



Atris Software: Instruction for Use for Healthcare Providers

Version 1.4

These Instructions for Use (IFU) were last updated on 10 April 2025 to version 1.4 and is based on the following versions of the application:

AtrisApp

Android v5.2.0 and iOS v5.2.0

Atris Patient Monitor

V5.3.0

Atris BigScreen

V2.2.3

AtrisCare App

Android v2.7.0 and iOS v2.7.0



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1. About Atris

1.1. Product Information

Peercode BV, Oudenhof 4c 4191 NW Geldermalsen, The Netherlands support@atris.nl AtrisApp: v5.2.0 Atris Patient Monitor: v5.3.0 Atris BigScreen: v2.2.3 AtrisCare App: v2.7.0
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The goal of Atris is to support the wellbeing of patients/users by recording general health and wellbeing data and exchanging this data to patients and health care professional. This is done by offering and maintaining an effective, efficient and easy-to-use software tool. Atris helps patients and HCPs to gain insight in their health wellbeing data.

Atris is a software platform for patients and Health Care Professionals (HCP) intended for telemonitoring. Atris records patient outcome information and presents this to the patient and HCP. Patients may receive notifications in the AtrisApp and HCPs on the Atris Patient Monitor website.

Atris is compatible with the following sensors: accelerometer for physical activity (PAM- sensor) and heart rate monitors. Additionally, wearables can sync data via Apple Health or Health Connect, providing a streamlined way to integrate comprehensive health and exercise metrics into the platform.

More information about Atris can be found at <https://atris.life>.



1.2. Company Information

Atris has been developed by Peercode, which was founded in September 1999 and consists of a balanced team of experienced and well-trained professionals from various fields including: software development, web hosting, mobile app development, user experience design, app design and (cognitive) ergonomics. Peercode has continued to develop in recent years and is now also active on the international market.

More information about Peercode can be found at www.peercode.nl.

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4191 NW Geldermalsen
The Netherlands
support@atris.nl

1.3. Important Contacts

1.3.1. Atris Support

If you have questions about personal care issues, illness or welfare questions, you should contact your healthcare provider (HCP). If you have any questions about the use of Atris, you can ask the manufacturer via support@atris.nl.

Users are encouraged to report any incidents related to the device to Peercode. To contact Peercode regarding incidents, you may contact the manufacturer via support@atris.nl.

As the device is integrated into third-party systems, such as electronic patient medical records and home monitoring applications, we kindly request that you direct any questions or inquiries regarding the third-party product to their respective support teams. For any concerns or assistance related to Atris specifically, please don't hesitate to contact our own support team, and we will be happy to help.

If you prefer a paper version of the Instructions for Use, you can request one by sending an e-mail to support@atris.nl. Your request will be processed within 7 calendar days, and you will receive the paper version accordingly.

1.3.2. GDPR Compliance

Atris has been developed according to the guidelines of ISO27001 and NEN7510. These standards represent a process-based approach to implementing, monitoring, maintaining and improving information security. In this way, Atris guarantees the privacy of your patients and you can be sure that their data is in safe hands.

Any questions or comments regarding GDPR compliance can be directed to: support@atris.nl



2. Warnings and precautions

Before using the Atris service, it is important to be aware of the following warnings, precautions, and potential risks associated with its use. Please carefully read and understand the information provided below to ensure safe and effective use of the Atris. Discuss the risks with your patients.

- Atris is not intended for diagnosing medical conditions, providing treatment recommendations, or acting as a standalone medical measurement tool. The use of Atris does not replace medical advice or treatment. It is also not meant to record the side effects of medical treatments.
- Internet connections are required at all times for Atris to function as intended.
- AtrisApp and AtrisCare will be subjected to software updates. Make sure to turn on automatic updates to guarantee that the app is state-of-the-art.
- Make sure that phones or computers with access to Atris are password protected to prevent unauthorized access to patient data.
- The software employs validated measuring instruments to gauge health parameters.
- The minimum age for using Atris is 18 years.
- In case of personal health concerns, illnesses, or well-being questions, patient should contact their healthcare provider.
- The Health Connect integration on Android phones can lead to incomplete data transfer to the Atris 'mobile health data' due to the numerous third-party health applications that may not have fully integrated the Health Connect. It is a new development and thus may not be entirely implemented on all third-party applications.

3. Hardware and software requirements

The AtrisCare and AtrisApp are distributed through Apple's App store and the Google Play store. Both apps are compatible with mobile phones running:

- Android 5.0+
- iOS 12.0+

Atris Patient Monitor requires the use of a modern web browser. The minimal hard- and software requirements of a modern web browser are as follows:

	<i>Chrome</i>	<i>Safari</i>	<i>Firefox</i>	<i>Edge</i>
<i>Processor Windows</i>	Pentium 4		Pentium 4	Pentium 4
<i>Processor Mac</i>	Intel	500-MHz Pentium-class	Intel	Intel
<i>Min RAM</i>	128 MB			
<i>Recommended RAM</i>		256 MB	512 MB	2 GB
<i>Min Disk Space</i>	100 MB			1.4 GB
<i>Rec. Disk Space</i>		unknown	200 MB	
<i>Windows</i>	Windows XP SP2	Windows XP SP2	Windows XP SP2 (FF 13)	Windows 7
<i>OS X</i>	OS X 10.5.6	OS X 10.5.8	OS X 10.5	OS X 10.13
<i>Linux</i>	Ubuntu 10.04	Not available	Any recent	Any recent
	Debian 6			
	OpenSuse 11.3			
	Fedora Linux 14			



3.1. About the PAM sensor

PAM is a system centered around motion tracking, facilitated by a small and clever device that captures all your daily activities (Figure 1). PAM's usability is remarkably straightforward. The device itself requires no configuration. PAM gauges activity intensity by meticulously monitoring your body's movements.

When PAM is worn on around the ankle throughout the day, it quantifies movement into a universal activity index known as the PAM score. Engaging in activities like brisk walking for half an hour might yield 4-6 points, whereas a half-hour jog could earn you a score of 20-30 points.

The Metabolic Equivalent of Task (MET) is calculated using the PAM score. The formula is: $((\text{PAMSCORE} * 96) / 100) + 1$.

