SMART 06

Wearable technology

How to use tracking devices to support your lifestyle and to keep up with your health and wellness.

Start course >

SMART | MODULE 6

Wearable technology

SMART modules 1, 2 and 3 focused on mobile devices, SMART module 4 discussed mobile security while SMART module 5 considered the more advanced topic of using maps and calendars on mobile devices. The next step is to look at wearable technology. We will focus on wearables for health, well-being and lifestyle with a particular focus on smartwatches.

Intended audience

This module is targeted at learners who have confidently completed the **SMART** modules 1 to 4, and the **HEALTHY** modules 2 and 3.

It is intended to provide a practical guide for those confident learners on how wearable devices can be used for lifestyle purposes (usually in conjunction with smartphones) and to manage health and wellness.
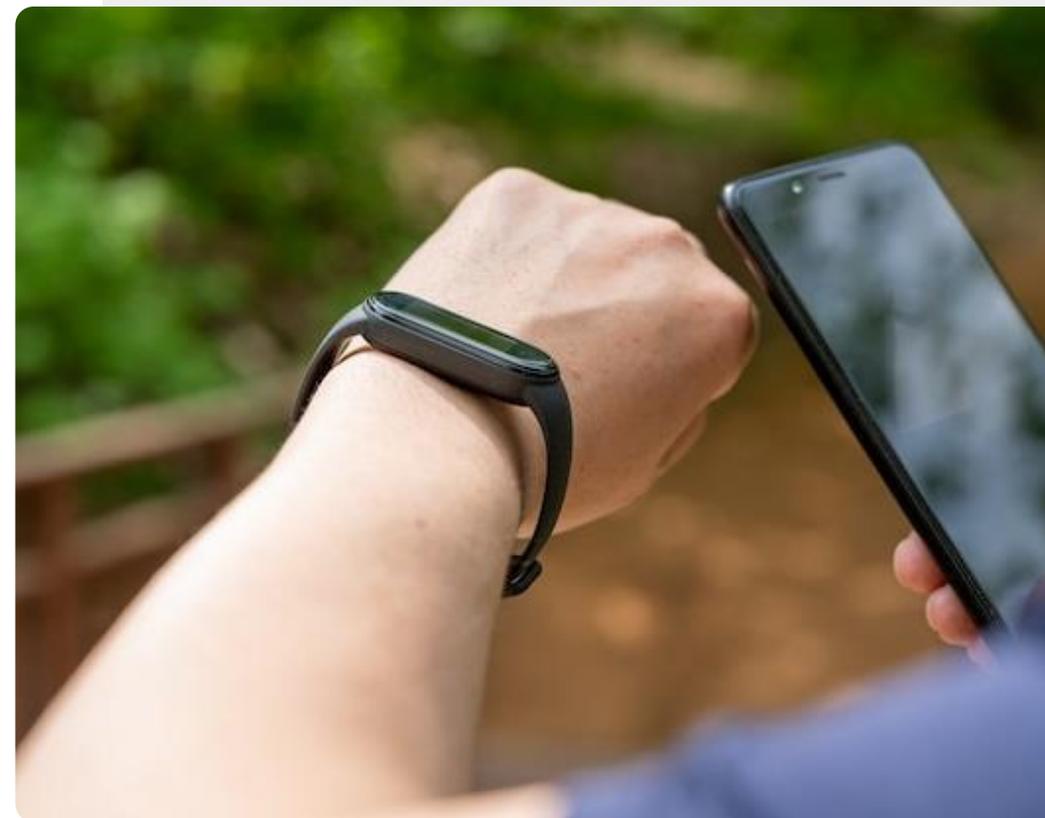
What will you learn in this module

1. An overview of wearable technologies and how they can support your lifestyle and what these devices can measure.

2. A review of how wearable technologies can be used for health and wellness.

3. How to use a chest strap to measure heart rate.

4. What beacons and key finders are and how they can be used for locating your belongings.

Chapters in this module

1	An overview of wearable technology
2	Wearables for health and wellness management
3	Setting up a smartwatch
4	Using a smartwatch

SMART | MODULE 6 | CHAPTER 1

An overview of wearable technology

This chapter will provide an overview of wearable technology, some of the features of this technology and how smart wearable devices can help you in your daily life.

What will you learn in this chapter

1 About different types of wearable technology.

2 How wearables can support your lifestyle.

3 About some of the features of wearable devices and some associated technologies.

What is wearable technology?

Wearable technology (often called wearables) is *"any kind of electronic device designed to be worn on the user's body"*. These devices can generally support your lifestyle in smart ways.

Wearables are usually worn close to the surface of the skin, to track, analyse, and transmit data, such as heart rate, sleep patterns and different types of physical activity.

*https://www.techtarget.com/searchmobilecomputing/definition/wearable-technology

Popular lifestyle wearables

There is a range of different devices that can be considered smart wearables. The image shows earbuds, a smartwatch and a smart pen.

These wearables have additional computing power that enhances their basic functionality to add extra smart features. Almost all wearables operate wirelessly and most need a connection to a mobile device to access the internet. An exception to this would be wired headphones, which can be plugged into your mobile device.

Let's consider some of these wearable devices.

Wearables for entertainment

Wearables are commonly used for recreation, for example, listening to music. In addition to more traditional wired headphones that plug into your mobile device, there is a range of wireless headphones and headsets such as:

- **headphones**: devices worn over the head

- **headsets**: headphones with microphones

- **earbuds**: small devices that fit directly into the ear
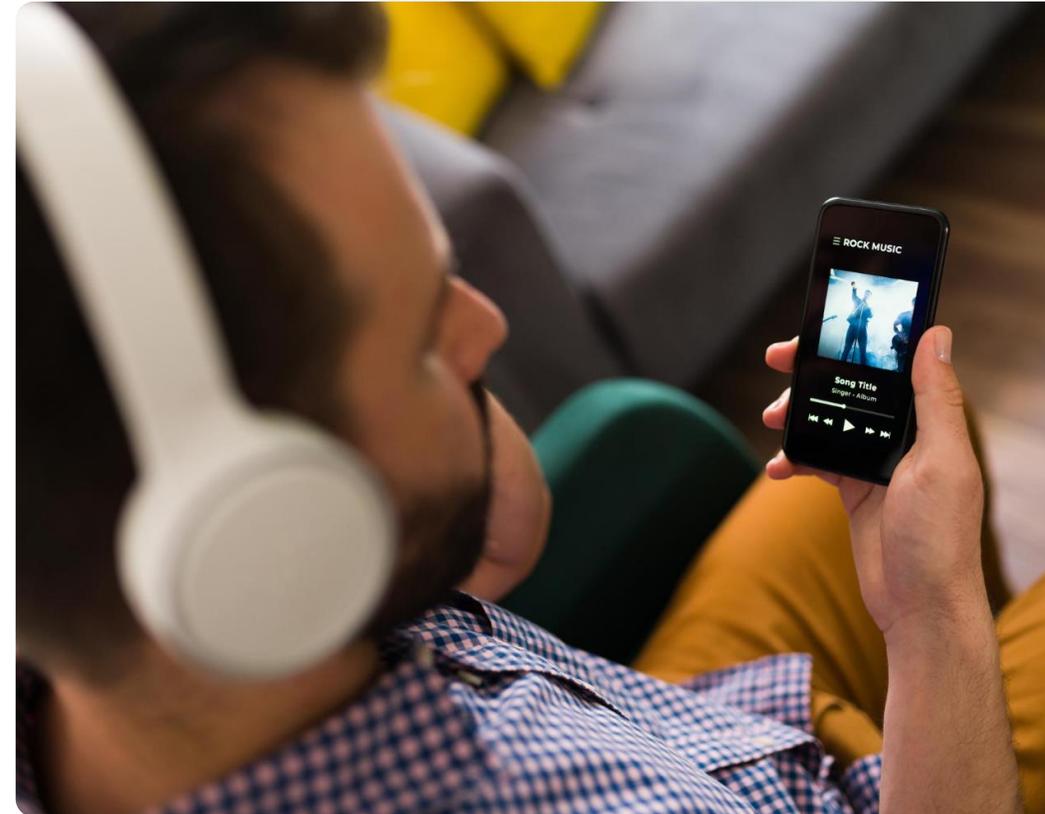
Wearables normally work with a phone

Smart wearables usually require a mobile device (usually a smartphone) to function, as they enhance the features of smartphones rather than rely only on their own more limited capabilities.

Have you ever wondered how music gets from a tablet to earbuds, or information about an incoming phone call gets to your smartwatch? The answer is by using Bluetooth®. Let's talk more about that.

The Bluetooth® word mark and logos are registered trademarks owned by Bluetooth SIG, Inc

Connected via Bluetooth®

The man in the picture is using a wireless technology called **Bluetooth**® to connect his earbuds to his phone. Bluetooth® can be used for linking wearables and mobile devices over short distances. Actually, most wearables are connected via Bluetooth®.

To allow this Bluetooth® connection to occur, and for information to be exchanged between the wearable and your mobile device, you need to first switch on the Bluetooth® feature on your mobile device.

Linking wearables to a phone by Bluetooth®

Bluetooth® is a wireless communication technology like Wi-Fi (mentioned in the previous SMART modules), but it uses lower power than Wi-Fi, so the wearable can communicate for longer between charges with the device it is connected to. However, it only works over short distances.

Wearables linked by Bluetooth® to a mobile device should be less than 10 meters away from the device that they are communicating with.

Bluetooth® is represented using the symbol shown in this image.
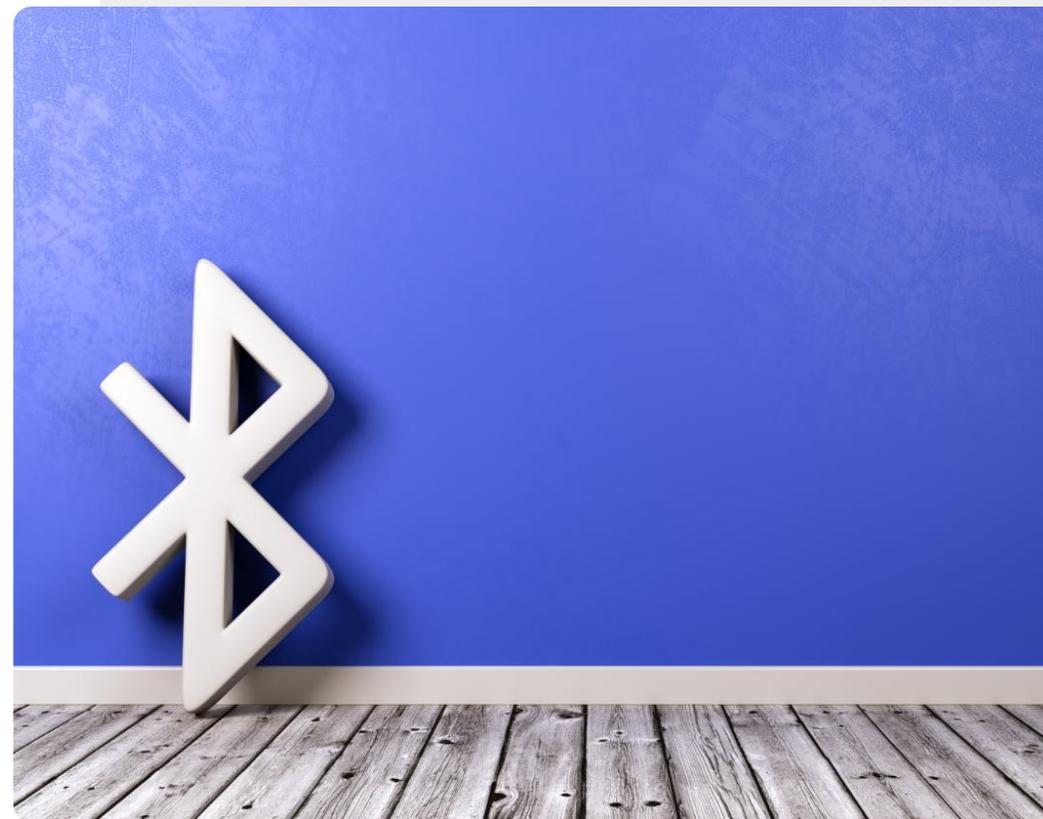
Bring your music with you

—

Do you like listening to the radio or music? With headphones or earbuds connected to your mobile device using Bluetooth®, you can bring your entertainment with you.

Either download your music to your device, so you can listen as you travel, or connect to an online site to listen to a podcast - which is like an online radio program. By using headphones, you can do that without disturbing those around you.

Wearables need to be charged regularly

It is necessary to charge wearables between uses. With a headset, this involves plugging it into a USB connector just like you use to charge your mobile device.

With earbuds, you charge the pod, the little case where the earbuds are stored, and the energy is then transferred to the earbuds each time you put them back in the pod.

Wearables for work and lifestyle: smartwatches

—

Smartwatches are arguably the first thing that comes to mind when smart wearables are mentioned due to their popularity and uses. They may be used in many ways depending on the features they support:

- For **time management**, for example, using alarms.

- For **making a payment** using your smartwatch as shown in this image.

- For **making and receiving calls** using a hands-free phone or for call notifications on simpler watches.

We will return to the smartwatch in later chapters.

Wearables for work and lifestyle: smart pens

—

Wearables can also be useful for work. Consider, for example, smart pens such as the Neo (shown in this image) or Livescribe.

A smart pen allows you to write on a page (sometimes on specially ruled paper), and a digital copy of what you write using the smart pen is automatically stored using an app on your mobile device.
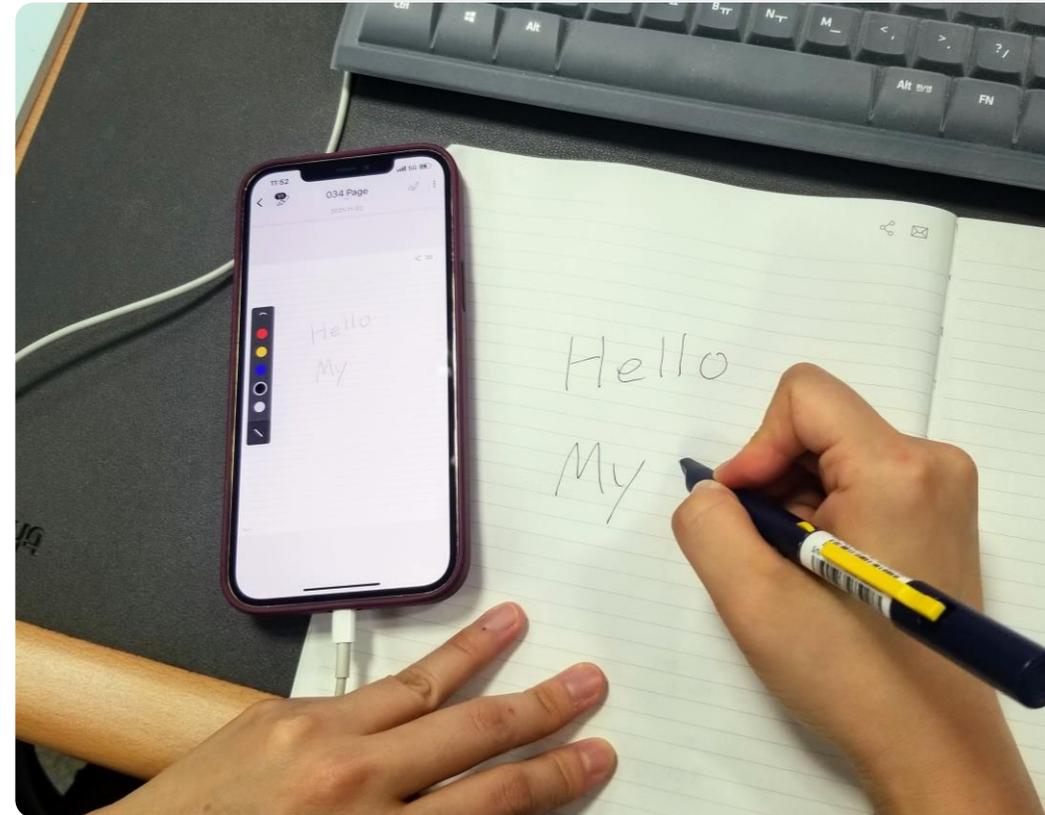
Buying a wearable device

It is important to think about how you will use them, so you make the right choice when purchasing one. Here are some things to consider to help make your decision:

- **Use** - does the wearable have features that you will use?

- **Cost** - some wearable devices can be expensive, but there are often less expensive alternatives. It is a good idea to ask about this or do some research.

- **Battery power –** how often will the device need to be charged?

- **Charger** - is the charging system well-made and easy to use? Does it have the right/standard plug adapter?
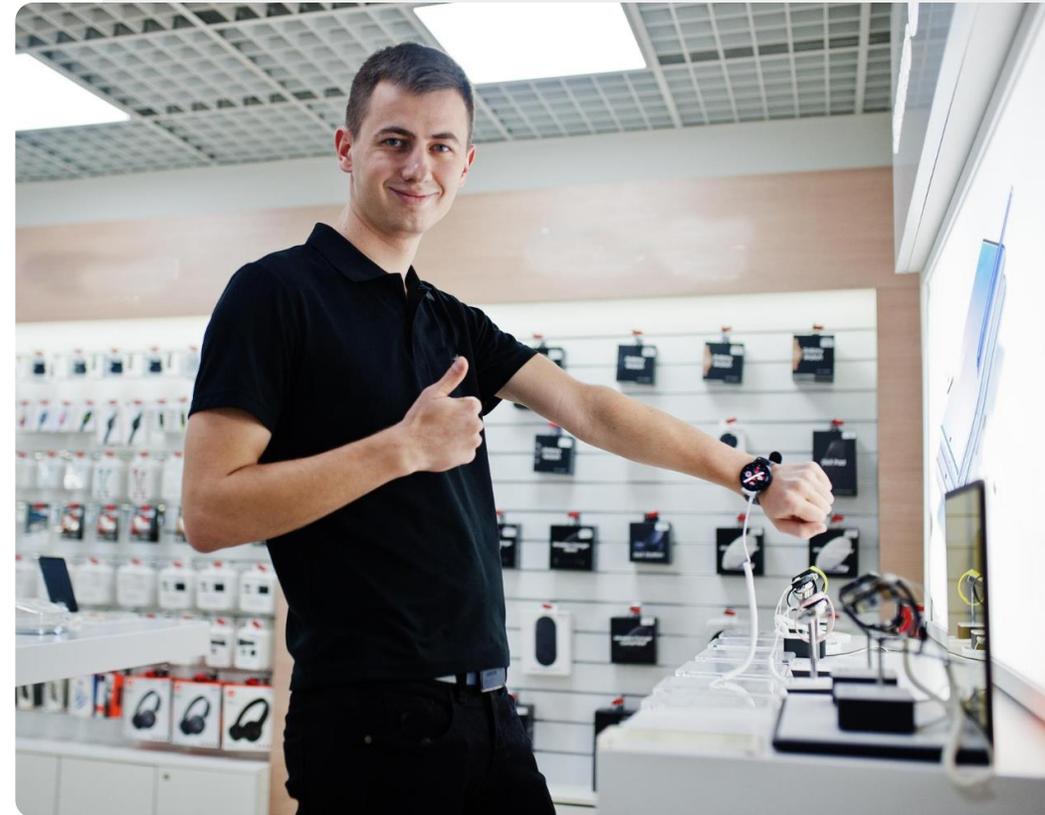
Do the task!
—

Teresa wishes to buy a wearable to improve her lifestyle. What wearables could she consider?

