

study coordinator guide

Sensor-Based Monitoring of Congestive Heart Failure Patients

table of contents

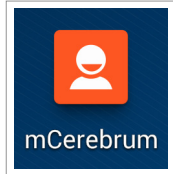
<u>phone setup</u>	2
<u>wrist sensor setup</u>	4
<u>Microsoft Band setup</u>	5
<u>Omron scale setup</u>	7
<u>Omron blood pressure setup</u>	8
<u>medication setup</u>	9
<u>study setup</u>	10
<u>wearing the wrist devices</u>	11
<u>start day</u>	11
<u>verifying sensor data collection</u>	12
<u>CHF protocol</u>	12
<u>using the app</u>	13
<u>charging the devices</u>	14

phone setup

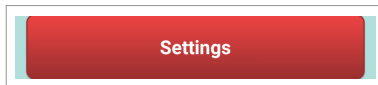


download the config file

1. On the smartphone, open the mCerebrum app.

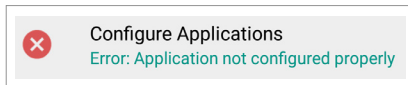


2. On the mCerebrum app startup screen, tap the *Settings* button.

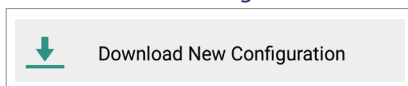


If asked for a password to access Settings, enter the password: **1234**

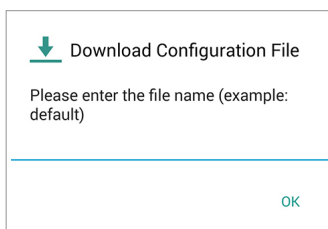
3. Tap *Configure Applications* to access the System Settings menu.



4. Tap *Download New Configuration*.



5. You will be prompted to download the config file. Please enter the config file name and tap *OK*.



install/update apps

1. Return to the System Settings menu and tap *Applications*.
2. On the Install Applications screen, tap the *Check Updates* button at the bottom of the screen.



3. If any apps listed show a red X icon (✖), tap the app in the list then tap *Install*.
 If any apps listed show a yellow caution icon (⚠), tap the app in the list then tap *Update*.
 When every app shows a green check mark (✔), this means all apps are installed and up-to-date. Tap *Close*.

phone setup (continued)



configuring the phone sensor

1. Once all applications are installed and up-to-date, return to the System Settings screen and tap *Settings*.
2. Tap *PhoneSensor*.
3. Tap to place a check mark in the box next to Default Settings.

Default Settings



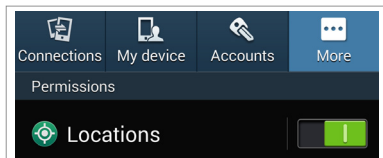
4. Tap *Save*. The phone sensor is now configured.

IMPORTANT: To ensure high-quality data collection, the GPS feature of the smartphone must be set to *High Accuracy Mode*.

1. Open the Settings app on the smartphone.



2. Under the *More* tab in the Settings app, tap *Locations*.



3. On the Locations page, tap *Mode*.

Mode

4. On the next page, tap *High accuracy* to set the GPS to High Accuracy Mode.

High accuracy
 Uses GPS, Wi-Fi, and mobile networks to
 estimate your location.



wrist sensor setup



configuring the wrist sensor

ID number



The ID number is found on the back of the wrist sensor (must be removed from the wrist band).

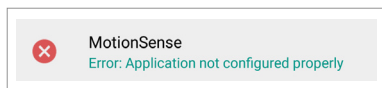
charging



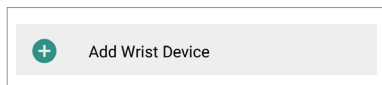
To charge the wrist sensor, place it face-down on the center of the charger. The sensor is fully charged after 3 hours.

Note: The blue LED lights around the ring of the charger will light up to confirm the sensor is charging. You may need to adjust the position of the sensor carefully in order to find the correct charging position.

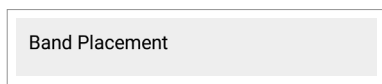
1. If necessary, go to the System Settings screen in the mCerebrum app and tap *Settings*.
2. Tap *MotionSense* to access the MotionSense Settings screen.