Within Atris, activity is measured across 3 levels based on the MET scale:

- Low intensity = 1.4 – 3 METs (Shuffling and leisurely walking)
- Moderate intensity = 3 – 7 METs (Normal-paced walking)
- High intensity = 7 METs and higher (Cycling and running)

Atris can also estimate the number of steps per day with the use of the PAM sensor. This 'steps equivalent' is calculated by multiplying the PAM score x500. A PAM score of 20 will mean that the patient's overall activity was equal to 10.000 steps.

PAM V2 can be opened by wedging a nail or sharp object in between ridge on the side of the sensor, and the battery inside can be replaced with readily available button cell batteries.

New PAM sensors or PAM clips can be ordered by contacting support@atris.nl.



Figure 1: The PAM V2 and location of the PAM-ID.

3.2. Connecting devices

As outlined in the previous section, the PAM sensor is one of the main devices that can be connected to the AtrisApp. The following devices have been validated for use with Atris:

- Polar H10
- Garmin HRM-DUAL
- Fitbit Charge 5



4. Instructions for the use of Atris Software

4.1. Installation of Atris Patient Monitor

Atris Patient Monitor is a web application that is compatible with commonly used web browsers such as:

- Microsoft Edge
- Google Chrome
- Firefox
- Safari

Peercode provides a ready-to-use instance of Atris; No further installation is required to use Atris Patient Monitor. PAM sensors are linked to the database by Peercode, but must be linked to patients by a healthcare provider or support staff (see section 1.3).

4.2. Installation of Atris Bigscreen/Gateways

Atris Bigscreen hardware includes software pre-installed by Peercode. The Bigscreen or Gateway can be set up to connect to the internet over WiFi, Ethernet, or 4G connection.

To set-up the Atris Bigscreen, make sure to:

FIRST connect the HDMI cable to the TV.

SECOND Connect the AC Adapter or Power over Ethernet (PoE) cable.

For Atris Bigscreen/Gateways to function as intended, the following requirements need to be met:

- The TV to which the hardware is connected should have a resolution of 1920x1080. Other resolutions might cause distortions.
- The Bigscreen hardware only has an HDMI connection. We recommend using a HDMI cable to connect the device to the TV.
- Use the adapter supplied by Peercode.
- It is possible to use PoE while using the Bigscreen hardware. However, it is not recommended since it can cause ground-loops.
- If 4G is the preferred connection type, make sure that the signal strength is sufficient in the room where the device is placed. If the 4G connection is weak, the device can be switched to LAN-mode by Peercode.
- WiFi connections are typically unstable and are not recommended.
- The Bigscreen/Gateways hardware is delivered without an external Bluetooth antenna. If signal interference disrupts PAM sensor read-out, an external antenna can be ordered at Peercode.
- Do not place the Bigscreen/Gateways hardware near sources of signal interference.
- It is not recommended to place the hardware within a system-ceiling due to the potential signal interference.

To adjust Bigscreen/Gateways Settings: Navigate to the Gateways tab in Atris Patient Monitor with as an administrator. Select Edit for the device to be configured. The following settings can be adjusted:

- Patient Group assigned to the Bigscreen.
- Progression towards goal in Numeric values or percentages.
- Amount of days of inactivity needed to remove patient from the screen.

4.3. Installation of AtrisApp / AtrisCare

Both applications can be downloaded and installed from the Apple App Store or Google Play store. See below for instructions:



Installing from Apple App Store:

1. Open "App Store" on iOS.
2. Search for AtrisApp or AtrisCare.
3. Tap the app's name.
4. Click "Get" then "Install."
5. Authenticate with password, Touch ID, or Face ID.
6. Wait for download and find the app on your home screen.

Installing from Google Play Store:

1. Open "Play Store" on Android.
2. Search for AtrisApp or AtrisCare.
3. Tap the app's name.
4. Press "Install."
5. Review permissions and tap "Accept."
6. Wait for download and find the app in your app list.



4.4. Logging in for the first time on Atris Patient Monitor

Care providers and support staff are invited by an Atris Administrator to work with Atris via email (Figure 2). Open the email and select 'Register Now' to activate your account. Fill in the requested information and press register. Then Atris asks to activate two-factor authentication. This is mandatory for all users of Atris Patient Monitor. Use Authenticator applications, such as Microsoft Authenticator or Google Authenticator (available for smartphones via the Google Play store or Apple App store) and follow the instructions in Atris to activate two-factor authentication. Enter the 6-digit code generated by the Authenticator app within the TFA code field in the atris software and select 'verify' to complete the process.

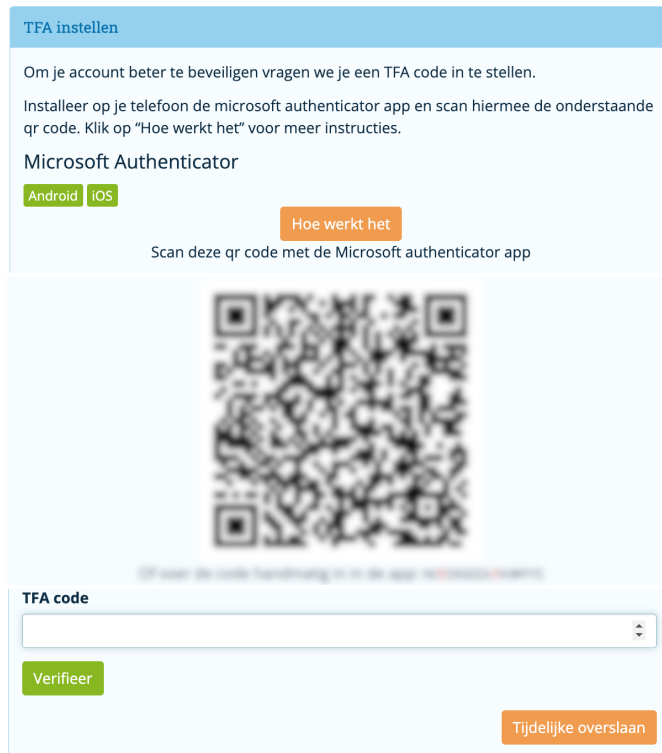






Figure 2: TFA Screen in Atris.