- Meet and get to know Teresa. You can find information about Teresa here.

- Review this chapter and think of recommendations that you could give to Teresa about different lifestyle wearables.

☑ Quiz

Click the **Quiz** button to edit this object

SMART | **MODULE 6** | **CHAPTER 1** | An overview of wearable technology

Which technology do modern wearables most commonly use to connect with a smartphone?

○ Cable

○ Bluetooth

○ All of the above

○ Wifi

Chapter completed!

Congratulations! You have successfully completed this chapter!

Summary of acquired skills

1 The concept of wearable technology and some associated features and technology.

2 What different wearables can do for you.

3 How wearables can support your lifestyle in different ways.

What is next?

Now you can either repeat this chapter or follow our study recommendation by clicking on one of the buttons below:

Restart   Next

Hands-on SHAFE
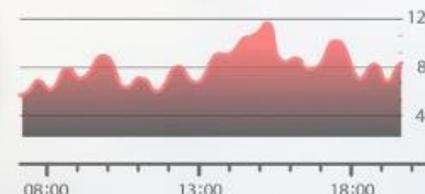
Wearables for health and wellness management

The last chapter introduced wearable technology and how a range of wearable devices can be useful when used alongside mobile devices. This chapter focuses on the use of wearable technology for managing health and wellness by measuring the relevant parameters.

Wearable technology and health – a real "game changer"

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We have seen that wearables can support your lifestyle, but where they can have a profound and lasting impact is in health and wellness management.

Many wearable devices have multiple features that can help you to live a healthier life. They do this by providing information that enables and motivates you to change your behaviour in a positive and healthy way. Please go over to the **HEALTHY** modules to hear more about how to pay attention to your health and wellness.

HEALTHY

What will you learn in this chapter

1 About wearable technology that can be used to monitor your health and wellness.

2 About the difference between a wellness device and a device that is an approved medical device.

3 About a range of wellness devices and medical devices that can be used to measure your wellness.

Exercise and wearables

The module **HEALTHY 02: Lifestyle and Therapy** outlined the importance of staying active as we age. Wearable technology can support you in doing this. Some wearables include sensors that can measure your movement by monitoring the number of steps taken. They can also identify the number of calories burned during a workout.

HEALTHY

Remember: health data collected by wearables is personal data.

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In the module **SMART 04: Personal and Mobile Security** you learned about protecting your personal data. Health and wellness data can be immensely valuable for managing your health. On the other hand, the information that is collected by health and wellness wearables and stored on a computer in the cloud is potentially sensitive.

Each wearable user has a decision to make about whether the benefits of using wearable technology outweigh the potential risks associated with sharing personal health data.

Let's consider in the next slides the types of health and wellness data that could be collected.

SMART

Heart rate

Heart rate is the speed of the heartbeat measured by the number of contractions of the heart per minute. It can change depending on the body's physical needs.

Tracking these values can help to monitor heart health and help detect health issues and stress.

There are many types of heart rate monitors on the market, from fitness trackers to chest straps.

Heart rate variability

—

Heart rate variability (HRV) is a measurement of the variation in time between heartbeats. Factors such as stress, unhealthy diet, isolation, lack of exercise or poor sleep patterns can increase adrenaline, which affects breathing, heart rate and blood pressure. A low HRV is a sign that a person is experiencing one of the above effects.

As an example, the Fitbit® "Fibricheck" app can be downloaded to measure heart rate variability using a smartwatch and a smartphone.

💡 Did you know?

According to the European Society of Cardiology, the average resting heart rate is between 60 and 100 beats per minute.

This number can rise with age and be lower for people with higher physical fitness levels.

https://www.escardio.org/The-ESC/Press-Office/Press-releases/guidelines-on-management-of-fast-heartbeat-published-today
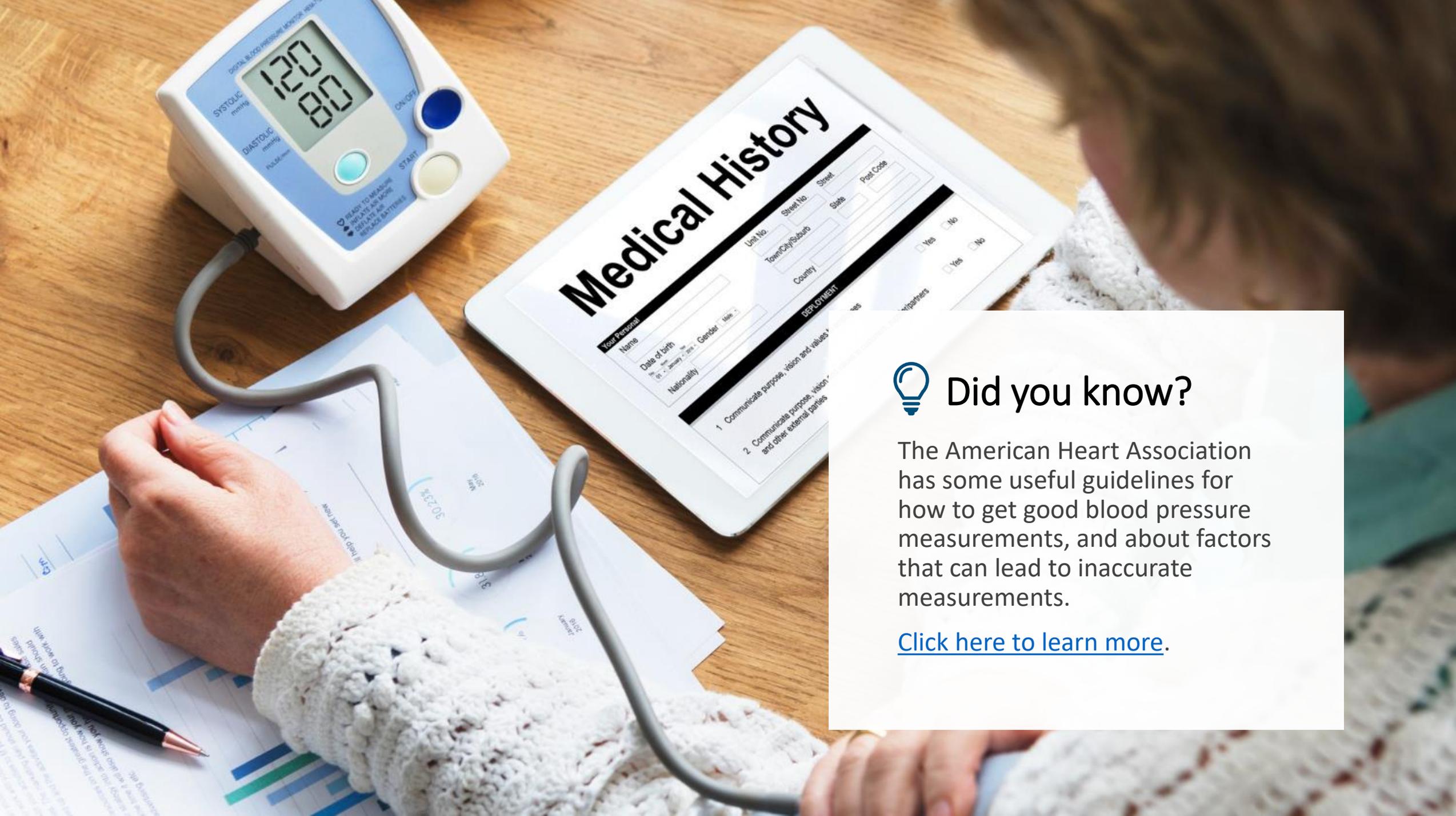
Blood pressure

Blood pressure is often measured during medical appointments, by a doctor or nurse. People who have abnormally high or low blood pressure may also monitor their blood pressure in their homes or during the day.

With the help of a wearable blood pressure monitor also a log could be created, which can be shared with a doctor and can facilitate the process of measurement.

There are several types of wearable blood pressure measurement devices, including those that can send information directly to your smartphone.

💡 Did you know?

The American Heart Association has some useful guidelines for how to get good blood pressure measurements, and about factors that can lead to inaccurate measurements.

[Click here to learn more](#).

Breathing

A spirometer is a device that allows you to measure the amount of air that you breathe.

Conditions such as asthma, chronic obstructive pulmonary disease and other conditions related to breathing can be monitored using a spirometer.
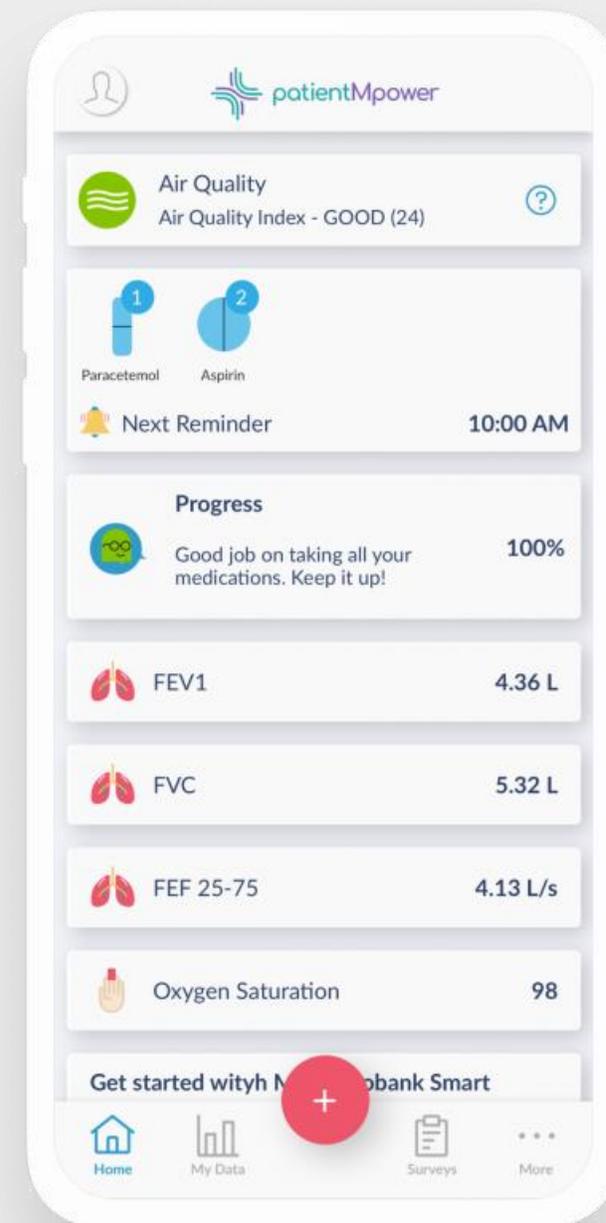
In the next slide, you can find an example of a smart spirometer.

Smart spirometer

There are several wearable smart spirometers. The "patientMpower spirometry" app, for example, can be used to monitor the results from the MIR Spirobank Smart spirometer.
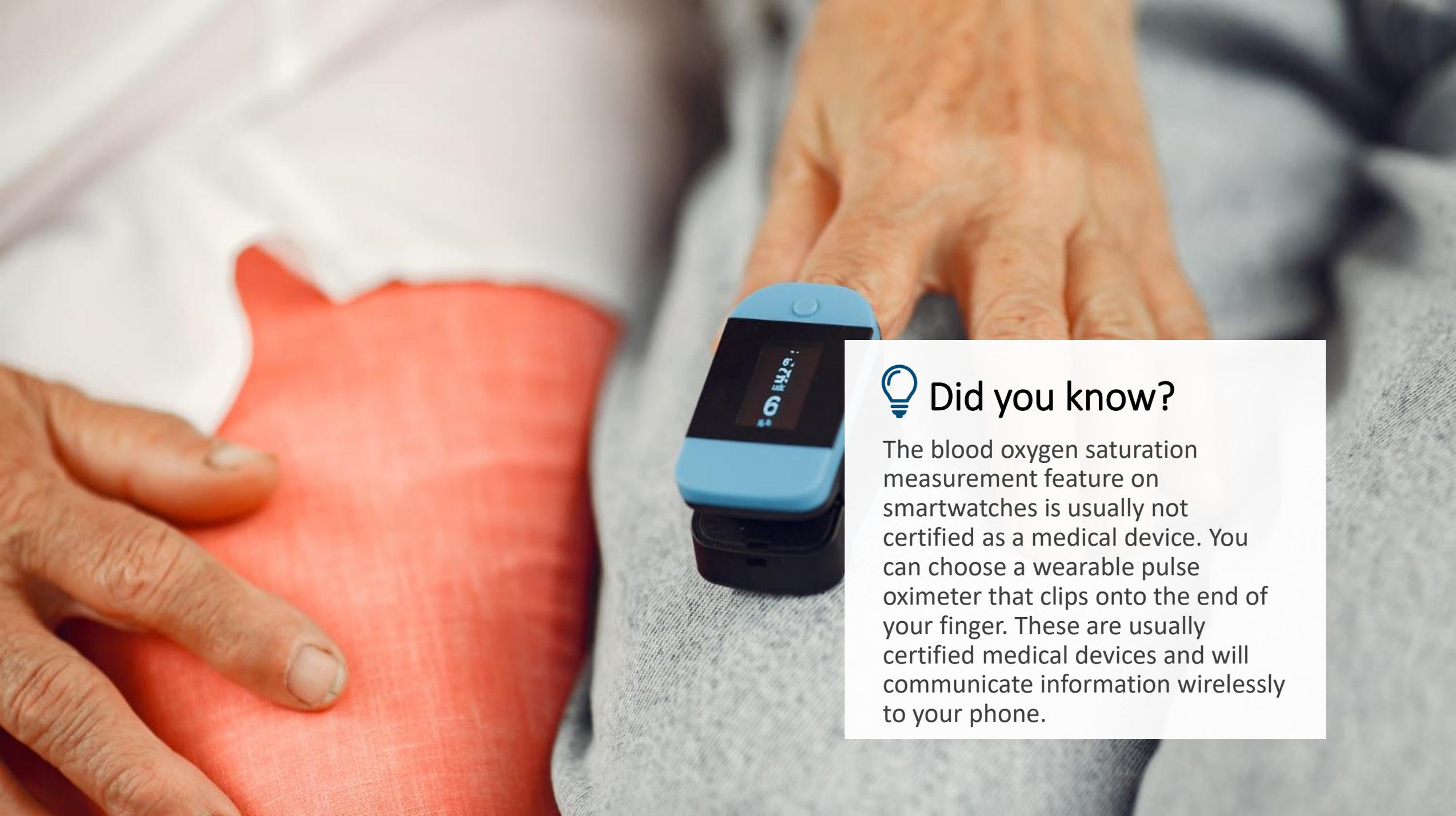
Blood oxygen saturation and pulse rate

As your heart pumps blood around your body, the level of oxygen increases and decreases in a regular way during each heartbeat. On the back of some smartwatches, there is a sensor that uses light beams to estimate these changed oxygen values in the blood. A smartwatch uses this sensor to monitor both, the amount of oxygen in the blood and the rate at which your heart is beating.

💡 Did you know?

The blood oxygen saturation measurement feature on smartwatches is usually not certified as a medical device. You can choose a wearable pulse oximeter that clips onto the end of your finger. These are usually certified medical devices and will communicate information wirelessly to your phone.

Sleep patterns and sleep quality
—

Sleep tracking is another feature of certain wearables.

Sleeping habits, length, and quality may all be tracked to assist the user to improve their sleeping patterns and experience.

All these and many more parameters can, for instance, be measured by tiny smart devices like smart rings, which are explained on the next slide!

Smart rings

Smart rings are smart like smartwatches: they track your health metrics but in a more discreet and fashionable manner.

Smart rings are a solution for people who want to track their health without the bulk of a smartwatch.

A smart ring, like the Oura smart ring, can be used to monitor exercise and other activities, and to measure parameters such as heart rate, activity, recovery, stress and temperature.

Falls and immobility

—

As we age, the strength in our limbs can often decrease. It is important for this reason to stay active and exercise regularly. Poor muscle tone and impaired balance can lead to falls. A fall can be particularly damaging for older people and can lead to serious injury or even death.

For this reason, a range of wearable devices has been developed for falls detection. Dedicated wristbands can detect when a fall has happened and can also notice when the wearer has been immobile for an unusually long period of time. The Apple Watch and other smartphones include a function to detect falls.

Blood glucose

—

Diabetes is a serious condition that is more common in an ageing population. People with diabetes may need to monitor their blood glucose levels a couple of times per day.

A medical device called glucometer and lancet is used for this purpose.

Continuous glucose monitoring (CGM)

In this approach, instead of measuring blood glucose, a small sensor is inserted under the skin of the arm, stomach or buttocks to measure the glucose levels in the fluid around the cells (interstitial fluid).

A CGM sensor can last for up to 10 years without having to change it. An antenna can send the signal to a handheld unit or a smartphone where the data can be stored on an app.

Continuous glucose monitoring (CGM)

—

The number of CGM measurement systems is growing all the time, but at the time of writing, there are CE-marked full medical devices by Freestyle Libre and Dexcom, and uncertified wellness devices that use this technology by companies such as Miao Miao and Nightscout. As they are not certified, these latter devices cannot be used for medical decision-making.

When buying, always consider whether the device could also be applied in conjunction with medical treatment for you.