3. Tap *Add Wrist Device*.



4. On the MotionSenseWrist Settings screen, tap *Placement* and select *Left Wrist* or *Right Wrist*.

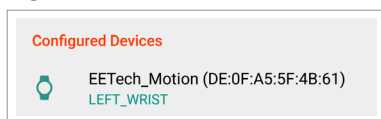


5. Under the Available Devices heading, you should see the ID number of your device. Please tap the ID number.

Note: Make sure you are selecting the ID number from the wrist sensor that corresponds with this phone. If you do not see the device in the list:

1. Ensure the battery is charged.
2. If the device is actively paired to a previous phone, turn off power on the previous phone.

6. With the device ID number selected, tap *Save*.
You should now see the appropriate wrist sensor listed under the Configured Devices heading on the MotionSense Settings screen.



7. Tap *Save* again to complete wrist sensor setup.

Microsoft Band setup



ID number



The ID number of the Band is the top line of text found on the white sticker label.

charging port



The charging port is on the clasp. Attach the charging cable to the clasp with the gold connector points aligned.

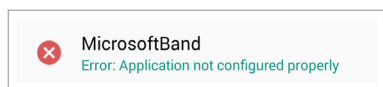
home button



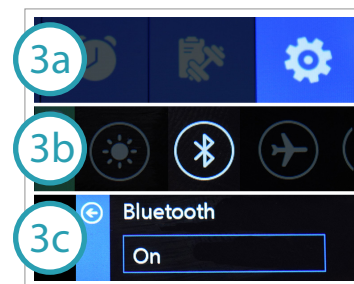
The Home button is found in the center below the display screen.

pairing the devices

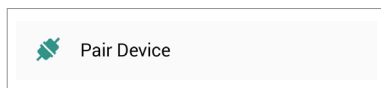
1. If necessary, go to the System Settings screen in the mCerebrum app and tap *Settings*.
2. On the Application Settings screen, tap *MicrosoftBand*.



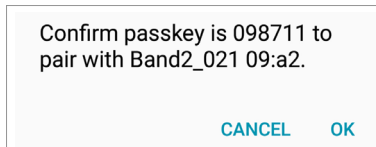
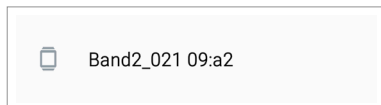
3. Next, you will need to set the Microsoft Band to Pairing Mode:
 - a. Swipe to scroll on the Microsoft Band display screen until you find the gear icon. Tap the gear icon.
 - b. Next, tap the Bluetooth icon.
 - c. You should see this screen. Tap the screen and then select *Pairing*.



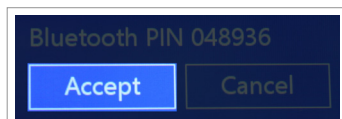
4. Once you have set the Microsoft Band to Pairing Mode, go back to the phone and select *Pair Device*.



5. On the next screen, under the Available Devices heading, tap the ID number of your Microsoft Band, then tap *OK*.



6. The Microsoft Band will prompt you to confirm pairing. Please tap *Accept* on the Band screen.

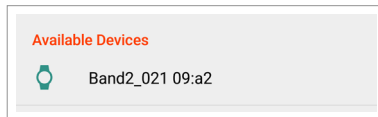


Microsoft Band setup (continued)

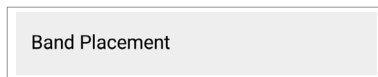


setting the wrist placement

1. Once pairing is complete, return to the phone. If necessary, press the phone's Back button to return to the Study app.
2. On the Microsoft Band settings screen, under the Available Devices heading, tap the ID number of your device.



3. On the next screen, tap *Band Placement* and select *Left Wrist* or *Right Wrist*. This wrist sensor should be worn on the participant's **NON-dominant hand**.



4. Once you have selected the Band placement, tap *Add*.

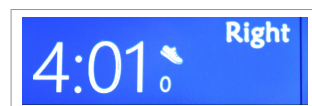


5. You should now see the appropriate Band device listed under the Configured Devices heading on the Settings screen.
6. Tap *Save*, then tap *Yes* to change the background.

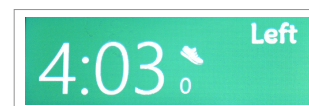


7. The Microsoft Band display background will update to blue for Right Wrist or green for Left Wrist. This confirms configuration is complete.

right wrist



left wrist



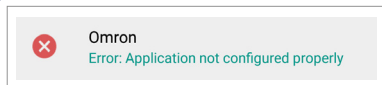
8. The smartphone may send prompts to ask if you would like to add a series of tiles to your Microsoft Band. If applicable, please tap *Yes* to add each of the tiles.