After successful activation, Atris will open Patient Monitor on the Dashboard Page. At the top of this page is a row of tabs that can be clicked to navigate to various functions within Atris Patient Monitor:

- | | |
|--|---|
|  Dashboard | Overview of general data and problems. |
|  Patients | Overview of the patients within the clinic/hospital. New patients can also be created here and patient-specific data can be viewed. |
|  Sensors | List of all sensors and associated patients. |
|  My Account | Your account information and the ability to change it. |



4.5. My Account

To manage your own personal data, press the “My account” button in the navigation. You can change your name, email address or password here. Confirm your changes with “Save”. If you have lost the two-factor authentication code, ask your Atris Administrator to reset it. The next time you log in, you can go through the process of section 4.4 again.

4.6. Add New Patient to Atris Patient Monitor

If a patient already has a profile in Atris, this step can be skipped.

Open Atris Patients Monitor and select “Patients” from the main navigation at the top of the page. The Patient Summary – Activity Today page will open (Figure 3A). Select the blue 'Add' button here. After which the 'Add patient' screen will open. Enter the following information about the patient on this page:

- First name
- Last name
- Unique Number (e.g. a patient number)
- Show on Bigscreen (IMPORTANT: Select No).
- Date of birth
- Gender (M/F)
- Use training kit (Leave this set to NO).
- Group/Department: Assign the patient to the department where he/she will work with the Bigscreen.
- Mobile health import enabled: Set this to ‘Yes’ if you want to import the Apple Health or Health Connect data (see 4.11 and 4.12 for further instructions after turning on this setting).

A)

Dashboard overview showing patient activity. The table below lists patients and their status:

Naam	Alarm	Groep/Afdeling	Score	Laatste signaal
van der Velver, Sam (eID: 238203234) 38 ♂		Stresstest Groep	Geen doel	Nog geen signaal ontvangen
van der Velde, Fenne (eID: 782259822) 70 ♀		Stresstest Groep	Geen doel	Nog geen signaal ontvangen
van der Velde, Nina (eID: 501277031) 64 ♀		Stresstest Groep	Geen doel	Nog geen signaal ontvangen
van der Velde, Roos (eID: 1656561076) 28 ♀		Stresstest Groep	Geen doel	Nog geen signaal ontvangen
van der Velden, Quinity (eID: 1638570539) 61 ♂		Stresstest Groep	Geen doel	Nog geen signaal ontvangen
van der Ven, Tim (eID: 1193368087) 79 ♀		Stresstest Groep	Geen doel	Nog geen signaal ontvangen
van no sensor, Eric (eID: 9869658968) 39 ♂		Test 20230512 Update	Geen doel	Geen sensor gekoppeld

B)

Details van: Onbekend (ID: 320)

Glucose

Gemeten glucose waarden op	
Gemiddeld glucose	0 mmol/L
Standard deviatie	0 mmol/L
Device id	

Bolus en koolhydraten

Gemeten waarden op Invalid Date

C)

Bloeddruk metingen

Gewicht metingen

Ewilt (inname metingen)

Laatste 10 gemeten momenten

Fitbit informatie

Gekoppelde gebruikers



Figure 3: A) Overview of patient page in Atrix Patient Monitor. B) Patient detail page in Atrix Patient Monitor. C) The Sensor Information field in Atrix Patient Monitor.

Then press the blue "Add" button. The 'Detail' page for the newly created patient will then open (Figure 3B). Scroll down this page until the 'Sensor Information' field is visible (Figure 3C), and follow the steps in section 4.7 to pair the sensor.

4.6.1. Add New Patient to Atrix Bigscreen

Open Atrix Patients Monitor and select "Patients" from the main navigation at the top of the page. The Patient Summary – Activity Today page will open (Figure 3A). Select the blue 'Add' button here. After which the 'Add patient' screen will open. Enter the following information about the patient on this page:

- First name
- Last name
- Unique Number (e.g. a patient number)
- Show on Bigscreen (IMPORTANT: Select YES).
- Alias for Bigscreen (IMPORTANT: in consultation with the patient, enter a nickname here that allows the patient to recognize himself on the Bigscreen, but which is not related to his/her real name).
- Date of birth
- Gender (M/F)
- Use training kit (Leave this set to NO).
- Group/Department: Assign the patient to the department where he/she will work with the Bigscreen.

Then press the blue "Add" button. The 'Detail' page for the newly created patient will then open (Figure 3B). Scroll down this page until the 'Sensor Information' field is visible (Figure 3C), and follow the steps in section 4.7 to pair the sensor.

4.7. Pair PAM sensor

In order to measure the activity of a patient, a sensor must be connected to the patient. Enter the sensor ID at the bottom of the "Sensor information" block. For the PAM V1 (Figure 1A), this can be seen on the side of the PAM. For the PAM V2 this can be found on the bottom of the PAM under the SN number (Figure 1B). Then press "Add" to pair the sensor. **Important:** Only 1 sensor should be connected to a patient at the same time.

If the sensor you want to pair is already paired with another patient, you will be asked if you want to pair the sensor again. Press "Yes" if you want to use the sensor for this patient. The sensor is then automatically disconnected from the previous patient.

When the sensor is connected to the patient, the patient can use Atrix Bigscreen to read his or her data without any further action.

4.8. Disconnect PAM sensor

To unlink a sensor from a patient, press the red button with the trash can to the right of the sensor you want to unlink on the patient detail page of Atrix Patient Monitor. You will then be prompted to confirm the disconnection (Figure 4).




Sensor informatie	
Sensor: 1717005019	
ID	1717005019
Start datum	11-01-2018 11:15:45
Laatste signal	04-01-2018 15:59:31
Batterij	90%
<input type="text" value="Sensor ID"/>	<input type="button" value="Toevoegen"/>

Figure 4: Disconnecting a PAM by pressing the trashcan symbol.