Insulin pump and continuous glucose monitoring

An insulin pump like the one in the picture is a discreet way for insulin-dependent diabetics to control their blood sugar without resorting to injections. The insulin pump releases a continuously controlled quantity of insulin into the bloodstream through a thin tube like the one shown in this image. The tube is often connected to the abdomen. Modern insulin pumps include continuous glucose monitoring output, which can be picked up by an app.
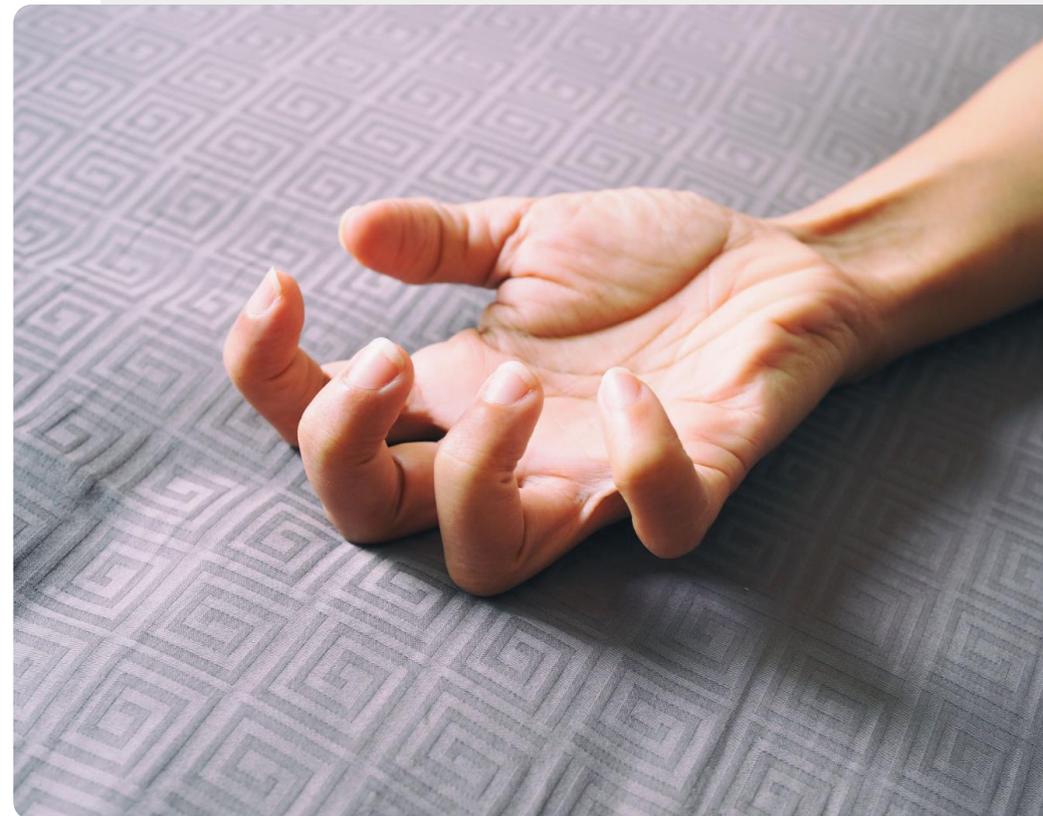
Seizure

A seizure is due to a burst of electrical activity in the brain which can cause twitching of the muscles.

The Empatica Embrace is a certified wristband for seizure detection. It can send alerts to carers when it detects electrical patterns associated with seizures.

Finding things

Beacons and key finders are very useful for people who forget things.

These small electronic devices can be used to locate misplaced or stolen objects, such as keys, pets, or tools, and to transmit alerts. They can be used to make the home more responsive and aid independent living.

As beacons operate using Bluetooth®, they are limited in their range of action.

Hearing mobile calls

Advanced hearing aids offer an automatic feature to allow the user to experience the environment naturally using the smart features in the hearing aid.

The sound quality is tuned to suit the user.

Modern hearing aids can be connected to a mobile device via Bluetooth®, so it makes it easier to make and receive calls.

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Medical device?

In the last few slides, you have learned about different devices supporting your health. Keep in mind that not all wearables are categorised as medical devices.

Medical devices are intended to be used to diagnose, treat or prevent disease.

Devices that are not classified as medical devices should only be used to guide a healthy lifestyle.

Wellness wearables are optional: medical devices may be necessary

It is important to emphasise that buying a **wellness wearable** is an option if you need help in adopting a healthier lifestyle and agree to the requirement of these services to have your wellness data collected and stored in the cloud. The data collected by a wellness wearable will be analysed by the cloud-based services. The feedback provided can help to promote healthy behaviour, but it is not as good as a doctor's opinion or proper tests.

Wearables that are **certified medical devices** often look similar to wellness wearables, but they are often prescribed by a doctor as an important part of a healthcare intervention.

In case of doubts, consult your doctor.
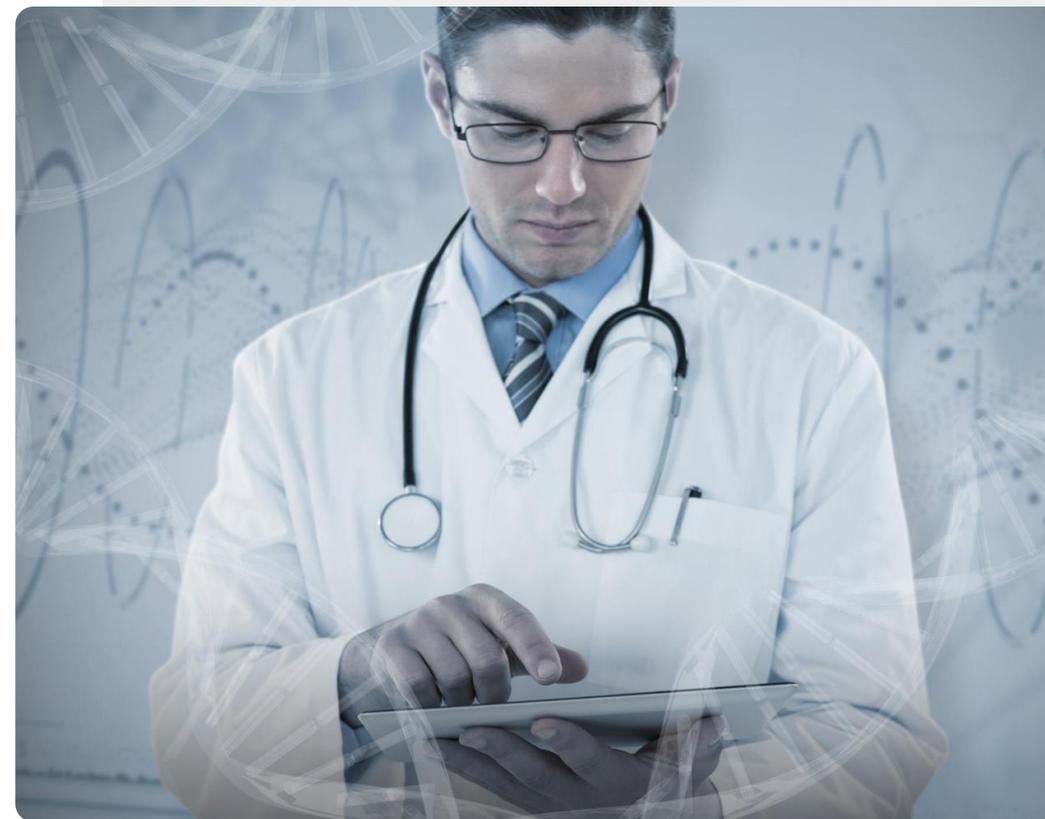
Will your wellness data motivate or discourage you?

—

In the case of a **medical device**, the main user of your data may be a doctor.

If you are considering buying a **wellness wearable device**, you will be the main user of the data. You should think about how viewing the data will affect you. Will lots of wellness charts motivate you to live more healthily, or will it discourage you?

You should think about this before buying a device. Also, if you become upset about your health status, it may be time to take a break from using the wellness device. Remember, a wellness device is optional, while a medical device may be necessary.

Do the task!

—

Teresa would like to know about wearables to help monitor her husband's condition. Can you help?

- Meet and get to know Teresa. You can find information about Teresa here.

- Teresa's husband has multiple chronic conditions. He has an appointment with the family doctor. Teresa would like to be prepared to ask about how wearables could help him to manage his health.

- What would you say to Teresa and her husband about different wearable devices that can monitor her husband's wellness and health?

☑ Quiz

Click the **Quiz** button to edit this object

SMART | MODULE 6 | CHAPTER 2 — Wearables for health and wellness management

In the context of wearable health devices CGM stands for...

- ○ Consumer generated media
- ○ Computer graphics module
- ○ Continous glucose monitor
- ○ Continous glycogen monitor

Chapter completed!

Congratulations! You have successfully completed this chapter!
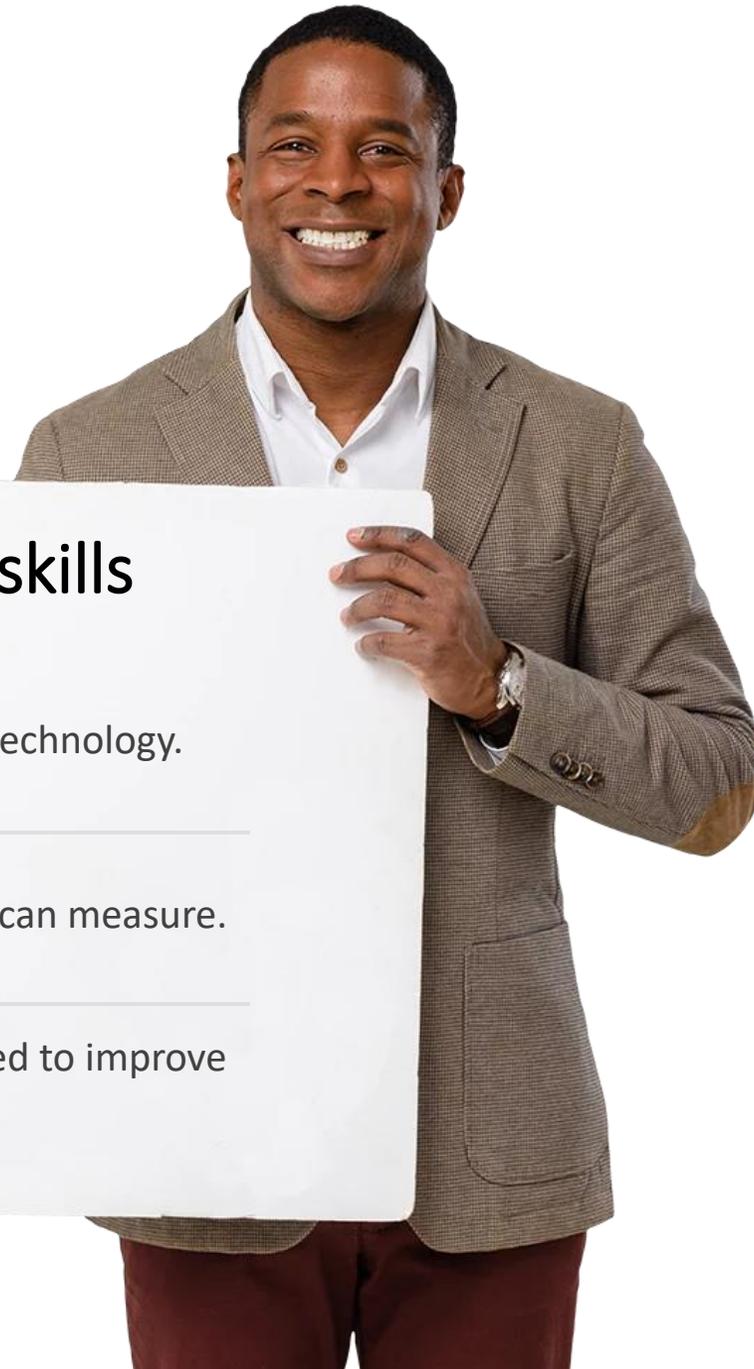
Summary of acquired skills

1 The concept of wearable technology.

2 What different wearables can measure.

3 How wearables can be used to improve health and wellness.

What is next?

Now you can either repeat this chapter or follow our study recommendation by clicking on one of the buttons below:

Restart   Next

Setting up a smartwatch

After receiving background information on wearables, in this chapter, you will find practical information to learn about setting up a Fitbit® smartwatch. Smartwatches can be very useful in encouraging you to keep active and healthy in your everyday life. This chapter looks at one popular smartwatch, the Fitbit® Charge 4™, but there are many other very good smartwatches on the market.

What will you learn in this chapter

1 How to connect a Fitbit® smartwatch to your phone.

2 How to track your steps.

3 How to monitor your heart rate.

4 How to monitor your sleep.

Smartwatches – what is all the fuss about?

Whether you are walking, jogging, cycling or using an exercise machine, smartwatches can record the level of activity and estimate the beneficial impact on your body. While measuring your heart rate and the number of steps you take, smartwatches can inform you about your daily level of activity.

This information can help to encourage you to establish your main activity goals and motivate you to keep active.

What is a Fitbit Charge®?

In this module, we will use the Fitbit Charge 4 smartwatch to demonstrate how this type of device works.

Besides telling you the time, the Fitbit Charge can also help you to monitor your physical activities and remind you to keep active. You can control your Fitbit Charge from the smartwatch screen or by connecting it to your mobile phone. However, a Fitbit Charge is only one type of smartwatch. There are many others.
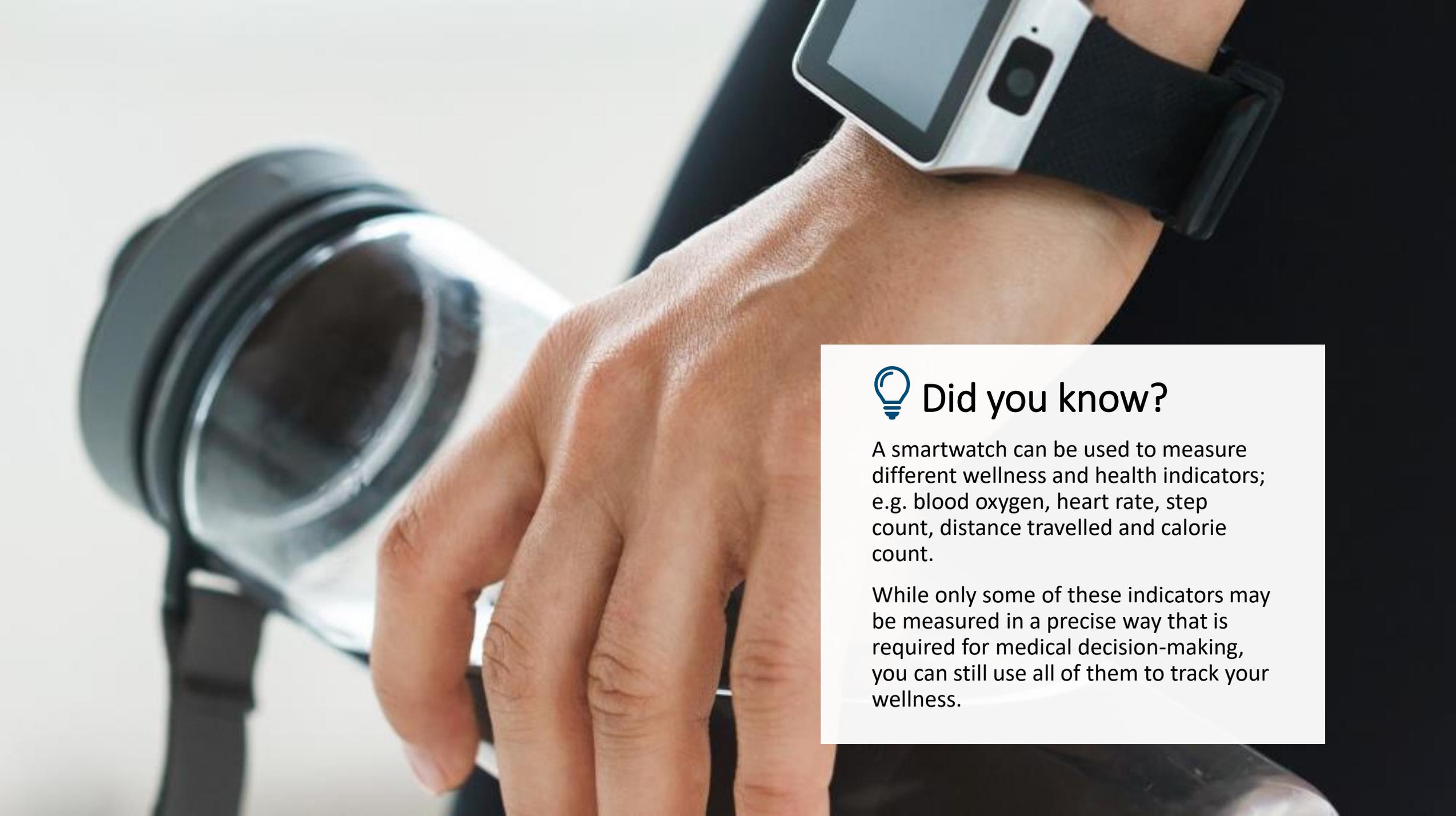
💡 Did you know?

A smartwatch can be used to measure different wellness and health indicators; e.g. blood oxygen, heart rate, step count, distance travelled and calorie count.

While only some of these indicators may be measured in a precise way that is required for medical decision-making, you can still use all of them to track your wellness.

Your Fitbit Charge® can connect to your phone

—

There are different types of smartwatches and different types of Fitbit devices. However, they will all connect to your phone in the same way – via a Bluetooth® connection. Before you can connect your smartwatch to your phone, you must download the Fitbit® app.