Omron scale setup

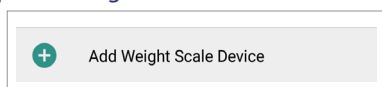


configuring the scale

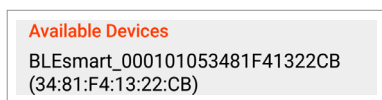
1. If necessary, go to the System Settings screen in the mCerebrum app and tap *Settings*.
2. Tap *Omron* to access the Omron Settings screen.



3. **IMPORTANT:** In order to pair the device and phone, a reading must be taken on the device. Before proceeding to Step 4, please stand on the scale until you hear it beep to confirm a weight measurement.
4. Tap *Add Weight Scale Device*.



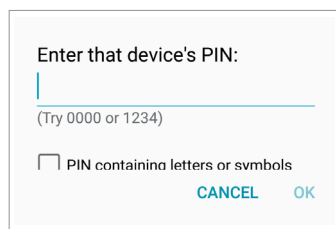
5. Under the Available Devices heading, you should see the ID number of your device. Please tap the ID number.



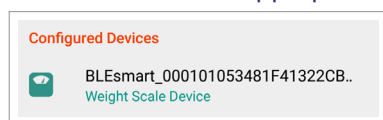
6. With the device ID number selected, tap *Save*.
You will receive a prompt to enter the device's PIN. The PIN can be found on the bottom of the scale.



7. Enter the PIN and tap *OK*.



8. You should now see the appropriate weight scale device listed under the Configured Devices heading.



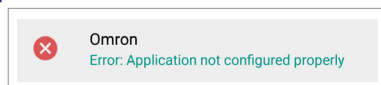
9. Tap *Save* again to complete Omron scale setup.

Omron blood pressure setup

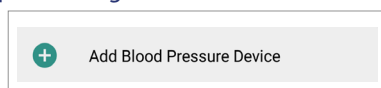


configuring the blood pressure monitor

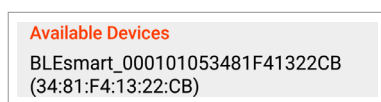
1. If necessary, go to the System Settings screen in the mCerebrum app and tap *Settings*.
2. Tap *Omron* to access the Omron Settings screen.



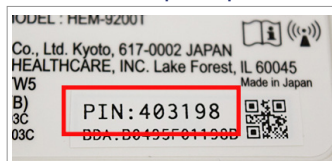
3. **IMPORTANT:** In order to pair the device and phone, a reading must be taken on the device. Before proceeding to Step 4, please take a blood pressure reading until you hear it beep to confirm a measurement. If needed, follow the instructions included with the blood pressure monitor.
4. Tap *Add Weight Scale Device*.



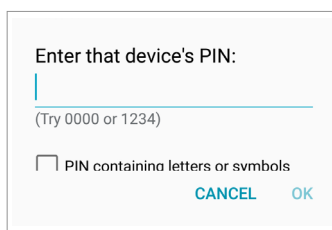
5. Under the Available Devices heading, you should see the ID number of your device. Please tap the ID number.



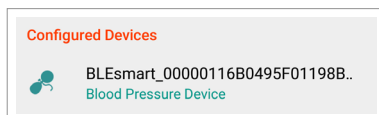
6. With the device ID number selected, tap *Save*.
You will receive a prompt to enter the device's PIN. The PIN can be found on the bottom of the scale.



7. Enter the PIN and tap *OK*.



8. You should now see the appropriate blood pressure device listed under the Configured Devices heading.



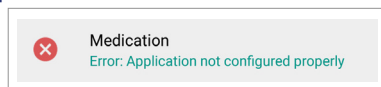
9. Tap *Save* again to complete Omron blood pressure monitor setup.

medication setup



configuring medication

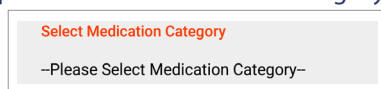
1. If necessary, go to the System Settings screen in the mCerebrum app and tap *Settings*.
2. Tap *Medication* to access the Medication Settings screen.



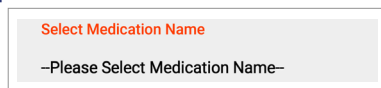
3. Tap the *Add More* button to add a new medication.



4. Tap to select a Medication Category and select the appropriate category from the list.



5. Tap to select a Medication Name and select the appropriate category from the list.



6. Repeat steps 4 & 5 for any additional medications. When you are finished, tap *Save* to complete Medication setup.

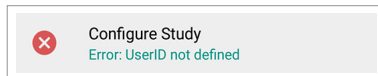


study setup

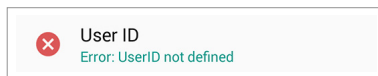


setting the user ID

1. Return to the Admin Settings screen. Tap *Configure Study*.



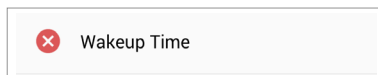
2. On the next screen, tap *User ID*.