4.9. Using Fitbits with Atris

To integrate a Fitbit account with the Atris Patient Monitor, follow these steps:

1. Access the Atris Patient Monitor using your Administrator Account credentials.
2. Navigate to the 'Fitbit Accounts' section.
3. Click on the 'Add' option.
4. Review the instructions for adding a Fitbit account provided (Figure 5A)
5. Follow the embedded link to the Fitbit website to create a new Fitbit account. Ensure that you keep the Atris Patient Monitor screen open throughout this process.
6. Create a Fitbit account. For details see steps below
7. Link the Fitbit account with Atris patient monitor, see detailed steps below
8. associate the new Fitbit account with a patient within Atris, see detailed steps below

6. To create a Fitbit account at Fitbit.com, follow these steps:

- 6.1. Open a web browser and visit <https://accounts.fitbit.com/signup>, or use the link provided in step 5 above.
- 6.2. Complete the required information, including your email address. Accept the terms of use and data policy, then select 'Word lid van Fitbit.'
- 6.3. Access your email and open the received "Actie vereist: bevestig e-mailadres van het Fitbit-account" email.
- 6.4. Inside the email, click on 'Je e-mail adres verifiëren.'
- 6.5. Return to the original browser tab, scroll down the privacy notice, and agree to the privacy policy.
- 6.6. Provide the requested account details and select 'doorgaan.'
- 6.7. Complete the remaining account details and select 'account maken.'
- 6.8. Leave the Fitbit dashboard open, as shown in Figure 5B.

7. To link the Fitbit account with the Atris Patient Monitor, continue with the following steps:

- 7.1. Return to the Atris Patient Monitor, logged in with Administrator credentials.
- 7.2. On the 'Add a new fitbit account toe' screen, choose 'Authorize.'
- 7.3. On the subsequent screen, select 'Accept all' and 'Accept.' Refer to the screenshot for clarity.
- 7.4. Fill in your Fitbit account username (email address) and password, then click 'next.' Refer to the provided screenshot.
- 7.5. Confirm that the account has been successfully added on the next screen (Figure 6A).

8. To associate a Fitbit Account with a Patient as a Healthcare Professional (HCP), log in to the Atris Patient Monitor with your professional account and follow these steps:



1. Log into the Atris Patient Monitor using your care professional account.
2. Access a Patient Detail Page and scroll down to the 'Fitbit Information' section.
3. Click on 'Add.'
4. Choose the desired Fitbit account from the dropdown menu. Only unassigned Fitbit accounts will be displayed.
5. If applicable, follow the provided steps to delete data (not necessary for new accounts) (Figure 6B and 6C).
6. Click 'Save.'
7. On the Patient Detail Page, confirm the successful linkage of the sensor under 'Fitbit Information.' (Figure 6D)

Please follow the instructions below if the steps to delete data are applicable:

1. Delete all current health data saved in the Fitbit account. Delete data for the past year or years individually (avoid using the "remove all data" option for each section). See the screenshot for visual guidance.
2. Remove all authorized devices associated with the account, except for the connected PC.
3. Erase all health data from the Fitbit device following the user manual.
4. Change the account password. Ensure that you change the password on the Fitbit account user page as well. An email will be sent to reset the password. Both Atris and Fitbit passwords should match.

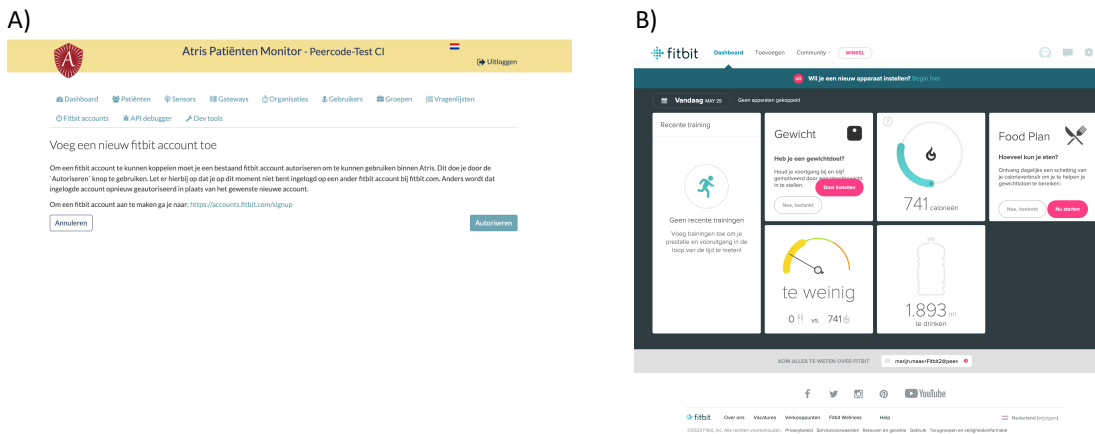


Figure 5: A) Information found in the Fitbit Account screen. B) Overview of the Fitbit Dashboard on Fitbit.com

To unlink a Fitbit sensor as an HCP, proceed as follows:

1. Log into the Atris Patient Monitor with an HCP Account.
2. Scroll down to Fitbit information.
3. Select the Garbage bin icon and confirm in the pop-up.
4. Repeat the process for the second Garbage bin icon and confirm in the pop-up.
5. Verify that the sensor is no longer linked under Sensor information.

To utilize the Fitbit with the AtrisApp, follow these steps:

1. Download the Fitbit app and AtrisApp from the App Store or Google Play store.
2. Open the AtrisApp and acknowledge the warning about securing your phone on the start screen. Proceed to find your healthcare provider.
3. Log in using the account associated with the linked sensor.
4. If applicable, pair the sensor with the Patient Activity Monitor (PAM). Follow the instructions for linking a Fitbit and click 'volgende.'
5. Copy your account credentials and open the Fitbit App. Paste the credentials and log in, as depicted in the screenshot.
6. Return to the Atris App and click 'volgende.' Review the provided instructions.
7. Switch back to the Fitbit App, access 'Account,' and choose '+ Set up a Device.'
8. Select 'Charge 5' from the list of available devices and proceed with the setup.



9. Accept the privacy conditions and set up the Fitbit device as per the instructions. Charge the device and click 'NEXT.'
10. Keep the charging Fitbit near your phone, select the displayed device, and input the number shown on the Fitbit into the app. Accept any prompts to connect Fitbit to your phone. Complete the setup process, skipping Fitbit Premium.
11. Swipe down in the Fitbit app to synchronize the device on the dashboard page.
12. Return to the AtrisApp and click 'Volgende.' Access the '...' (account page) and choose 'verander het dashboard.' Select 'active minuten (Fitbit)' and 'active minuten,' then synchronize by swiping down.
13. Confirm that the data is accurately displayed in the 'active minuten Fitbit' section.