In the module **SMART 04 Personal mobile security**, we discussed personal data. Connecting any smartwatch to a mobile device usually involves sharing data such as name, contact details, age and weight on the cloud. Before taking this step, be sure that you are willing to share your data.
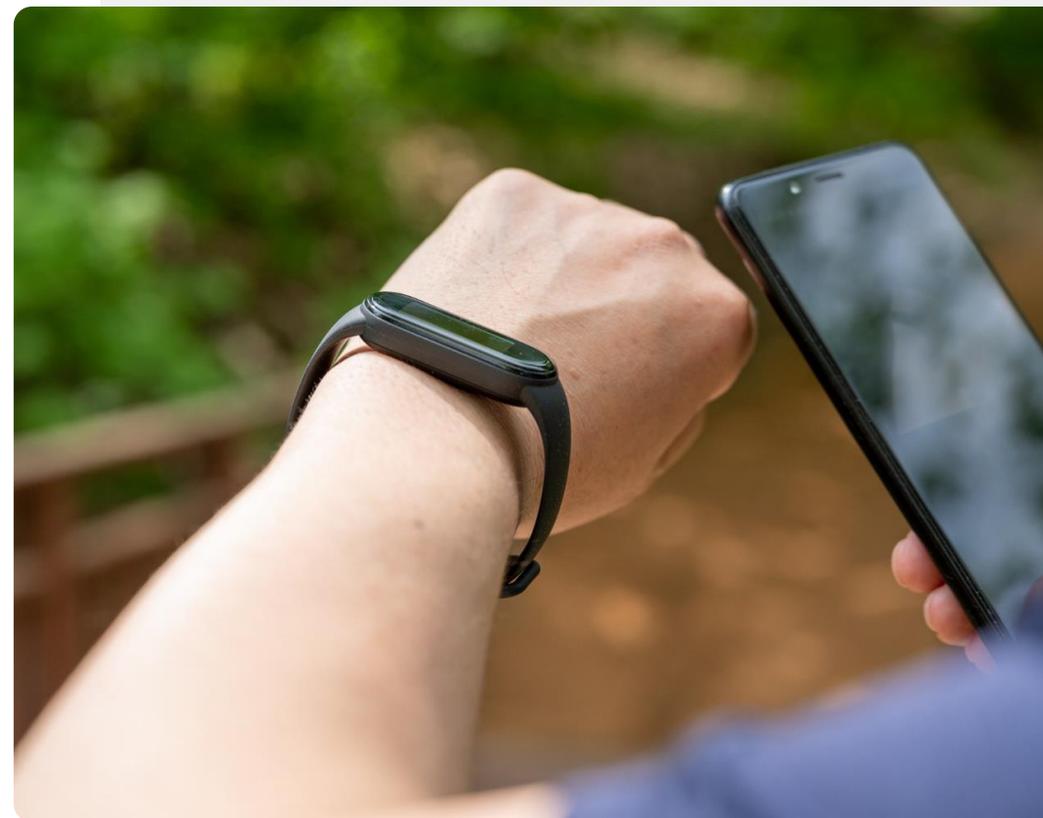
Step by step

Let's say you have just got a new Fitbit® smartwatch and you are excited to start using it. However, you don't know how to set up the connection between your new smartwatch and your mobile phone.

Is your Bluetooth switched on?

Like most other wearables, a Fitbit® Charge connects to your mobile device using Bluetooth®.

So, before we begin to set up a Fitbit® device, you should make sure that your mobile device's Bluetooth® feature is switched on.

The following slides show you how to do this.

Process

1

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Bluetooth® connection

To switch on your Bluetooth® connection, you can drag the top right side of your device as it appears in the blue arrow.

Process

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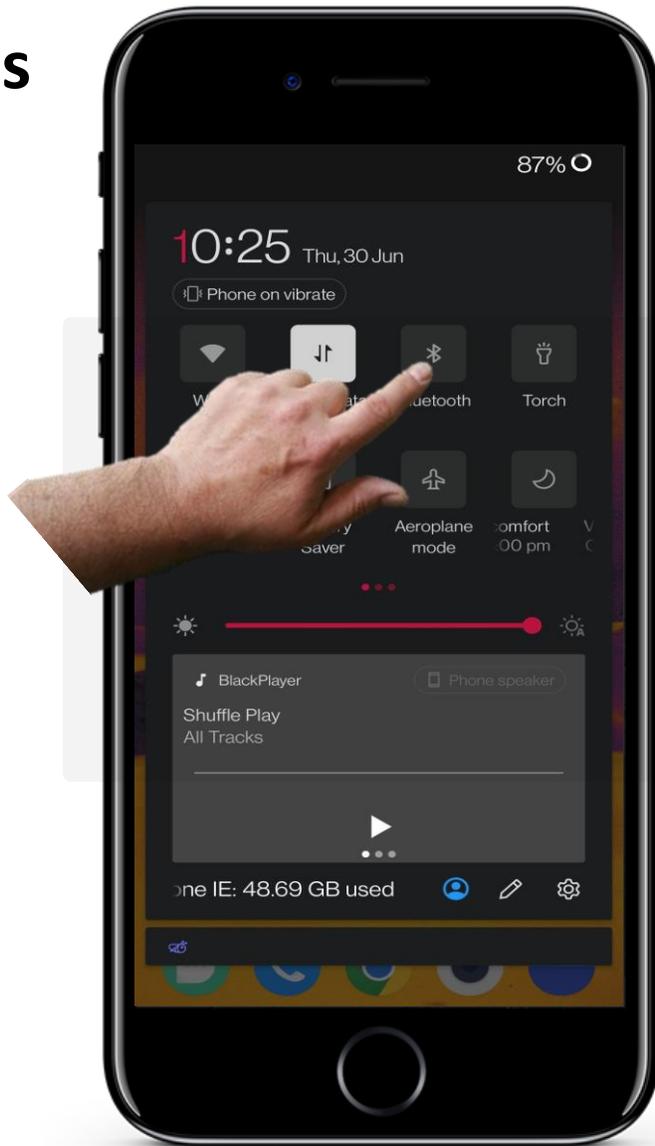
Bluetooth® connection

If the Bluetooth® icon is a dark colour, then Bluetooth is off.

Tap on the Bluetooth® button. It will change to a brighter colour, in this case, it will turn white, to show that Bluetooth® is on.

Process

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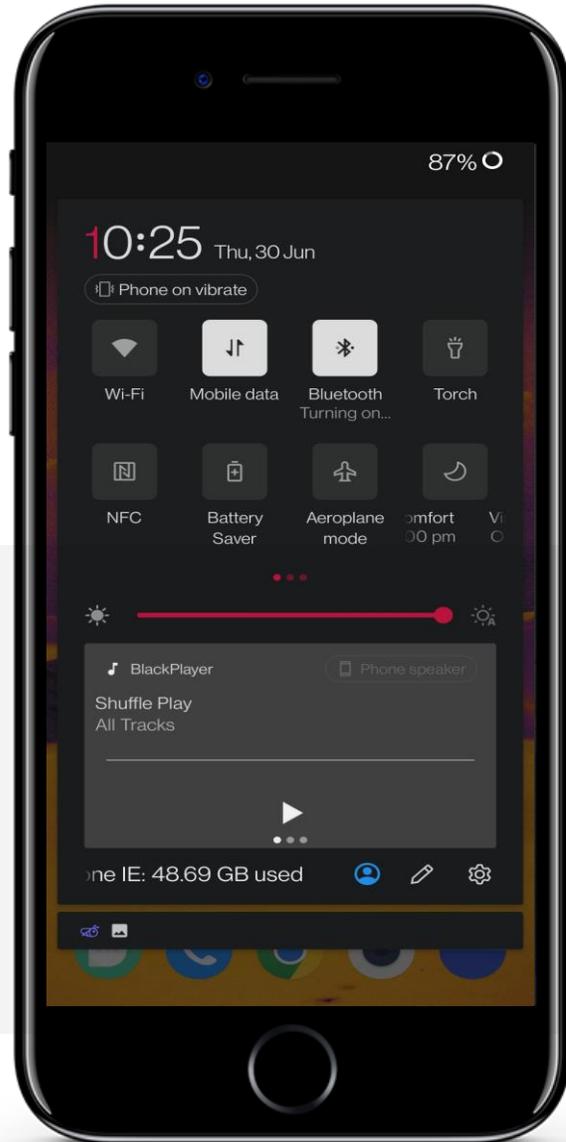
Bluetooth® connection

When the Bluetooth® button becomes white, it means that your Bluetooth connection is on.

Setting up the Fitbit Charge

Bluetooth is now active on your mobile device, so it can connect to your Fitbit Charge. You are now ready to go through the process of setting up your smartwatch.

Write down on paper the steps involved in setting up your Fitbit Charge smartwatch. There are quite a few steps but nothing too difficult. We will ask you about the steps at the end of the chapter.

Process

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Installing the Fitbit app

To start off, the Fitbit app must be installed from the "Google Play Store".

To do this, locate the "Google Play Store" on your device and type in "Fitbit" in the search bar.

Process

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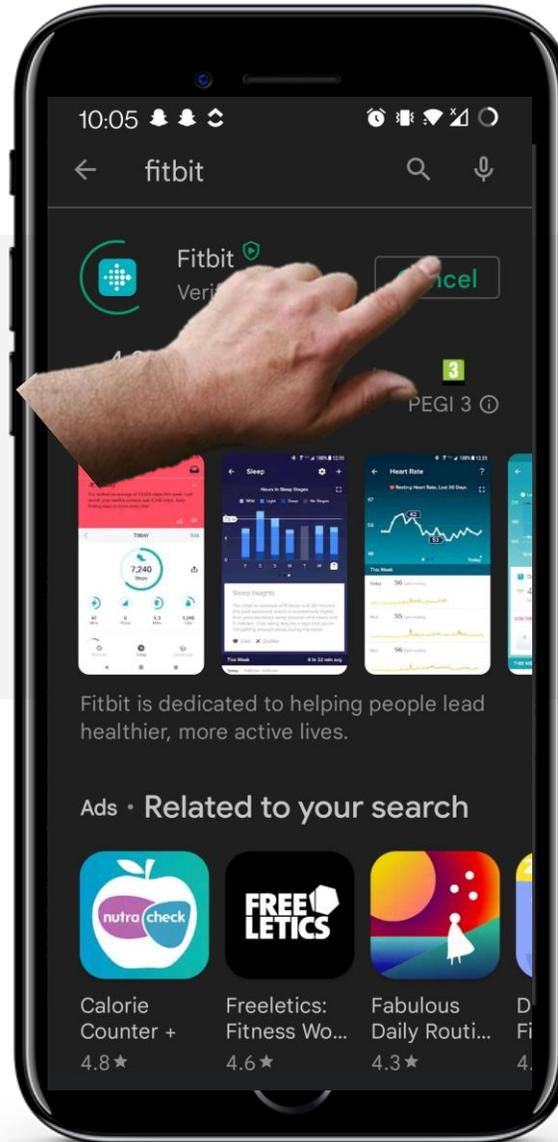
Installing the Fitbit app

Once you have found the Fitbit app on the "Google Play Store", click the green "Install" button.
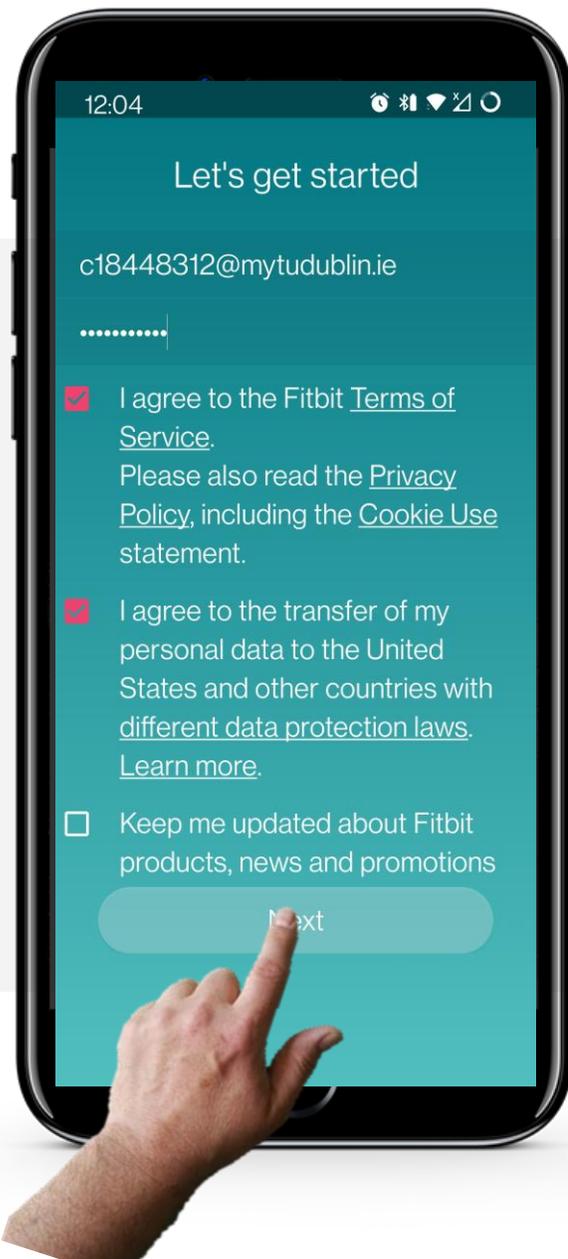
Wait for it to finish installing, then click on the green "Open" button once it appears.

Process

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12:04

Let's get started

c18448312@mytudublin.ie

•••••••••••

☑ I agree to the Fitbit Terms of Service.
Please also read the Privacy Policy, including the Cookie Use statement.

☑ I agree to the transfer of my personal data to the United States and other countries with different data protection laws. Learn more.

☐ Keep me updated about Fitbit products, news and promotions

Next

Entering your personal data to create an account

Once the app has been opened, you will begin the setup procedure. Input your email, create a password and agree to the Fitbit® terms and conditions. You will also have to agree to transfer personal data, including demographics and wellness data. Please refer to the discussion on GDPR in module **SMART 04 Personal mobile security** and decide whether this is of concern to you.

You may choose to stay updated about Fitbit® products, news and promotion via e-mail, but this is optional. Tap on the "Next" button once you are ready to proceed.

Process

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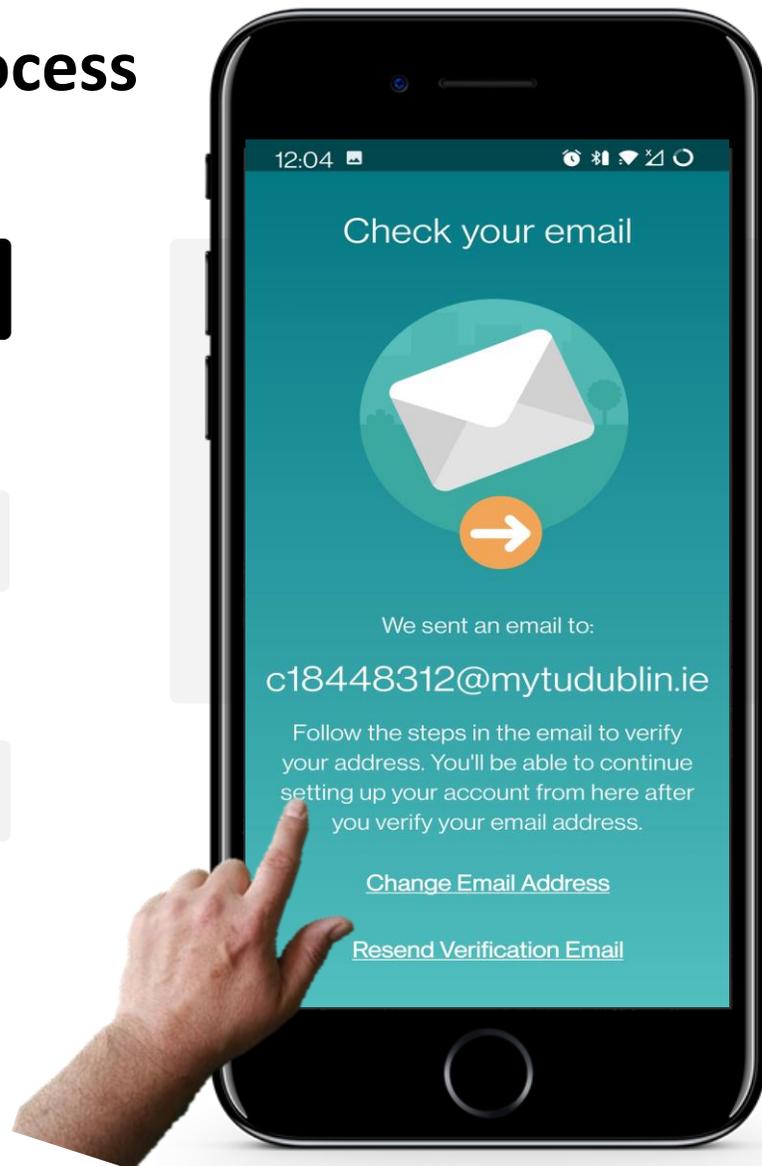
Check your email