3. Type the desired ID of the participant then tap *OK*.

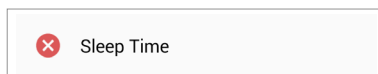
setting wake and sleep times

1. Go to the Study Settings screen and tap *Wakeup Time*.




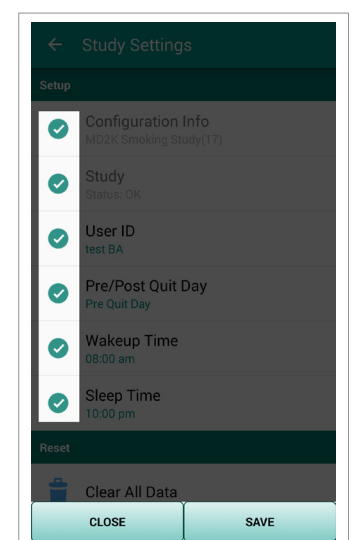
2. Select the time you expect data collection to begin each morning and tap *OK*.

To set the expected sleep time, repeat the same steps, but instead tap *Sleep Time* in step 1.



saving user settings

1. When you have finished setting the user ID, wakeup time, and sleep time, please tap *Save* on the Study Setup screen.
2. If all items under the Setup heading have a green check mark  beside them, study setup is complete. You may tap *Close*.
3. Tap *Start Study* when you are ready to begin the study.



wearing the wrist devices



The **MotionSense wrist sensor** should be worn on the participant's **dominant** hand.

The **Microsoft Band** should be worn on the **NON-dominant** hand.

1. Make sure the wrist sensor and Microsoft Band are fully charged.
2. Wear the wrist sensor with the device face-up on the wrist and the buckle going over the top of the wrist as shown.



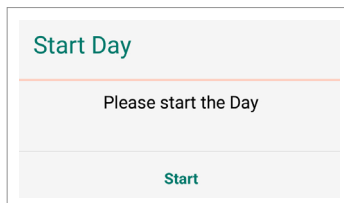
Note: The wrist sensor may be warm while charging. This is expected and you should not be concerned. Please remove it from the charger 5 minutes before wearing to allow the band to cool sufficiently.

start day

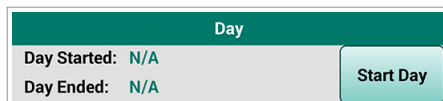


During each day of the study, participants should tap the *Start Day* button when data collection is ready to begin. This allows the software to trigger EMAs during appropriate times.

1. Make sure all sensors are properly worn.
2. In the mCerebrum app, you may receive a prompt to start the day. Tap *Start* to confirm.



If you do not receive a prompt, tap the *Start Day* button on the mCerebrum home screen. Tap *Yes* to confirm.



CHF protocol



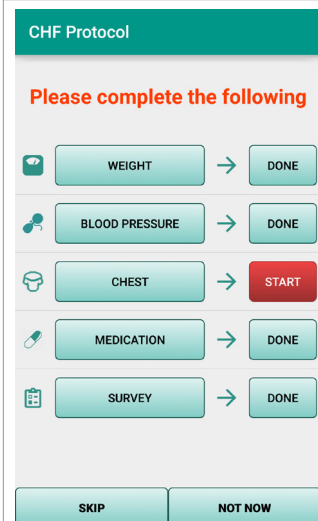
At the start of each day, participants will be prompted to collect sensor data and answer some questions.

Tap the *Start* button next to each of the listed items and follow the on-screen instructions to enter the data.

1. **WEIGHT** - Measure your weight, then tap the *Next* button and wait for the data to appear on the phone. Follow the on-screen instructions to save the data.
2. **BLOOD PRESSURE** - Measure your blood pressure, then tap the *Next* button and wait for the data to appear on the phone. Follow the on-screen instructions to save the data.
3. *CHEST* - EasySense chest sensor will be added to the mCerebrum app at a later date
4. **MEDICATION** - Complete the survey and tap *Finish* to save.
5. **SURVEY** - Complete the survey and tap *Finish* to save.

Once all listed items show *DONE*, tap *Save* on the CHF Protocol screen to save all data.