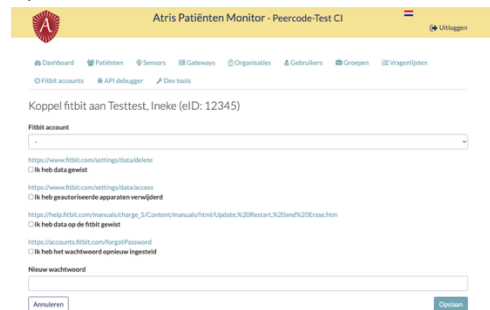
To view Fitbit data as an HCP, perform the following steps:

1. Log into the Atris Patient Monitor using an HCP Account.
2. Scroll down to access Fitbit data.
3. Hover over the columns to view detailed information.

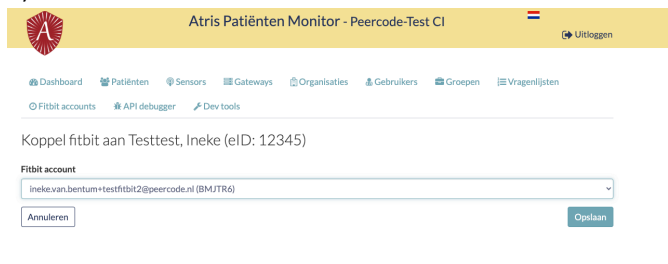
A)



B)



C)



D)

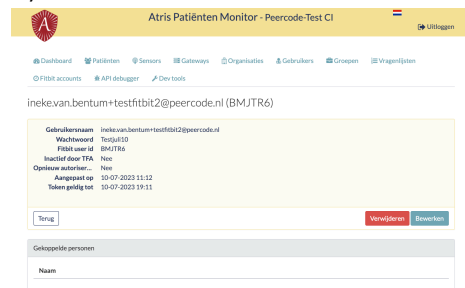


Figure 6: A) Permissions required for Atris to access the Fitbit Account. B/C) Linking a Fitbit to an Atris Account. More actions required if the Fitbit has been used by the previous patient to guarantee privacy. D) Screen indicating successful linking of a Fitbit Account to an Atris Account.



4.10. Setting up Goals using Atris Patient Monitor

Atris Patient Monitor can be used to set up patient goals, which will be visible for the patient in AtrisApp or Atris Bigscreen. Navigate towards the patient detail page on Atris Patient Monitor and scroll down to 'doelen'. Here, goals can be set for the following parameters: Movement Minutes (Figure 7A), Regular Movement (Figure 7B), Protein Goals (Figure 7C).

The movement minutes provide the patient with an indication of how much they should move per day in minutes, based on 3 intensity levels (low, medium and high intensity). These intensity levels are measured while wearing the PAM sensor, and are calculated in MET scores. The patient will see these goals in the AtrisApp or Atris Bigscreen.

Regular movement provides the patient with an indication of how often they should move. Set the amount of MET and minutes the patient should move during a specific time interval, and set an optional time in which the patient is allowed to have a break. For an indication of which activity relates to an amount of MET, see table 1 below.

For the protein goal, a daily protein score can be set. The score is based on the 'EiFit' system. For more information, please see <https://voedingenbeweging.nu/goed-eten-tijdens-ziekte-en-herstel/>.

A)

B)

C)

Figure 7: Setting patient goals.



TABLE 1: indication of MET values and associated activities.

Physical Activity Intensity	MET
Light intensity activities	< 3
sleeping	0.9
watching television	1
writing, desk work, typing	1.8
walking, 1.7 mph (2.7 km/h), level ground, strolling, very slow	2.3
walking, 2.5 mph (4 km/h)	2.9
Moderate intensity activities	3 to <6
yoga, Hatha	3
water aerobics, water calisthenics, water exercise	2.5
bicycling, stationary, 50 watts, very light effort	5.3
walking 3.0 mph (4.8 km/h)	3.3
calisthenics, home exercise, light or moderate effort, general	3.5
resistance training (weight) training, multiple exercises, 8-15 repetitions at varied resistance	3.5
calisthenics (e.g., push ups, sit ups, pull-ups, lunges), moderate effort	3.8
Pilates, general	3.8
walking 3.4 mph (5.5 km/h)	3.6
bicycling, <10 mph (16 km/h), leisure, to work or for pleasure	4
bicycling, stationary, 100 watts, light effort	5.5
Heavy intensity activities	> 6
jogging, general	7
calisthenics (e.g. pushups, sit-ups, pull-ups, jumping jacks), heavy, vigorous effort	8
running jogging, in place	8
rope jumping	10

Note: 1 MET = 1 kcal kg⁻¹ hr⁻¹ or 1 MET = 3.5 ml kg¹ min¹ of O₂

4.11. Using Apple Health with Atris

To integrate Apple Health with the Atris Patient Monitor, follow these steps:

1. Log into the Atris Patient Monitor with an HCP Account.
2. Access a patient detail page that has the 'Mobile health import enabled' set to 'Yes'.
3. Click on the white button 'Mobile health data' (see Figure 7A).
4. Turn on the relevant health data (see Figure 7B).
5. Atris Patient Monitor will now import and display the selected health data from Apple Health.

Note: it may take a moment before the data has been uploaded to the Atris Patient Monitor.



A)

Update Delete Mobile health data Export data -

Glucose ● Last measurement ○ Trend

Glucose values measured on

Average glucose	0 mmol/L
Standard deviation	0 mmol/L
Device ID	

B)

Atris Patiënten Monitor - Peercode-Test CI Uitloggen

Dashboard Patiënten Patiënten export Sensors Gateways Organisaties Gebruikers Groepen

Vragenlijsten API debugger Dev tools

Mobiele gezondheid gegevens aanpassen

Hartslag
Nee

Rust hartslag
Nee

Actief energie verbrand
Nee

Stappen
Nee

Gewicht
Nee

Bloed glucose
Nee

Lengte
Nee

Opslaan Annuleren

Figure 8. A) The white button 'Mobile health data' shows up when the 'mobile health import enabled' has been set to 'Yes'. B) All data is set to 'No' as standard. Set relevant health data to 'Yes' to import these from the Apple Health to the Atris Patient Monitor.