After clicking the "Next" button, the app will send an email to the email address you provided to verify your identity. The email should normally arrive quickly, in less than one minute.
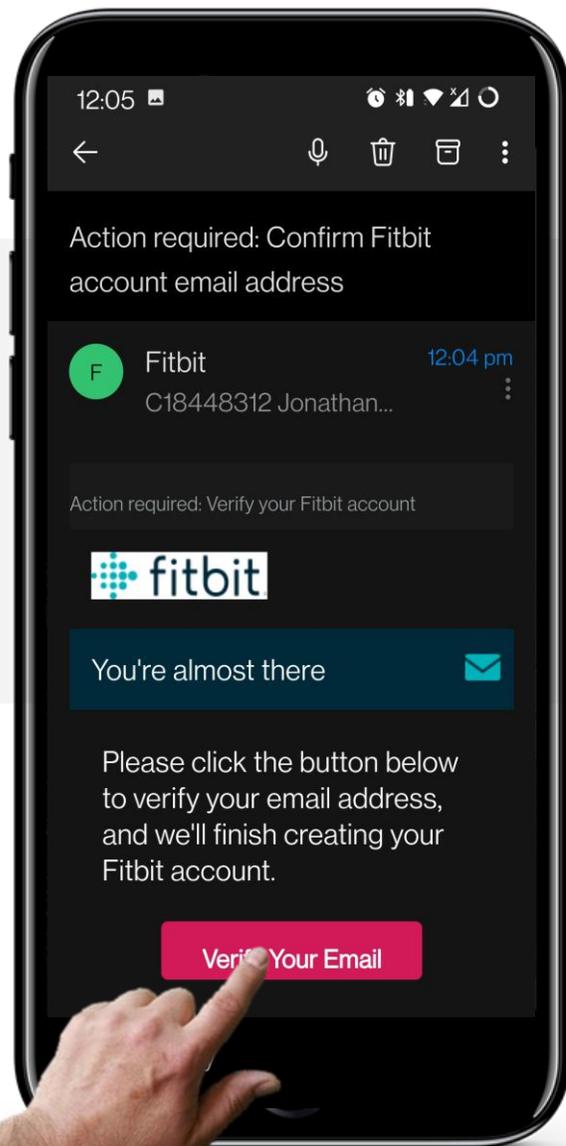
You need to look in your e-mail for this. Please see the module **SMART 03 How To Communicate By Text With A Smartphone** for receiving mails if you are unsure about this.
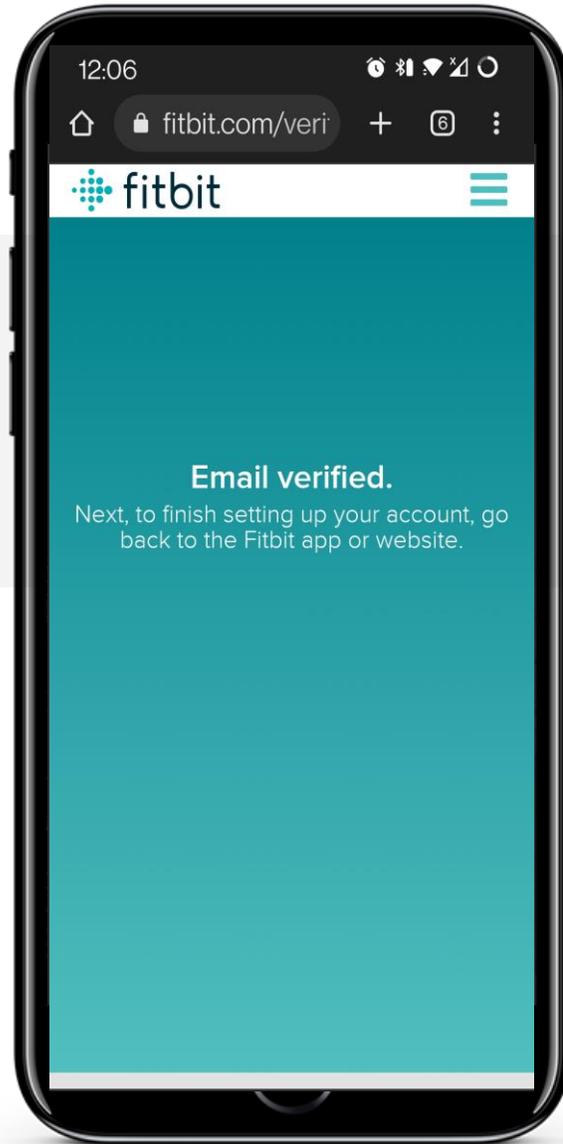
Process

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Verify your email

Check your email to find the confirmation message. Click on the email you received and click on the red "Verify Your Email" button.

Process

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6

Verifying your email

After clicking the red "Verify Your Email" button, you will be greeted with this verification confirmation screen. You may now return to the Fitbit application to continue setting up the application.
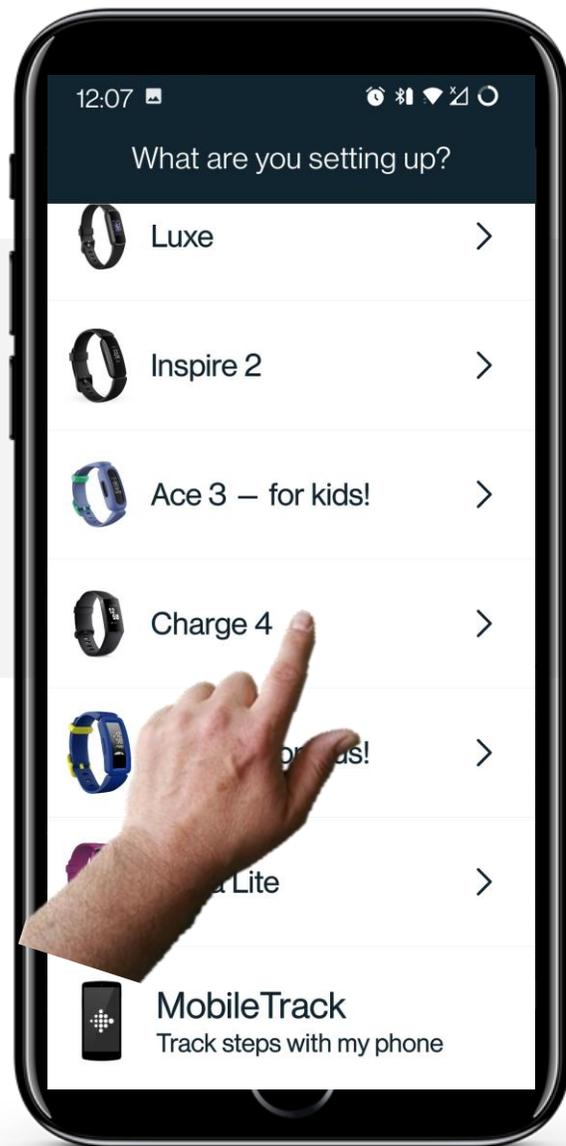
Process

7

8

9

Creating your profile and account using the entered data

Next, you'll arrive at an orange screen asking for your name, date of birth, height, weight and sex. Click on the "Create an account" button once you have entered in all the appropriate information.

You may also click the small white '?' button beside the "Why are we asking this?" text to understand why the application requires this information.
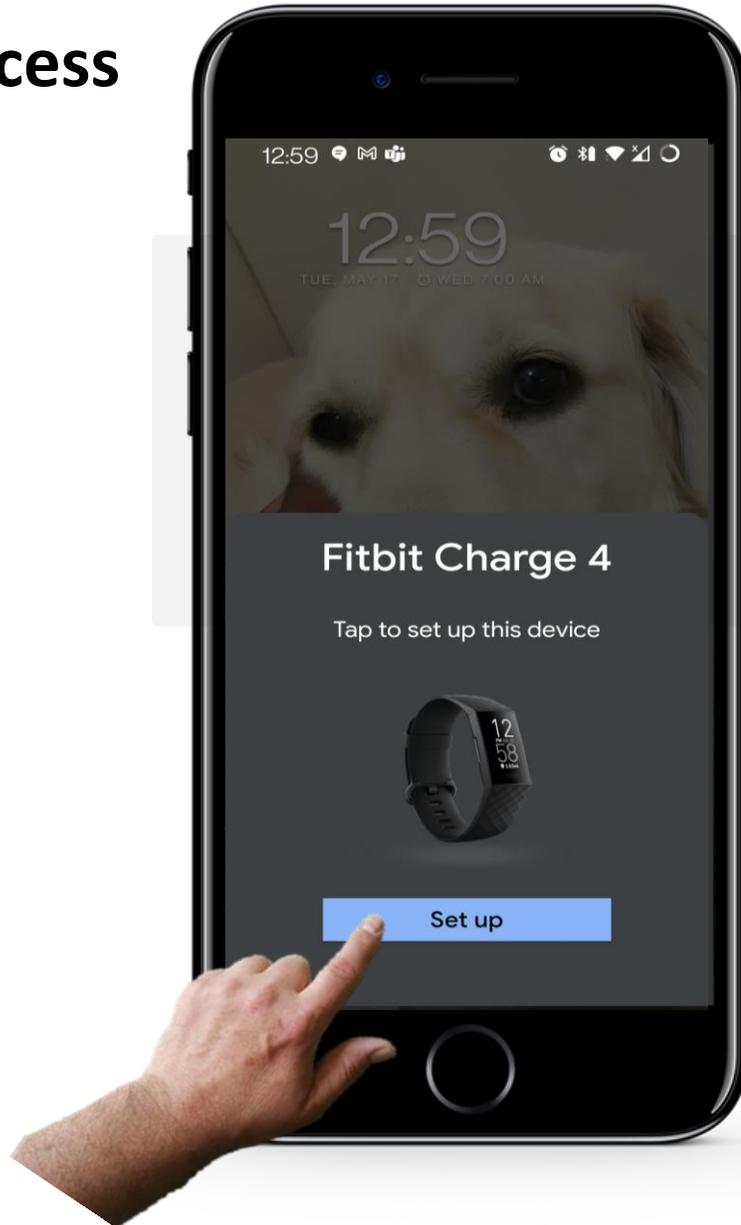
Process

7

8

9

Choosing your device

You will then be asked which device you will be setting up.

In this case, we will be setting up the Charge 4 device.

You can check which device you have by observing the packaging.

Process

7

8

9

Choosing your device

A prompt may come up on your phone's screen if Bluetooth® is already enabled on your mobile device.
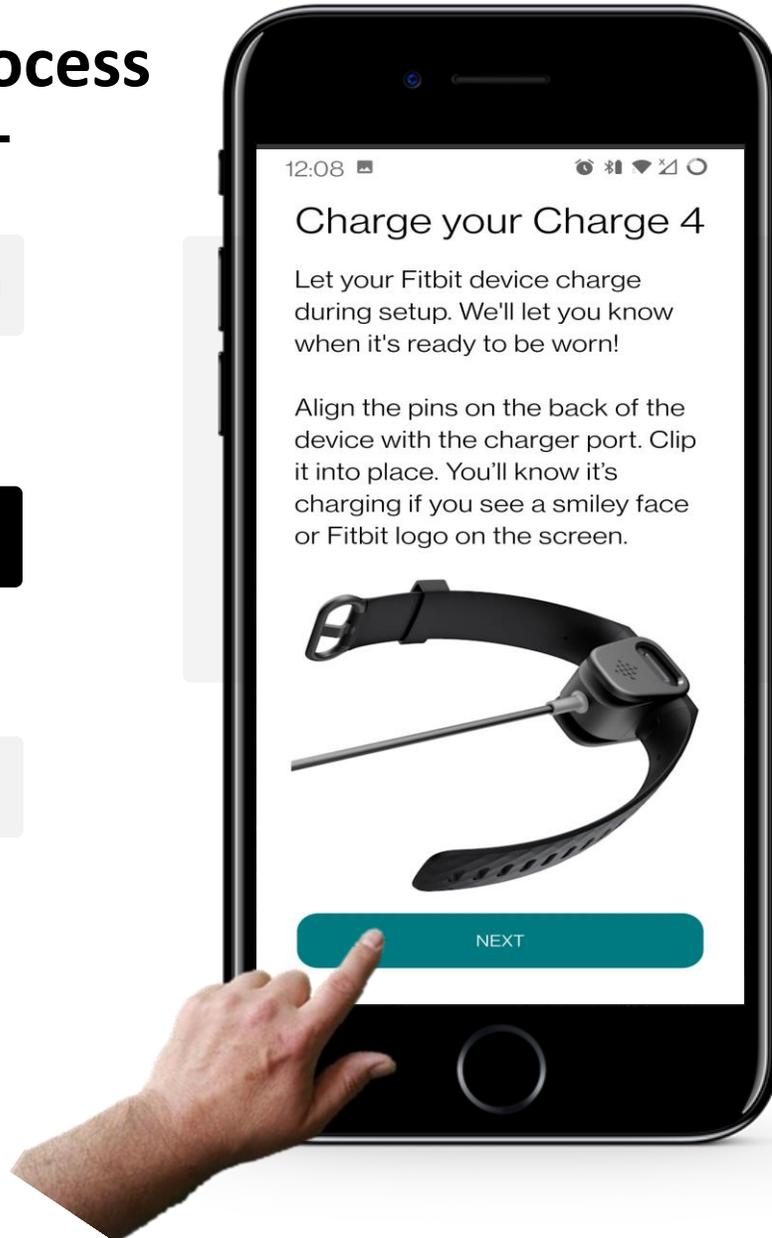
Tap on the 'Set up' button to proceed.

Fitbit Charge 4

Tap to set up this device

Set up

Process

10

11

12

Charging your Fitbit Charge

During set-up, allow your device to charge by using the charger provided in the packaging.

Process

10

11

12

Charging your Fitbit Charge

Ensure the pins at the back of the device are aligned with the charger port, then clip the device in place, as seen in the image on the left.

You will know it's charging if you see a smiley face on the smartwatch's screen. Click the "Next" button once it has begun to charge.

Process

10

11

12
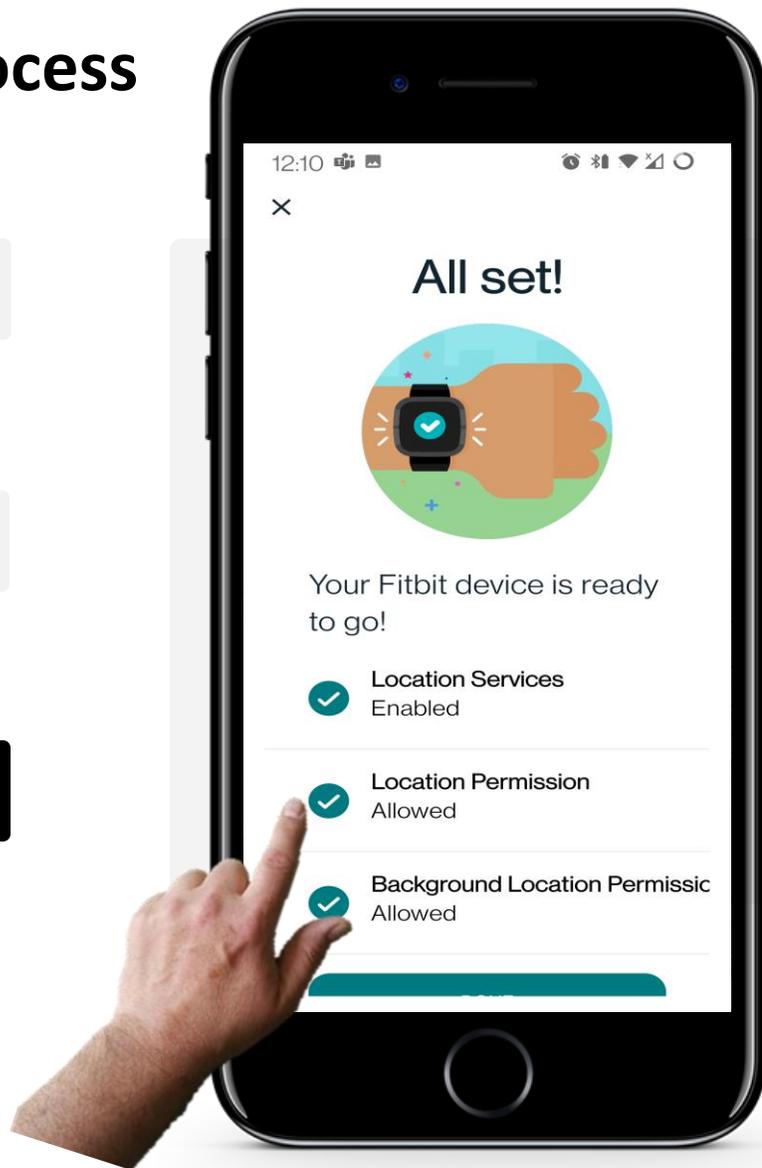
Allowing location related permissions

To ensure your smartwatch functions as intended, allow the app permission to use your phone's "Location Services" via the Fitbit application.

Please be aware that by doing this, you are sharing your location (personal data) with a cloud service.

Switching on "Location Permission" improves the performance of Fitbit®, but it is not necessary to do this.

Process

13

14

15

Pairing your phone with your smartwatch

Next, pair your phone to your smartwatch device using Bluetooth®.

Bluetooth® will have to be activated for this step and can be turned on in your phone's settings.

Once on, four digits will appear on your smartwatch's display screen.
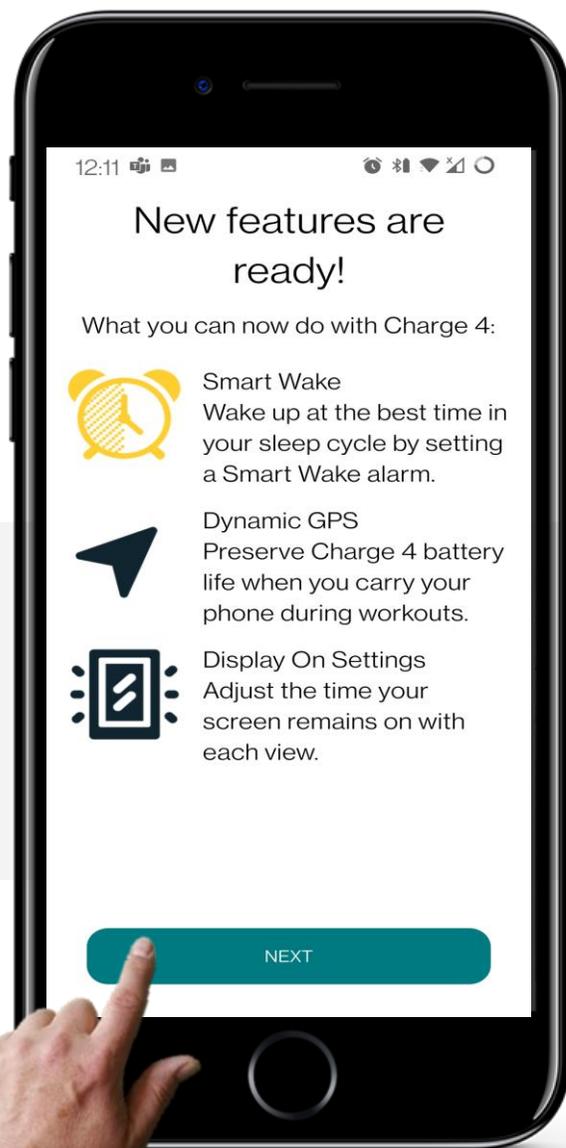
Process

13

14

15

Pairing code

Enter the 4 digits on your
device's display

7 1 4 5

CONNECTING...

Pairing your phone with your smartwatch

Input the four digits displayed on your smartwatch's display screen into your phone to pair them.

Process

13

14

15

Reviewing new features

Once both devices have been paired up, you will be shown some of the new features you will have access to.

Click on the "Next" button once you're ready to proceed.

Process

16

17

18

Try it on.

It's the moment your wrist has been waiting for!

Wear your device loosely enough to slide up and down your wrist.

During workouts, secure the band so that it lays flat, 2-3 finger-widths above your wrist bone.

