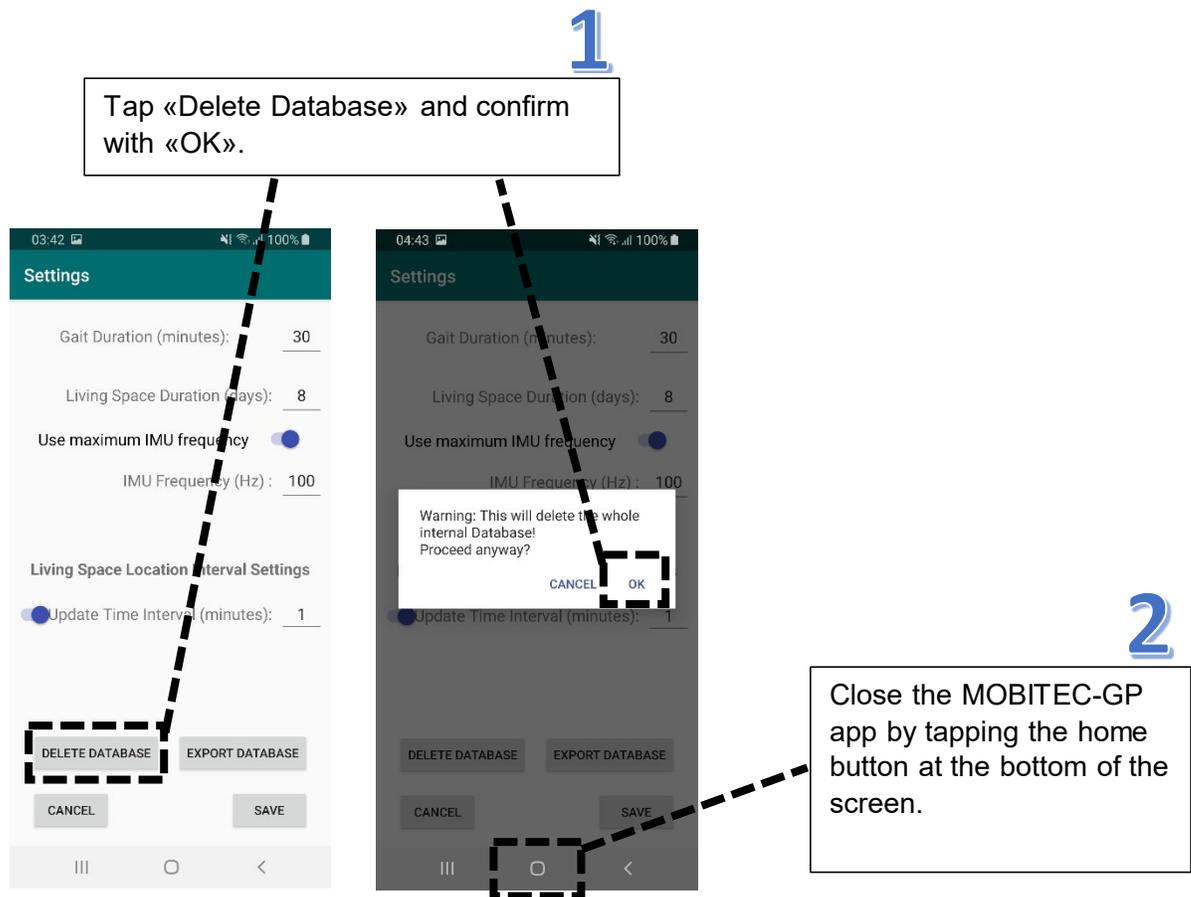

- Example Xiaomi Mi8

At the Xiaomi Mi8 go to:
"This PC" → "MI 8" → "Internal shared storage" → "Documents"

6.3 Delete files

You can delete your collected data via «Settings».

1

Tap «Delete Database» and confirm with «OK».

2

Close the MOBITEC-GP app by tapping the home button at the bottom of the screen.

Open the File Manager of your smartphone (depending on the brand it can be called «File Manager», «My Files» or similar) in order to delete the folder «MOBITEC-GP» which is located inside the folder «Documents».

The exact location of the MOBITEC-GP folder can slightly vary depending on the brand of your smartphone:

- Example Samsung S8

Tap «My Files», then «Internal Storage», then "Documents" and then tap longer on "MOBITEC-GP" to select this folder. Then tap «Delete» at the bottom right of the screen.
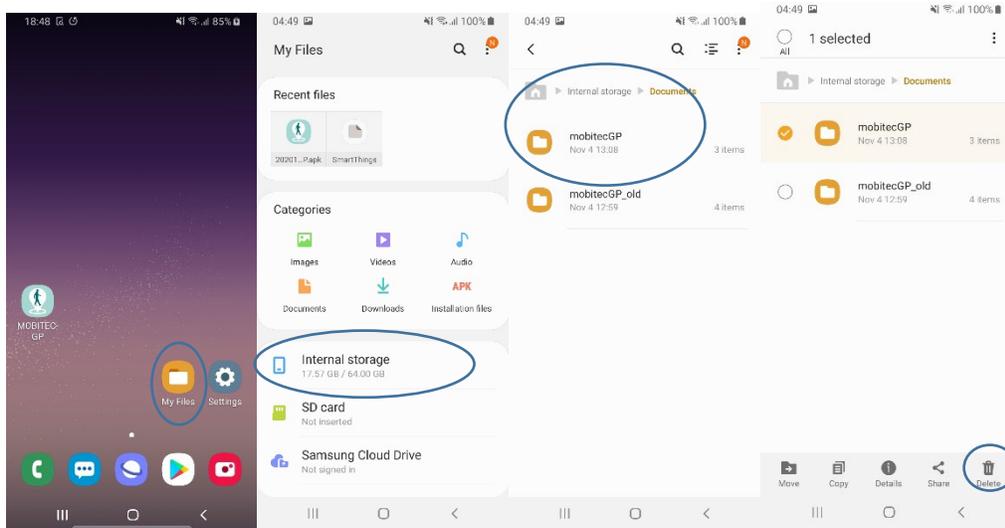
- Example Xiaomi Mi8

Tap «File Manager» and then the Folder Symbol on the top right of the screen. Go to "Documents" and tap longer on «MOBITEC-GP» to select this folder. Then tap "Delete".