To make sure the patient is correctly integrating Apple Health with the AtrisApp, follow these steps:

1. After the HCP has turned on the relevant health data (see step 4 of the previous list), the patient should get a pop-up next time they open the AtrisApp (see Figure 8A).
2. After giving permission to synchronize data, a new pop-up shows up (Figure 8B). Toggle all on.
3. The Apple Health data is now synchronizing with the Atris Patient Monitor.

Note: Periodically open AtrisApp to synchronize and upload the data to the Atris Patient Monitor.

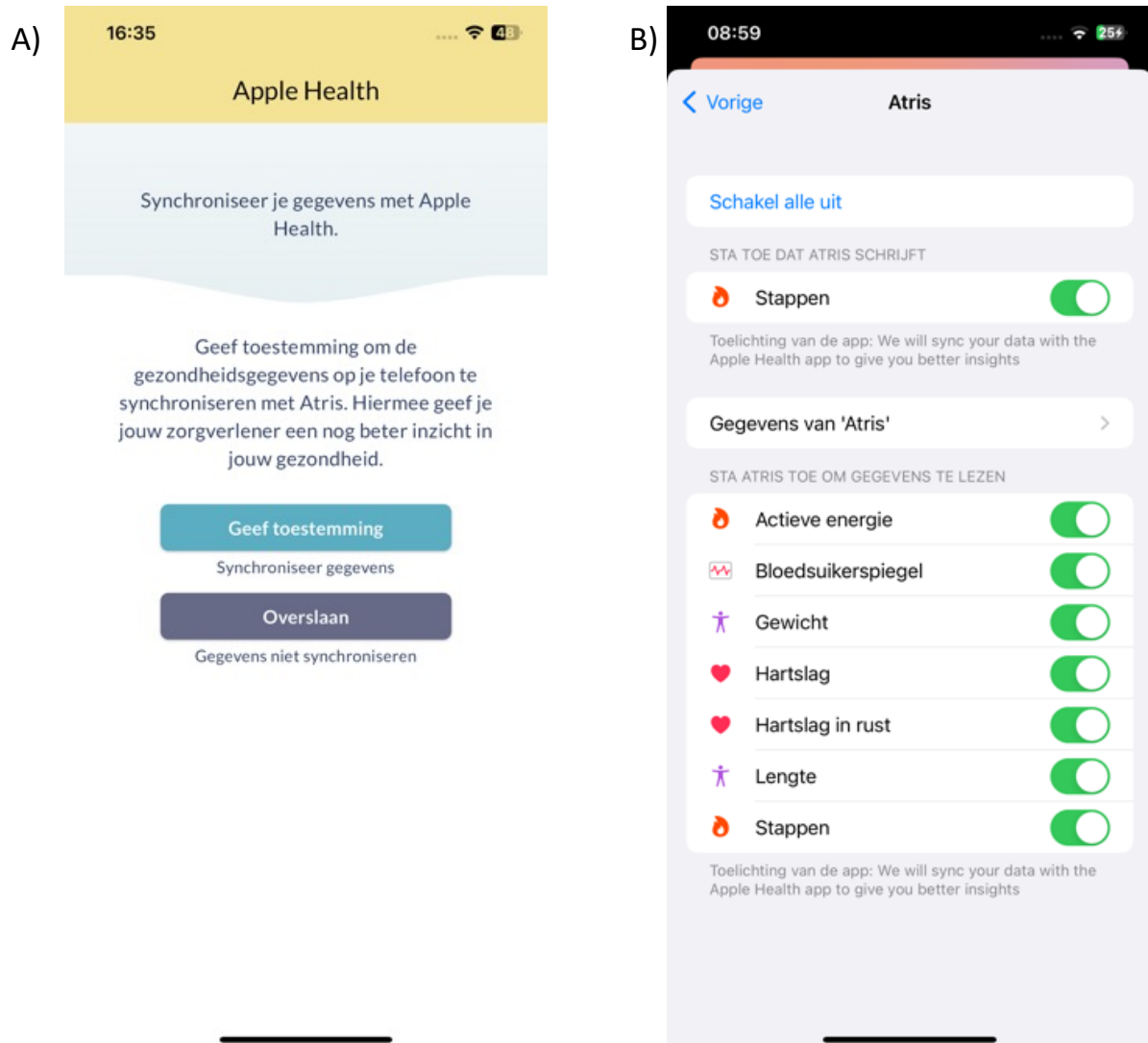


Figure 9. A) The pop-up shown after starting AtrisApp when the functionality has been turned on by the HCP. B) Apple Health permission list that pops up after giving permission for synchronizing data. These will show up according to what the HCP has been selected. In this case, all options in Figure 7B were set to Yes. All toggles were turned on.

4.12. Using Health Connect (Android) with Atris

To integrate Health Connect with the Atris Patient Monitor, follow these steps:

1. Log into the Atris Patient Monitor with an HCP Account.
2. Access a patient detail page that has the 'Mobile health import enabled' set to 'Yes'.
3. Click on the white button 'Mobile health data' (see Figure 7A).
4. Turn on the relevant health data (see Figure 7B).
5. Atris Patient Monitor will now import and display the selected health data from Apple Health.

Note: it may take a moment before the data has been uploaded to the Atris Patient Monitor.

To make sure the patient is correctly integrating Health Connect with the AtrisApp, follow these steps:

1. Install Health Connect on the Android phone.
2. After the HCP has turned on the relevant health data (see step 4 of the previous list), the patient should get a pop-up next time they open the AtrisApp (see Figure 9A).
3. After giving permission to synchronize data, a new pop-up shows up (Figure 9B). Toggle all on.
4. The Health Connect data is now synchronizing with the Atris Patient Monitor.

Note: Periodically open AtrisApp to synchronize and upload the data to the Atris Patient Monitor.