NEXT
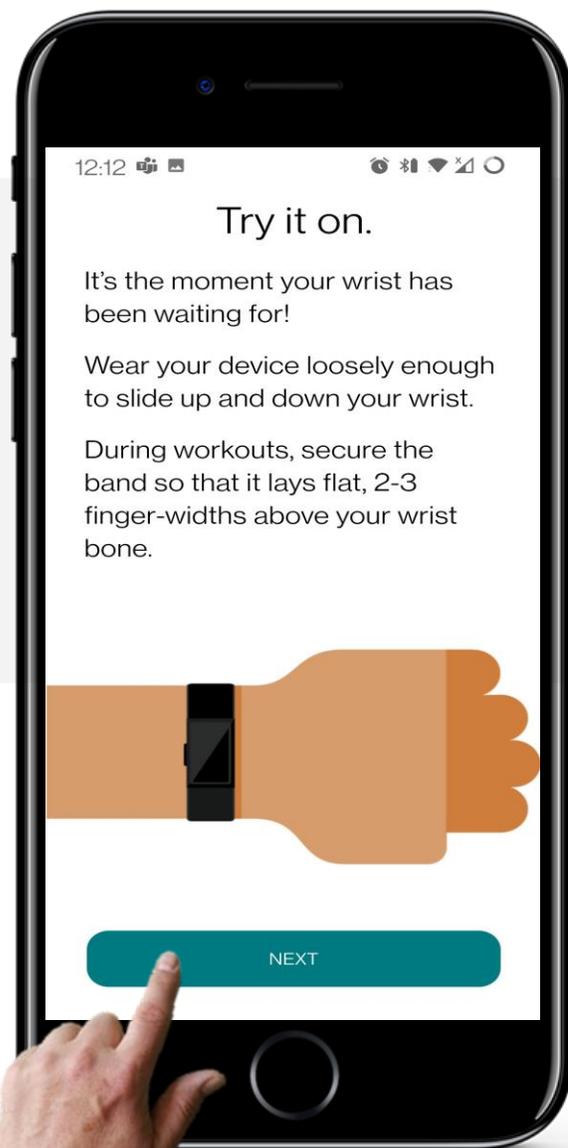
Putting on Fitbit Charge device

Ensure your smartwatch has charged up to a suitable level, then remove it from its charging clip.

Then wear your smartwatch on whichever wrist is most comfortable for you. Make sure the device isn't too tight on your wrist. Click on the "Next" button once you've put it on.

Process

16

17

18

Press button

Takes you back to the previous screen or to the clock face.

12:58

NEXT

Using the buttons and user interface of the smartwatch

The button on the left of the smartwatch acts as a "Go back" button.

Use it to go back to a previous screen or to display the current time.

Click on the "Next" button to view more tips and tricks that will help you navigate your smartwatch.
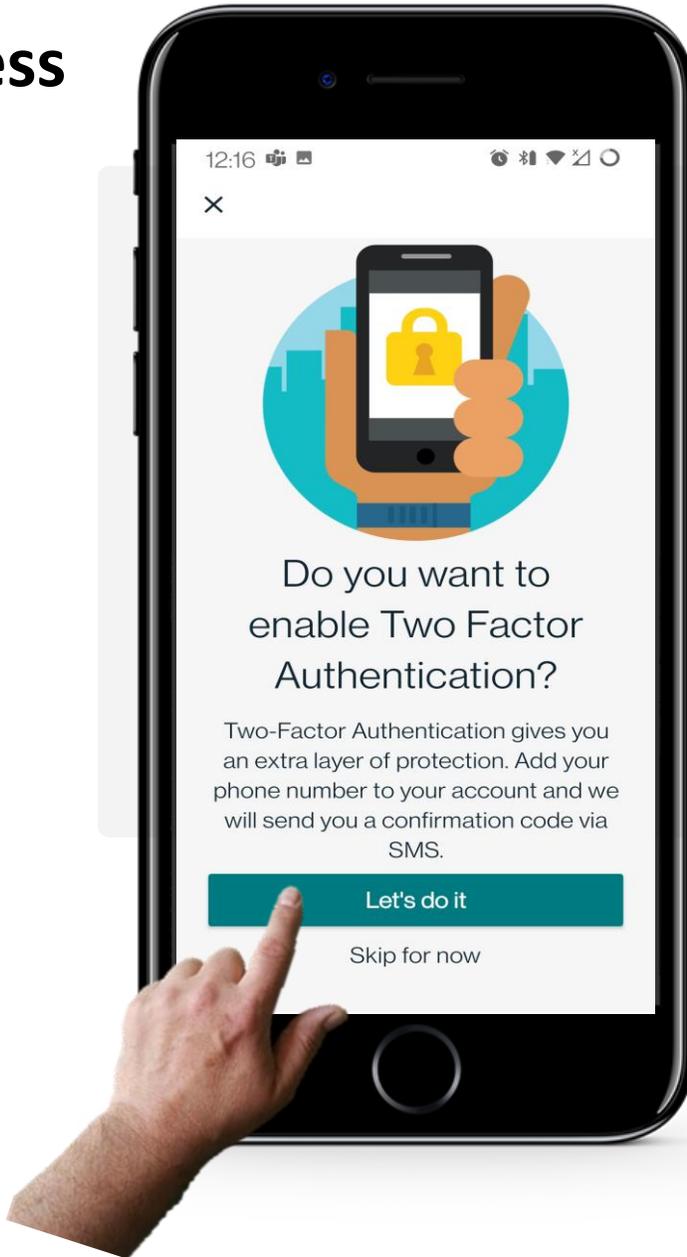
Process

16

17

18
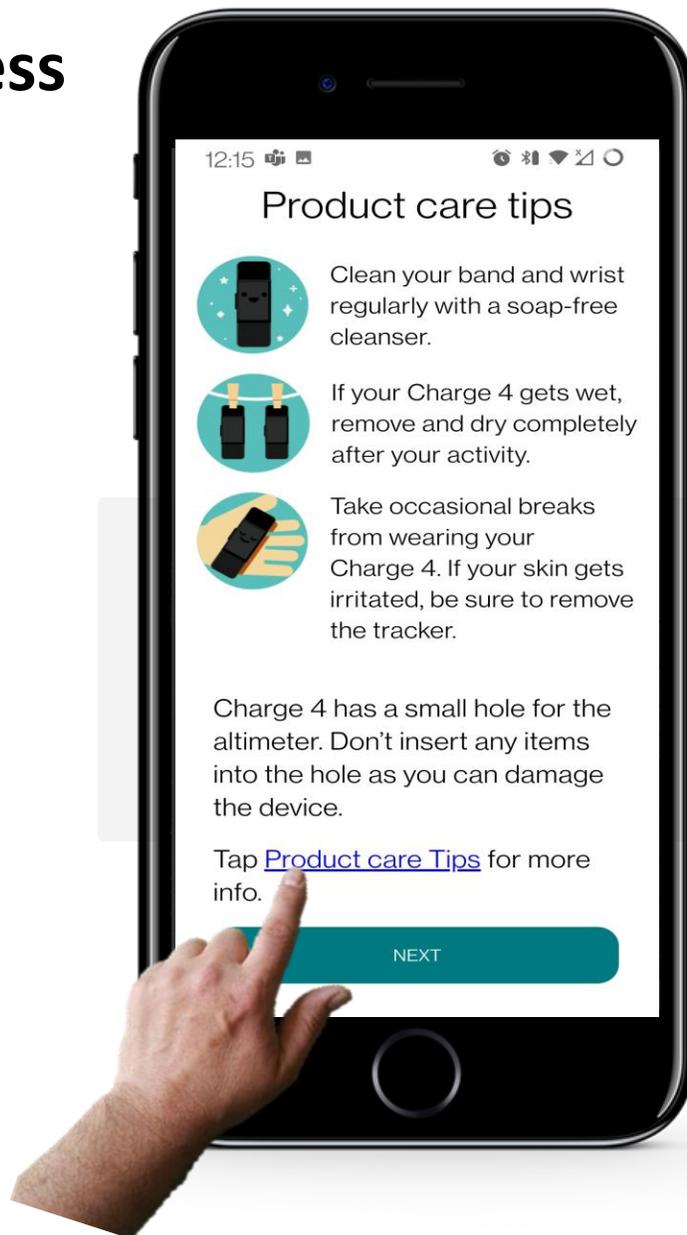
Reviewing tips and tricks

Additionally, you may click on the "Product care Tips" link for even more tips, tricks and advice on how to manage and properly take care of your smartwatch.

Process

19

20

21

Two-Factor Authentication

Two-Factor Authentication (2FA) is an extra layer of security used to ensure that people trying to access an online account are who they say they are. It is highly advisable to utilize this to block unauthorized individuals from accessing your account.

You can learn more about this in module **SMART 04 Personal mobile security**.

Tap on the green "Let's do it" button to proceed.

12:16

Do you want to enable Two Factor Authentication?

Two-Factor Authentication gives you an extra layer of protection. Add your phone number to your account and we will send you a confirmation code via SMS.

Let's do it

Skip for now

Process

19

20

21
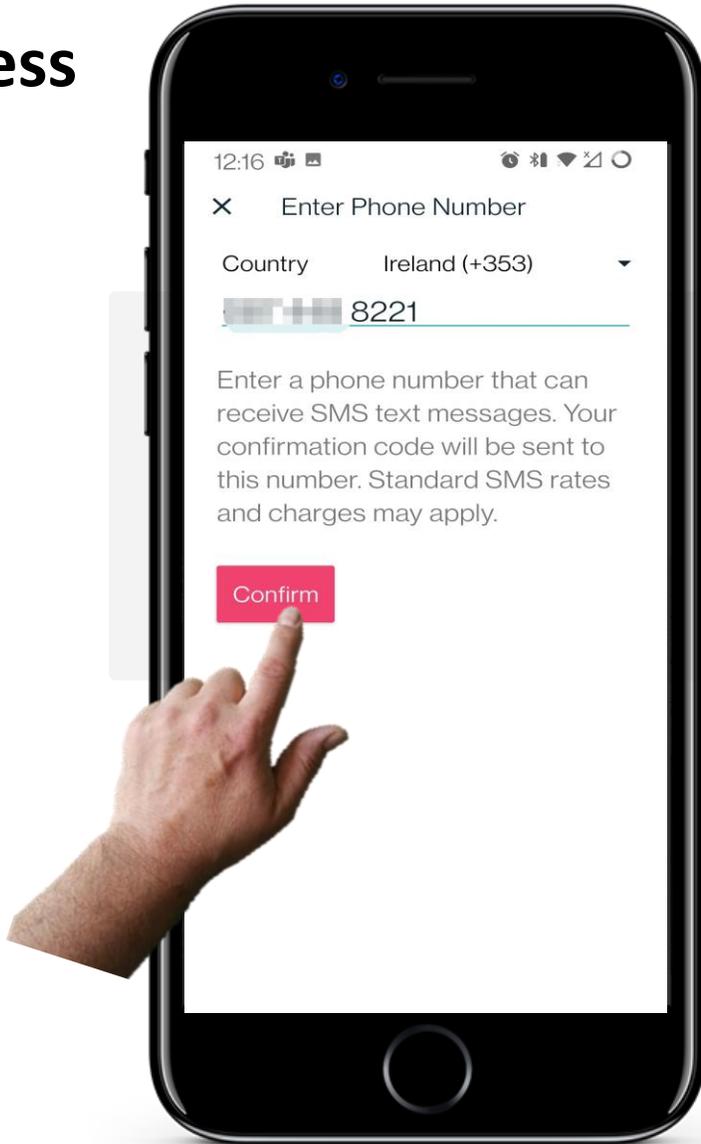
Setting up Two-Factor Authentication

Provide your country's prefix code, as well as your phone number.

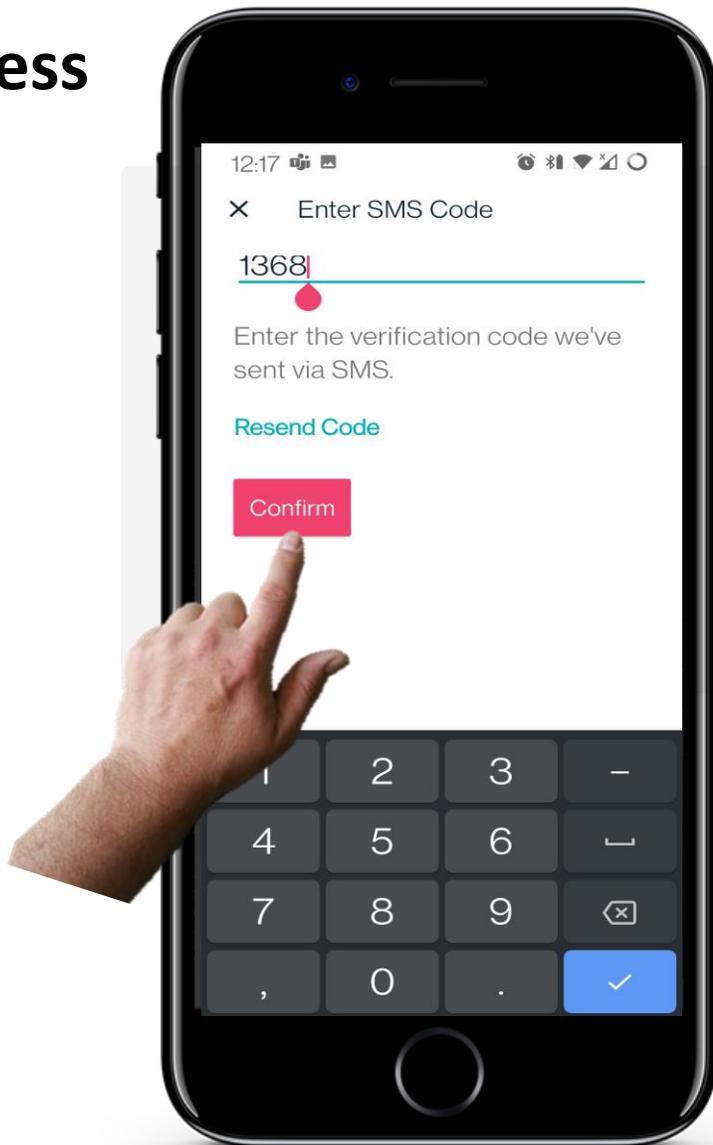Tap on the red "Confirm" button to send a secret confirmation code to activate 2FA.

Process

19

20

21
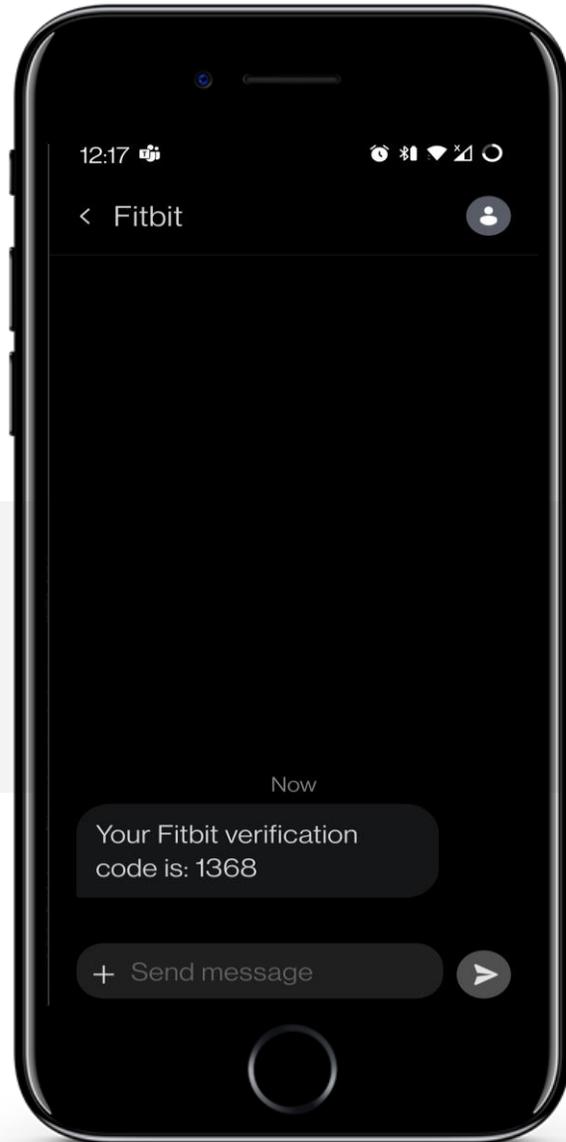
Setting up Two-Factor Authentication

Shortly after tapping on the "Confirm" button, you will receive a text message (SMS) with your secret verification code.
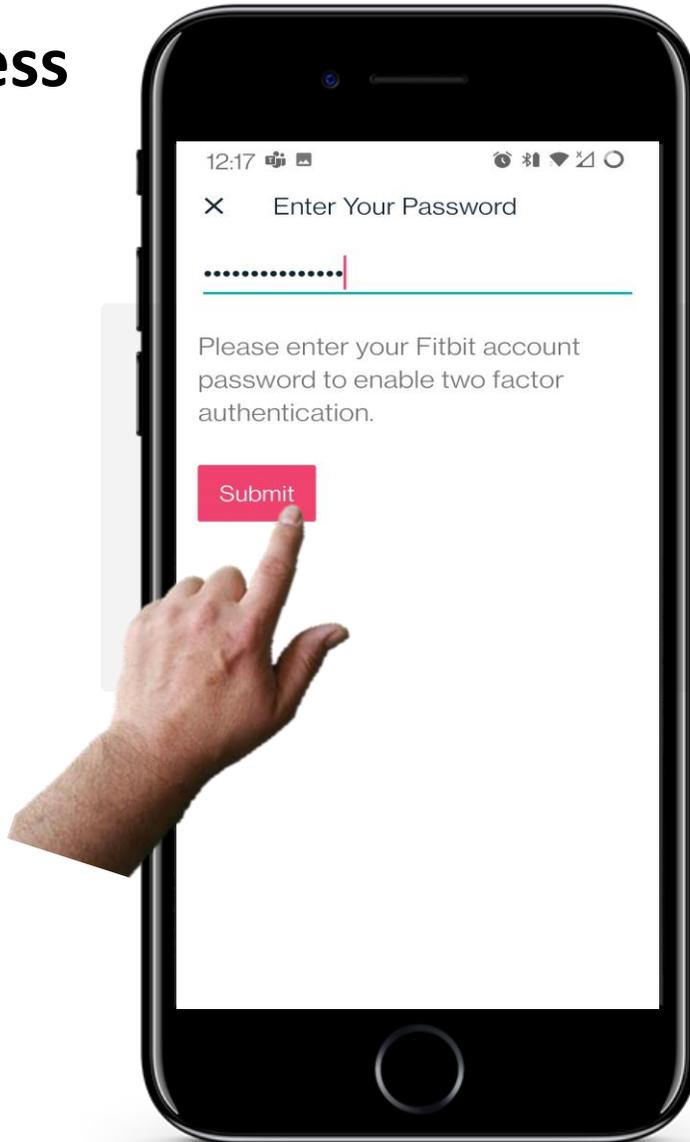
Fitbit

Now

Your Fitbit verification code is: 1368

Send message

Process

22

23

24

Setting up Two-Factor Authentication

Return to the application and put in the secret verification code you received via text (SMS).