Note: For now, since EasySense is not yet incorporated, please tap *Skip* to advance to the home screen.



verifying sensor data collection

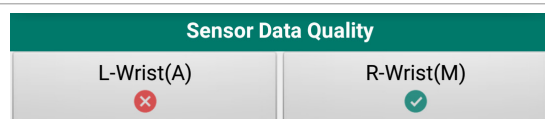


To verify data collection, use the icons under the Sensor Data Quality heading near the top of the Study app home screen.

✓ **green check mark** — Good data is being collected

⚠ **red caution** — Data is being collected, but there is an issue with data quality (i.e. sensor is not worn properly)

✗ **red X** — No data is being collected (i.e. sensor needs charging, sensor is powered off, sensor is not paired properly)



Note: If you see any red icons during the day, wait 30-60 seconds. If the icons are still red, tap the icon to see tips and instructions about how to fix the problem.

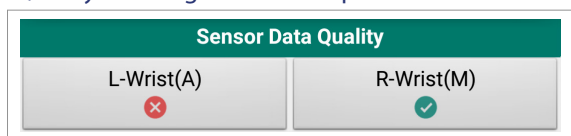
using the app



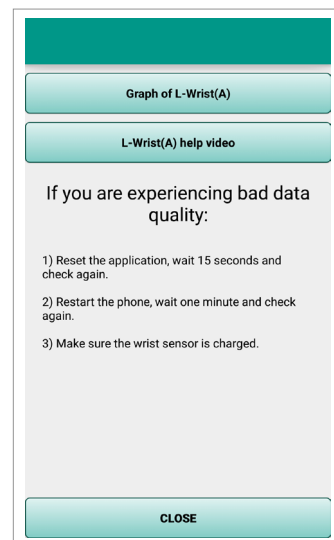
plotter / troubleshooting

Plotter allows users to view the data plotters for each available sensor.

1. On the mCerebrum home screen, select one of the sensor icon buttons under the Sensor Data Quality heading to view the plotter and troubleshooting menu.



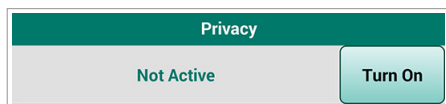
2. To view the plotter graph, tap the *Graph of...* button.
3. If you are experiencing bad sensor data quality, follow the on-screen text instructions, or tap the *help video* button to view a troubleshooting help video.
4. When finished, tap *Close* to return to the mCerebrum home screen.



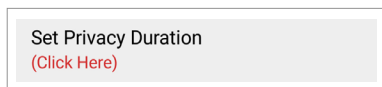
privacy

Privacy Control allows users to turn off certain features for a limited period of time.

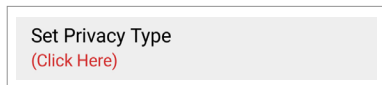
1. In the mCerebrum app, tap the *Turn On* button under the Privacy heading.



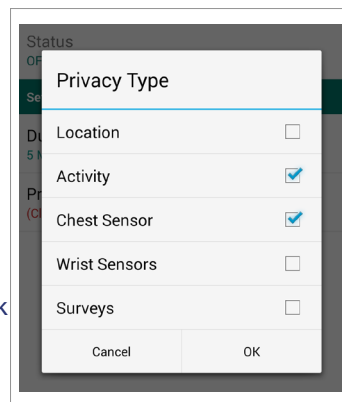
2. On the Privacy Control Settings screen, tap *Set Privacy Duration*. Select the amount of time for which you wish to disable the feature(s).



3. Next, tap *Set Privacy Type*.



4. Select each of the features you would like to temporarily disable. You will see a check mark appear to confirm the feature is selected.
5. Tap *Start* to begin the privacy timer.
6. You will see a countdown timer under the Privacy Status heading to confirm the privacy settings are enabled. When you are finished, tap *Close*.



charging the devices



The Omron scale and blood pressure devices each use 4 AA batteries. Please replace them if the charge expires.

The smartphone, MotionSense wrist sensor, and Microsoft Band should be charged every night. Use the device charger and cables to charge the smartphone and sensors, and let them charge overnight.

The battery life of the smartphone and MotionSense wrist sensor should last for the duration of each day.

Note: The battery life of the Microsoft Band may not last for the entire day. If the battery of the Band is getting low, please allow the Band to charge for a brief period during the middle of the day.

smartphone



The charging port is found on the bottom of the smartphone.

MotionSense wrist sensor



To charge the wrist sensor, place it face-down on the center of the charger. The blue LED lights around the ring of the charger will light up to confirm the sensor is charging. You may need to adjust the position of the sensor carefully in order to find the correct charging position.

Microsoft Band



The charging port is on the clasp. Attach the charging cable to the clasp with the gold connector points aligned.