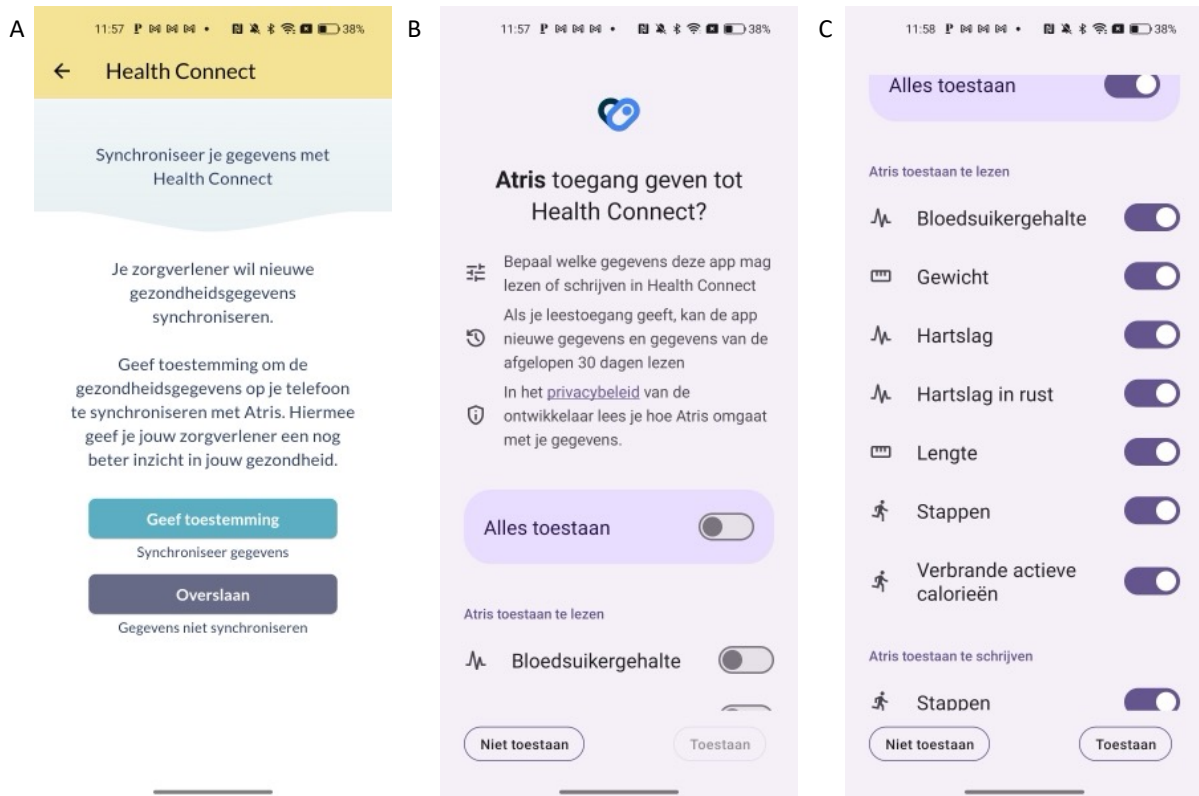


Figure 10. A) The pop-up shown after starting AtrisApp when the functionality has been turned on by the HCP. B) Health Connect permission list that pops up after giving permission for synchronizing data. These will show up according to what the HCP has been selected. In this case, all options in Figure 7B were set to Yes. C) All toggles were turned on.

Note: The Health Connect integration on Android phones can lead to incomplete data transfer to the Atris 'mobile health data' due to the numerous third-party health applications that may not have fully integrated the Health Connect. It is a new development and thus may not be entirely implemented on all third-party applications (see also chapter 3).

5. Troubleshooting Atris Q&A.

Q: Atris Patient Monitor, AtrisApp, AtrisCare, or Atris Bigscreen/Gateways do not work. What should I do?

A: Make sure to check, possibly in collaboration with the IT-department of your healthcare institute, that the devices running Atris software can connect to the internet. Internet connections are required at all times for Atris to function as intended. If the software still does not work as intended after confirming that the software have been correctly connected to the internet, and that your network is operational, you may contact the manufacturer via support@atris.nl for support.

Q: What should I do if I / my patient cannot log into the AtrisApp or AtrisCare App?

A: Check if the phone has an active internet connection (Wifi, 4G, 5G). Make sure that the patient has selected the correct healthcare institute during log-in in the AtrisApp. If that does not work, perform an in-app password reset by selecting 'wachtwoord vergeten' and request a new password. Still can't access the account? Revoke data sharing in Atris Patient Monitor, and re-invite the patient using the preferred mail address.

Q: What should I do if the PAM sensor does not connect to the AtrisApp, AtrisCare or Bigscreen?

A: The PAM needs to be shook to wake-up it up from stand-by mode. Try shaking it a bit more forcefully and try to connect again. If that does not work, try linking a different sensor to the patient by following the steps in



section 4.6 and 4.7. The PAM battery might be running low, which can cause connection issues. Batteries of PAM V2 can be replaced.



Q: What should I do if the PAM sensor is not read out by the Bigscreen?

A: Make sure that the sensor is within range of the Bigscreen (1-3 meters). Stand still and be patient, it takes some time to connect to the device and read-out the data. The read-out progress is displayed on screen

Q: What should I do if the AtrisApp or AtrisCare does not synchronize health data?

A: Log-out of the app and log back in to see if function is restored. If that does not resolve the issue, check if you have the latest version of the app installed by navigating to the Google Play Store or Apple App Store.

Q: I tried to reset my Atris Patient Monitor Password but did not receive an e-mail, what should I do?

A: Try requesting the password reset again and make sure you entered the correct mail address. Make sure to check the SPAM folder of your mailbox.

Q: For how many days does the PAM store data?

A: For about 7 days. If your patient is very active, recommend that they read it out more frequently using the AtrisApp or Bigscreen to make sure that data is not lost.

Q: I got a new phone and lost access to my 2FA code for Atris Patient Monitor, what now?

A: Ask an Atris Administrator at the hospital or clinic to reset your 2FA code. Next time you log in, you are able to reset it.

Q: The Bigscreen is not reading out PAM sensors of patients, is there anything I can do to improve its performance?

A: Ask IT to move the Bigscreen to a location with less interference or with better Wifi/cellular reception. It is also possible to attach a stronger Bluetooth antenna or LAN cable to the Bigscreen.

Q: The amount of recorded exercise from the PAM differs from the data shown by a smartwatch, such as the Fitbit, why is that?

Sensor Placement: The exact placement of sensors on the body can impact the data they collect. For example, if two people wear fitness trackers on different wrists or positions on the body, they may record slightly different motion patterns or physiological signals, leading to variations in the data.

Sensor Quality: The quality and accuracy of sensors can vary widely. Cheaper or lower-quality sensors may produce less accurate data compared to more advanced or expensive ones. Sensor calibration and manufacturing processes can also affect accuracy.