Tap on the red "Confirm" button once you've inputted the code.

If you did not receive the code at all, you may tap on "Resend Code" to get a new code sent to you via text (SMS).

12:17

✕   Enter SMS Code

1368

Enter the verification code we've sent via SMS.

Resend Code

Confirm

1   2   3   –

4   5   6   ⎵

7   8   9   ⌫

,   0   .   ✓

Process

22

23

24

Setting up Two-Factor Authentication

Enter in the password you created at the beginning of the setup process to complete the 2FA setup and enable it.

Once entered, tap on the red "Submit" button.

Process

22

23

24
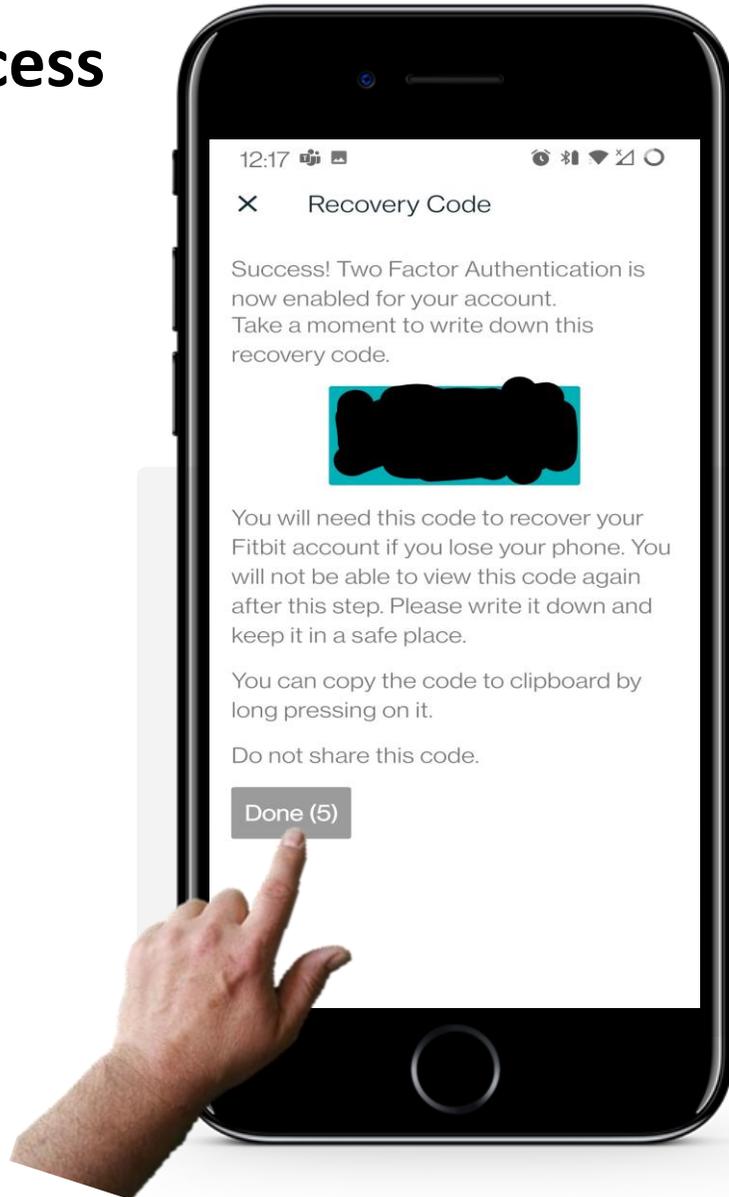
Setting up Two-Factor Authentication

Congratulations! 2FA has now been enabled.

You will be given a recovery code for you to remember. Write it down and keep it safe, as this code will be used to access your account in the event of you losing your phone.

Do not share this code with anyone. Once you have written the recovery code down somewhere, tap on the "Done" button.

Your Fitbit Charge is now connected!

——

Congratulations, you have connected your smartwatch to your mobile device.

With the Fitbit application and a smartwatch, you can manage several things such as the number of steps you've taken, how many calories you've burned, how many kilometres you've travelled on foot, your heart rate and much more.
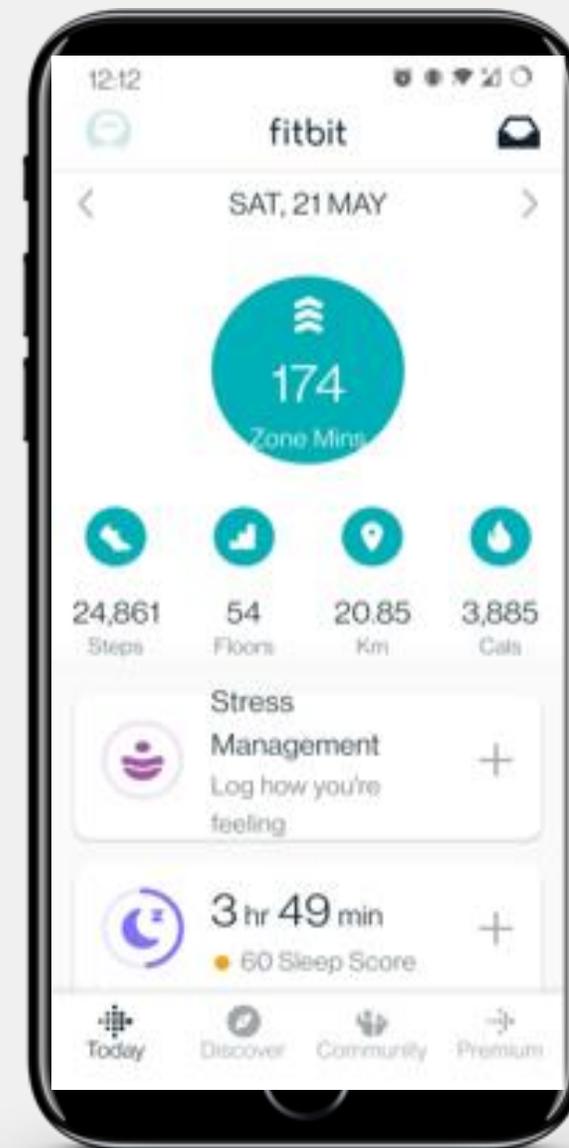
Did you know?

The apps that you use with a smartwatch store your data in the cloud.

The information recorded by a smartwatch is very often personal health information and is covered by the EU General Data Protection Regulation (GDPR).

Please see the module **SMART 04 Personal mobile security** for more details.
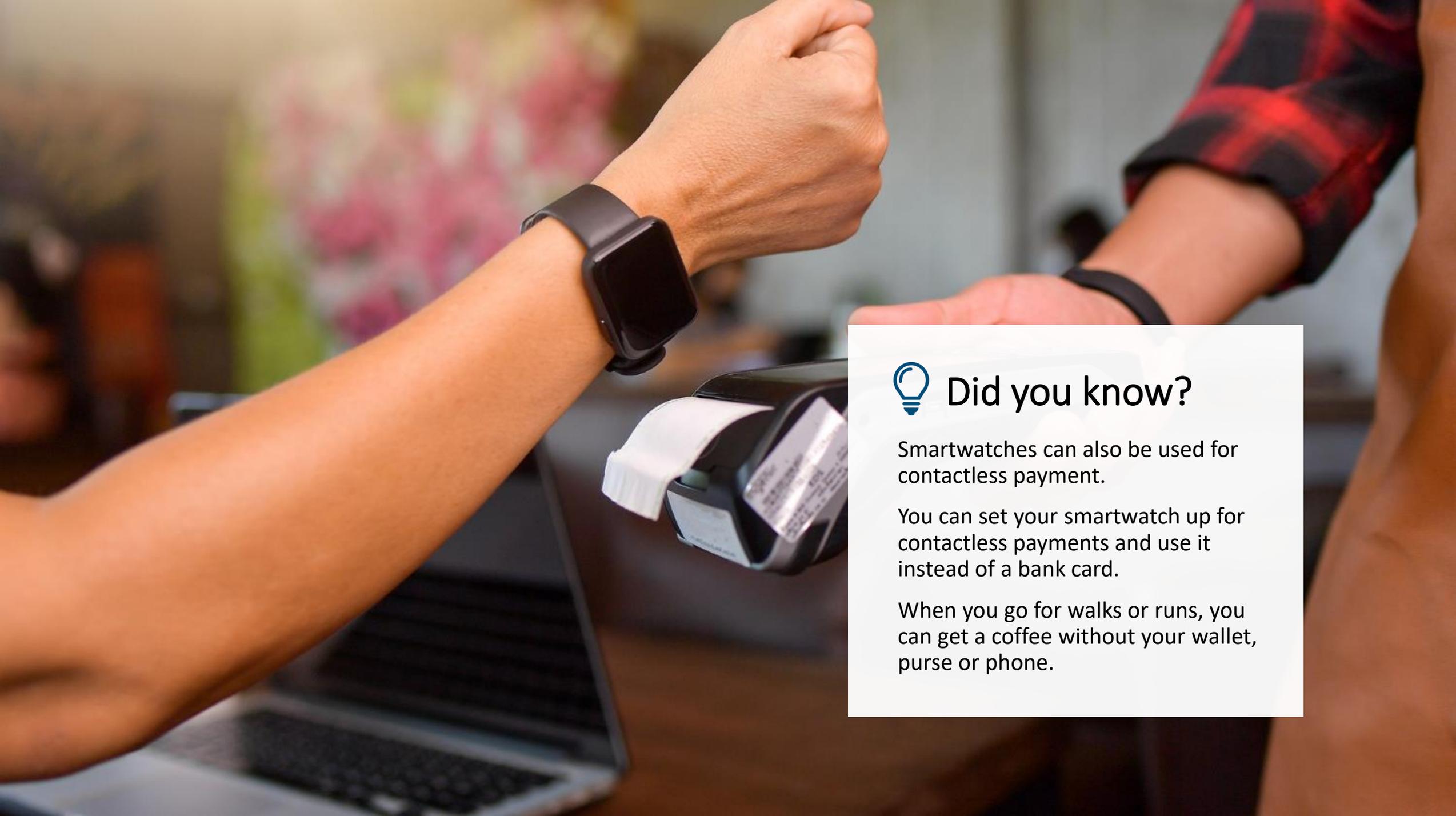
💡 Did you know?

Smartwatches can also be used for contactless payment.

You can set your smartwatch up for contactless payments and use it instead of a bank card.

When you go for walks or runs, you can get a coffee without your wallet, purse or phone.

Do the task!

___

Teresa went ahead and bought a Fitbit® smartwatch for herself. Can you help her to set it up?

- Meet and get to know Teresa. You can find information about Teresa here.

- Based on your notes, what are the steps for Teresa set up the Fitbit® through the connection to her smartphone?

☑ Quiz

Click the **Quiz** button to edit this object

SMART | **MODULE 6** | **CHAPTER 3** Setting up a smartwatch

Once you use a smart watch Fitbit for wellness monitoring, you must use it every day.

○ True

○ False

Chapter completed!

Congratulations! You have successfully completed this chapter!

Summary of acquired skills

1 The concept of smartwatch.

2 How to connect your smartwatch to your phone.

What is next?

Now you can either repeat this chapter or follow our study recommendation by clicking on one of the buttons below:

Restart   Next

Using a smartwatch

So, your smartwatch is ready to be used. What can you do with it? In this chapter, you will learn about using three of the main features of a Fitbit® smartwatch, step counting, heart rate and sleep monitoring.

What will you learn in this chapter

1 | How to track your steps.

2 | How to monitor your heart rate.

3 | How to monitor your sleep.

Smartwatches can measure your activity and exercise

—

The World Health Organisation recommends people should walk 10,000 steps a day for a healthy life. Smartwatches like the Fitbit® can help you reach this goal by tracking how many steps you take as you move throughout the day.

You can check how many steps you have taken on your Fitbit® watch or your Fitbit® app on your mobile phone.

In this chapter, you will learn how to track steps on the Fitbit® app on your phone.

Process

1

2

3

Opening the Fitbit® app

To see how many steps you've taken, first, open the Fitbit® app on your phone. The Fitbit® app icon is a teal colour with white spots.

Tap the Fitbit® icon to enter the app.

Process

1

2

3
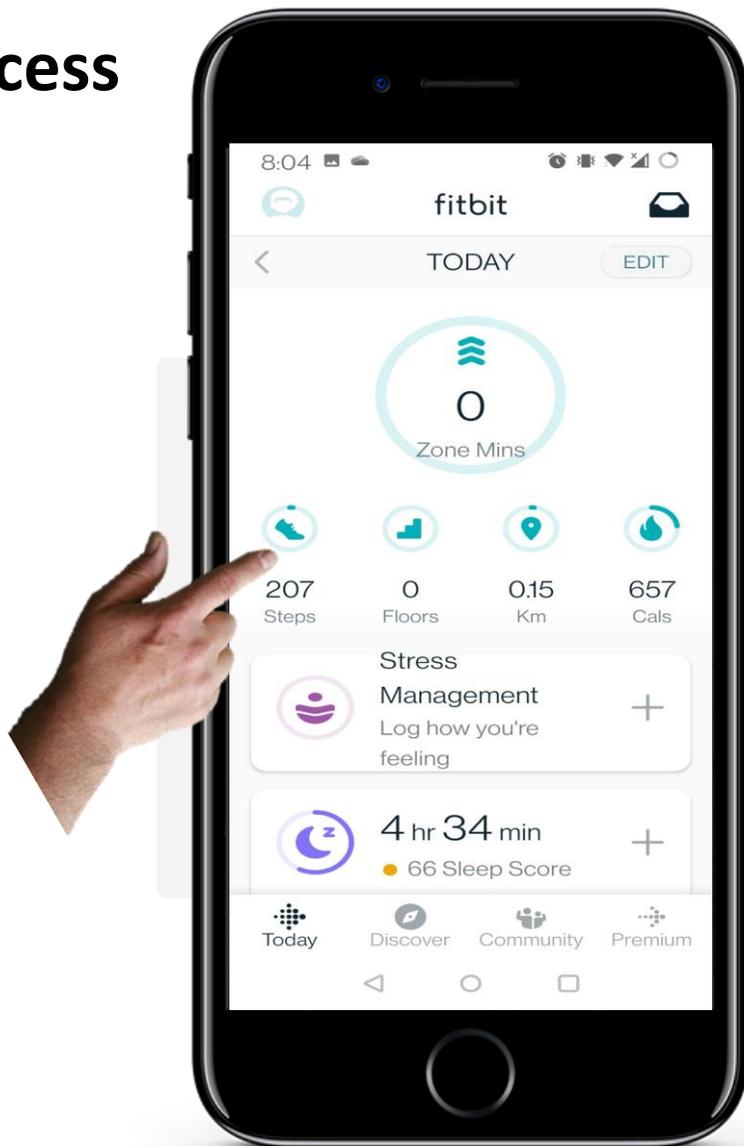
Viewing your step count

On the homepage of the app, under the "shoe" icon (Steps), you can see how many steps you have taken that day. Tapping on the icon will give you more information.

Note: This can also be done with the other icons on the home screen for flights of stairs, distance (Km) and calories burned (Cals).

Process

1

2

3

More details

After tapping on the "show" icon, you can see more information about how many steps you take each day.

Tapping on a day will show you a breakdown of when you did the most walking that day.

To go back, tap on the small arrow in the top left corner of the screen.

Reminders to move

Your Fitbit Charge will also remind you to try to take 250 steps each hour to encourage you to be active during your day.

You can change the hours this is active or disable the feature in the app settings – check the next slides to see how it works.

Process

1

2

3
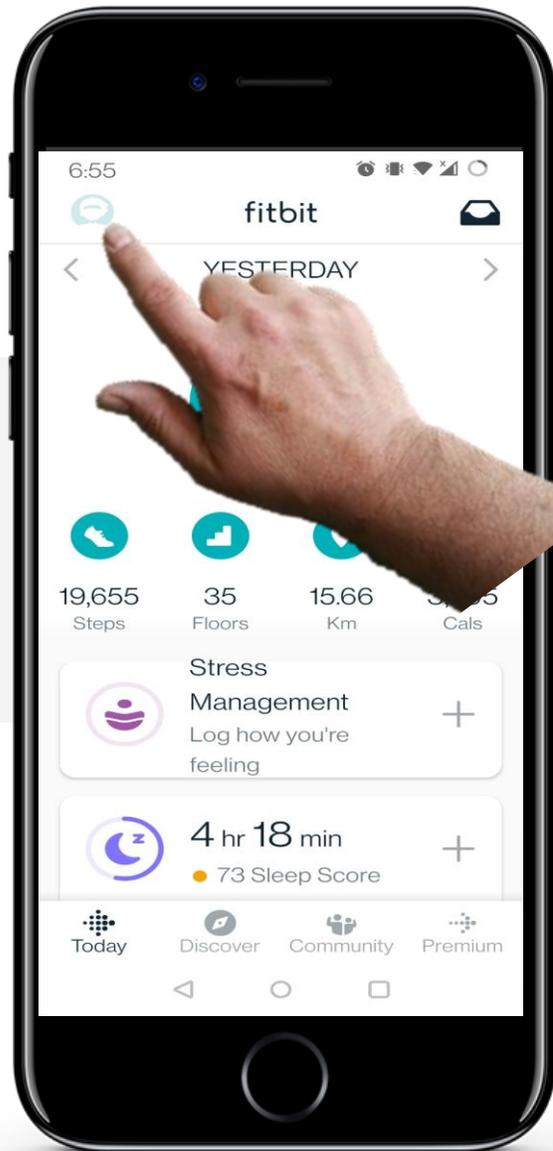
Go to Account/Setting page

To access the Account/Settings page, tap on the small "silhouette" icon of a person in the top left corner of your screen.