Sensor Technology: Different sensors use varying technologies to measure activity. For example, some may rely on accelerometers to detect motion, while others may use gyroscopes, heart rate monitors, or GPS. These technologies can have inherent limitations and biases.

Q: My Bluetooth heartrate sensor does not connect to the AtrisApp, which devices are supported?

A: The following CE-certified devices have been verified for use with AtrisApp: Polar H10 or the Garmin HRM-DUAL.

Q: the Bigscreen in my ward is not working; what should I do?

A: It usually helps to un-plug the orange box behind the screen back in for 30 seconds. Reconnect the power supply and wait for the screen to restart.

Q: What is the benefit of using a motion sensor?

A: Research has shown for years that bed rest is detrimental to patients. Bed rest causes complications and up to 40% muscle mass loss per week. As a result, recovery takes longer for patients. At the same time, research shows that deploying exercise sensors increases exercise and speeds recovery of physical function.



Q: What is Atris?

A: Atris is a software platform for Patient Monitoring. Different devices can be connected to this platform, such as the movement sensor. It allows health care providers to monitor their patients' health parameters in the hospital or at home

Q: What does the PAM motion sensor measure?

A: The exercise sensor measures "active minutes. In other words, how many minutes someone has actively moved. The meter is designed to measure 'walking' in particular. For example, turning in bed and standing still is not measured. Cycling on an exercise bike, doing squats, climbing stairs are measured and can result in various activity intensities. For more detail, see section 4.10 Table 1.

The outcomes of the PAM motion sensor worn by patients during admission are 96% consistent with the gold standard (ActiGraph) as seen in validation studies.¹

Q: Can the PAM motion sensor be worn around the ankle only?

A: Yes. The PAM AM400 motion sensor is made and validated for the ankle/lower leg. The sensor does measure movement around the wrist, but the results are not reliable.

Q: Can the sensor stay on day and night?

A: Yes. It can be worn all day, but the comfort of the sensor during sleep is moderate. It is not recommended for patients at higher risk of pressure ulcers.

Q: How do I know if the battery of the motion sensor is empty?

A: In Atris Patient Monitor, you can see the battery status, however this value is unfortunately not very reliable yet. If the value is around 70%, you can assume that the sensor is empty. The supplier is working on this but it is a technically difficult bug to solve.

Q: How does the data from the motion sensor get into Atris?

A: This can be done in several ways:

1. Via a Gateway on the nursing ward. This is a box behind the screen that displays the exercise minutes (Atris Big Screen). This box reads the sensor via Bluetooth within a radius of 3 meters and then sends the sensor data via a secure connection to the Atris data server.
2. Via the Atris App. This is a personal mobile app that a patient can install on their own phone. For this, the patient must be invited by a healthcare provider via the Atris Patient Monitor through Data Sharing option.
3. Through the Atris Care App. This is a mobile app for caregivers that allows all sensors within a radius of 3 meters to be read one by one.

Q: How does the Data Sharing option work?

A: Through Data Sharing a patient can be invited by a healthcare provider to use the Atris App mobile app. The patient will then receive an email with instructions. Once the patient is logged into the app on his or her own phone, the patient can read the motion sensor and see the motion data in the app. This data is then also available to the caregiver in Atris Patient Monitor. The mobile app can be used both at home and in the hospital.

Q: The patient has not received an e-mail invitation for AtrisApp.

¹ Valkenet K, Bor P, Reijneveld E, Veenhof C, Dronkers J. Physical activity monitoring during hospital stay: a validation study. *Disabil Rehabil.* 2023 Feb;45(3):449-454. doi: 10.1080/09638288.2022.2034995. Epub 2022 Feb 17. PMID: 35175168.



A: Check if the correct e-mail has been entered into the data sharing field. Make sure that the patient has given the correct mail address. Check the patient's spam folder, and check if they are looking at the correct mailbox. For example, @gmail.com instead of @outlook.com.

Q: How does the patient access the AtrisApp?

A: For this, the patient must be invited by a healthcare provider via the Data Sharing option. The patient will then receive an email with a link to the App. Detailed instructions can be found here. The app can be downloaded from the Apple App store or the Google Play Store.

Q: What do the 3 colors of the bars in the graphs mean?

A: The motion sensor measures how many minutes a person is active. The 3 colors in the activity graph indicate the intensity of these activities:

- lightest red = mildly intensive exercise (such as transfers and leisurely walking)
- medium red = moderately intense activity (such as brisk walking)
- dark red = heavily moved (such as running)

Q: Can the PAM sensor get wet?

A: No, unfortunately not. The blue version of the movement sensor is not waterproof. So the sensor must come off while showering or swimming.

Q: Does the motion sensor have a GPS function?

A: No. The sensor does not contain a GPS. Atris can only see how active someone is, and at what time of day. It cannot see where someone is or was.

Q: Can you chat through the mobile app with someone in the hospital?

A: This depends on the settings for the health institute, some may enable the chat functionality, while others disable it.

Q: Can the exercise sensor be taken home?

A: This varies by department and care pathway. Discuss this with the healthcare provider. The AtrisApp does support recording of the activity data from home.

Q: I have the idea that the motion sensor does not register enough movement.

A: The motion sensor has been examined and compared with a sensor that is considered the gold standard (the ActiGraph).¹ This showed that the registration of the PAM corresponds 96% to the gold standard. A few points of interest:

- The PAM is primarily made to measure walking. Therefore, cycling (especially on an exercise bike) may not be measured quite right.
- It is known from research that people overestimate themselves when it comes to exercise. Therefore, questionnaires about exercise are also not reliable and instead we put in sensors for reliable and objective results.²
- The 3 different intensities (light, moderate, heavy) have not been examined for reliability. So it may happen that after a round of running, not all these minutes are registered as 'heavy intensity'. So, look mainly at the total score and trends.

² Kapteyn A, Banks J, Hamer M, Smith JP, Steptoe A, van Soest A, Koster A, Htay Wah S. What they say and what they do: comparing physical activity across the USA, England and the Netherlands. *J Epidemiol Community Health*. 2018 Jun;72(6):471-476. doi: 10.1136/jech-2017-209703. Epub 2018 Apr 11. PMID: 29643112; PMCID: PMC5969391.