Process

1

2

3
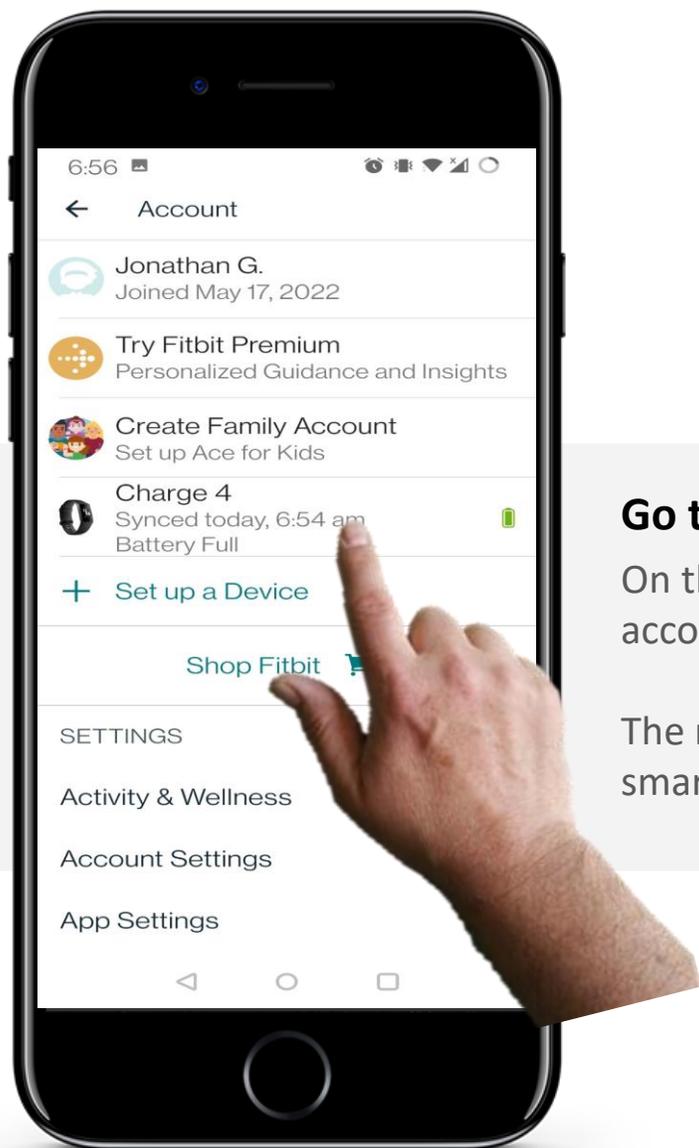
Go to watch settings

On the "Account" page, you will see your Fitbit Charge listed under your account information. Tap on the device connected to your phone.

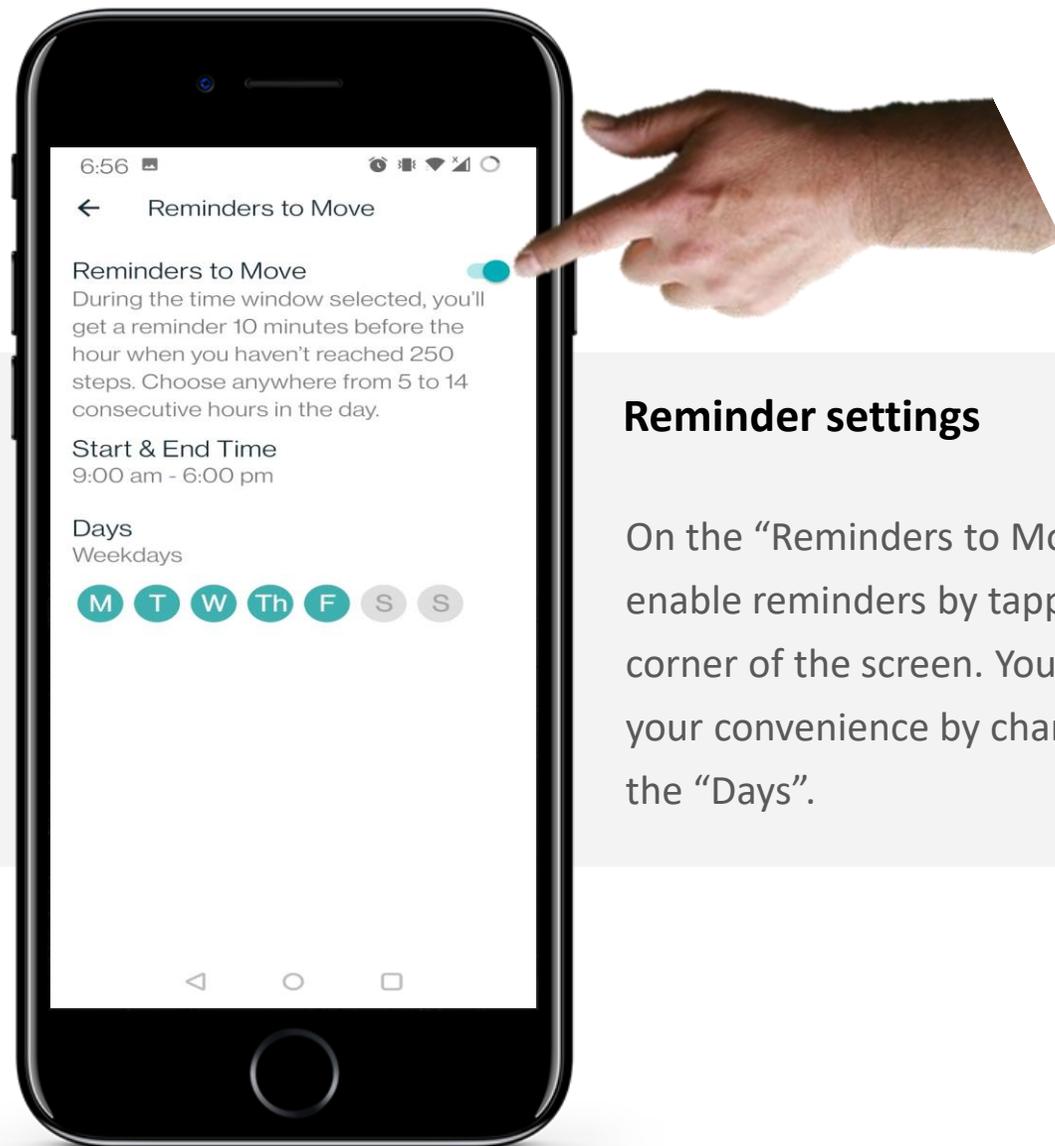The name of the device will differ depending on what model your smartwatch is.

Process

1

2

3
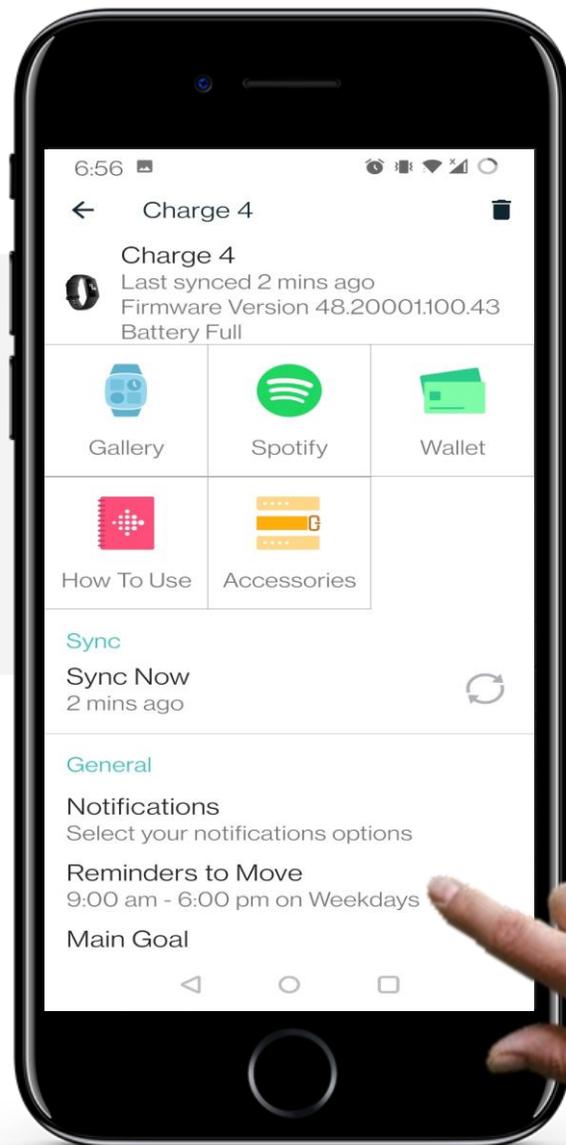
Reminders to Move

Near the bottom of the page, you will see an option labelled "Reminders to Move". Tapping on this option will allow you to change the settings for these reminders.
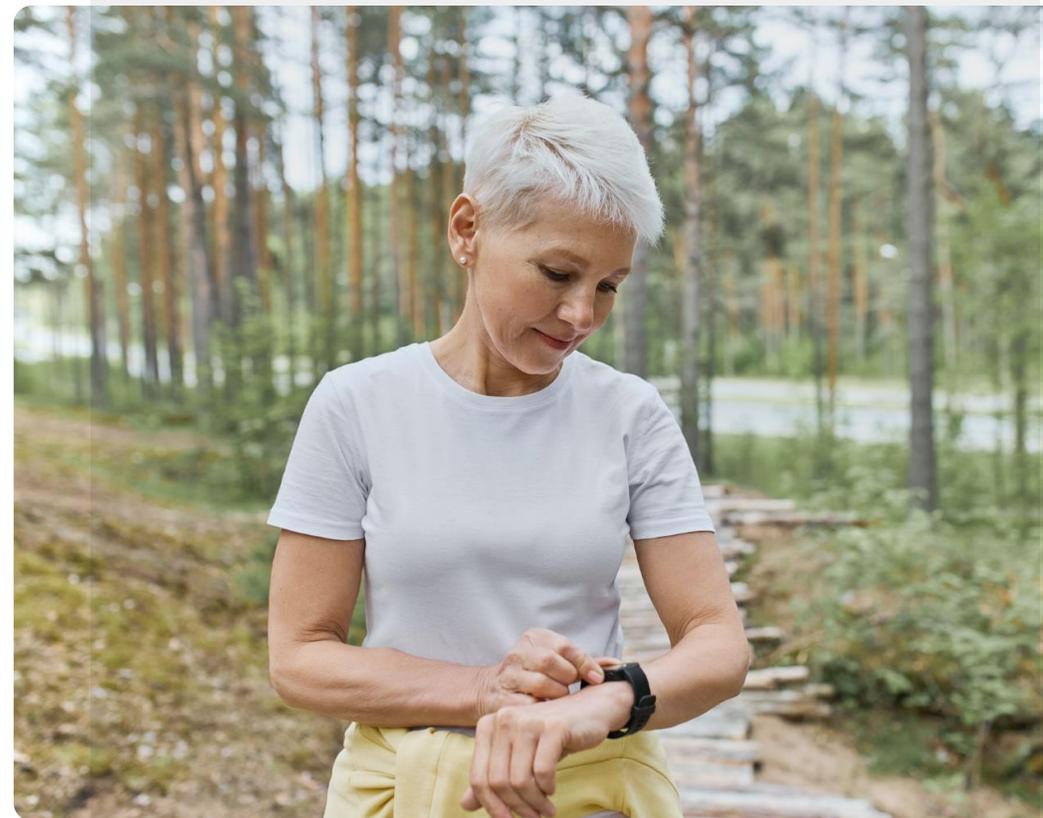
Process

4

Reminder settings

On the "Reminders to Move" page, you may choose to disable or enable reminders by tapping on the green toggle in the top right corner of the screen. You can change the reminders' schedule to your convenience by changing the "Start & End Time", as well as the "Days".

Tracking your heart rate

—

You have learnt that a healthy heart rate is between 60 to 100 beats per minute. You can use your Fitbit Charge to track your heart rate and help you keep a healthy heart.

The Fitbit app allows you to view a lot of data about your heart rate.

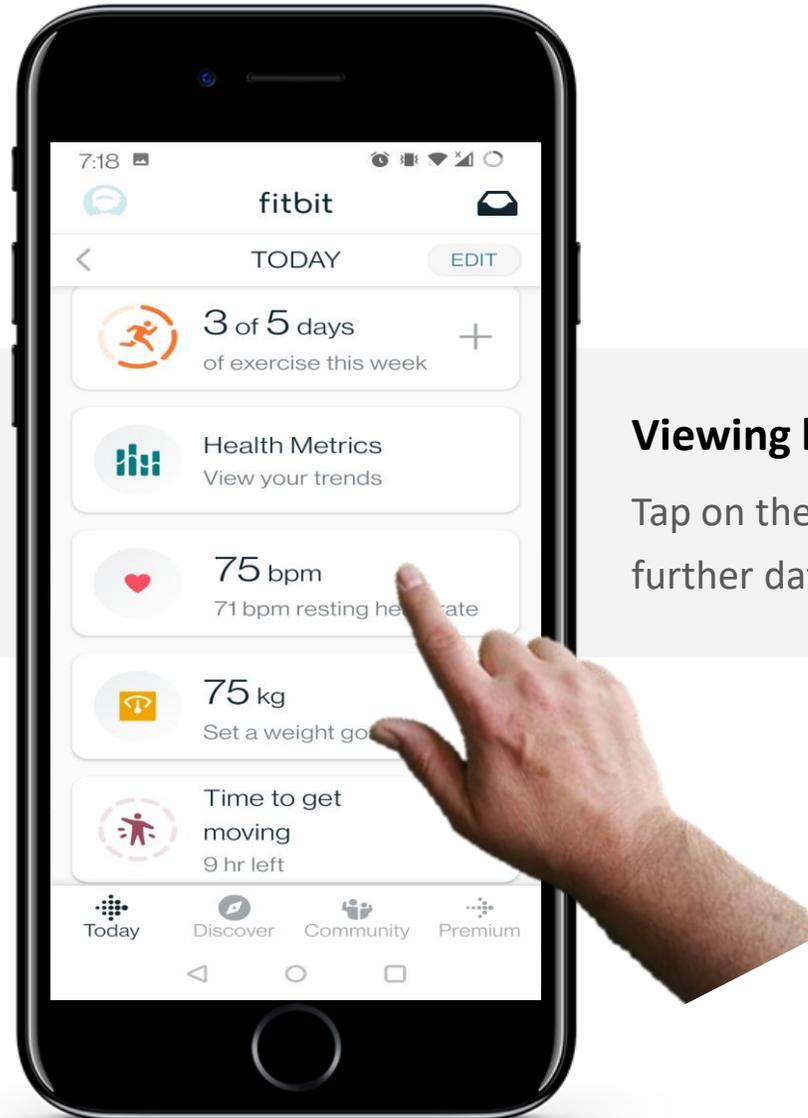# Process

1

2

3

Viewing heart rate data

On the Fitbit app home screen, scroll from bottom to top (in the direction of the blue arrow) on the screen and look for the "heart" icon displaying your heart rate (BPM).

Process
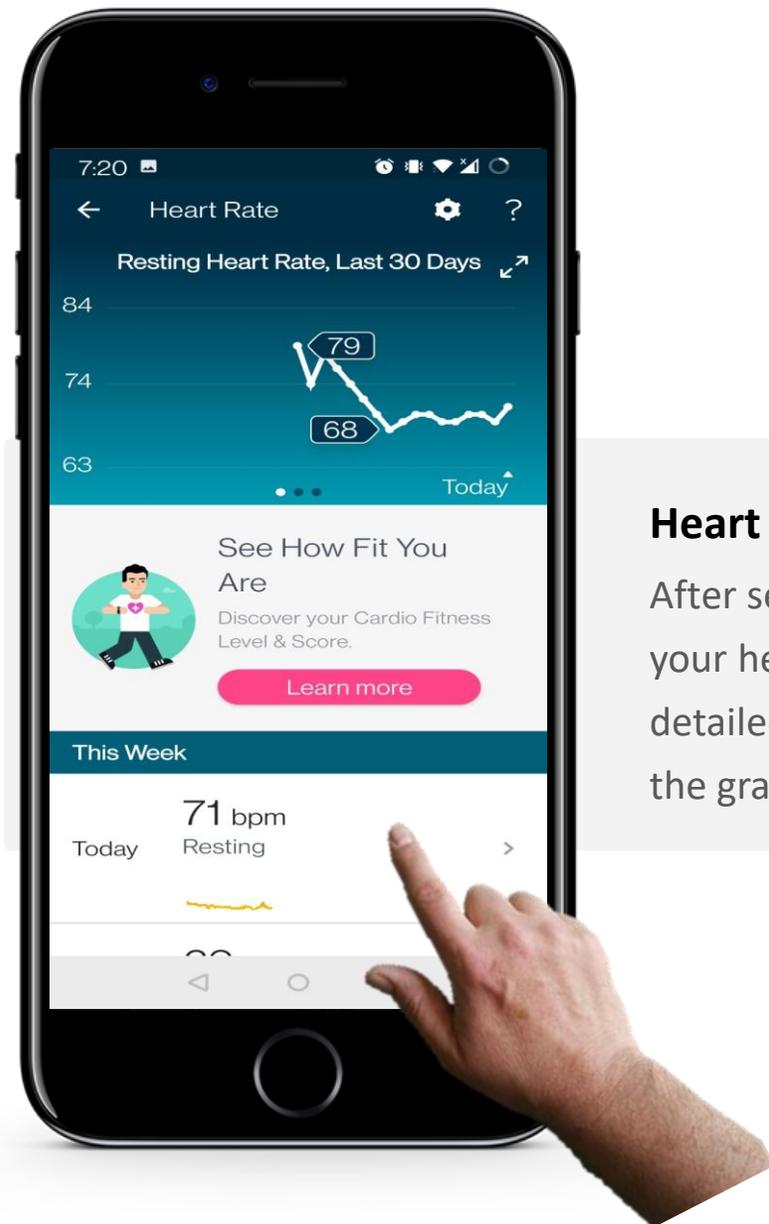
1

2

3

Viewing heart rate data

Tap on the area where your heart rate (BPM) is displayed to view further data.
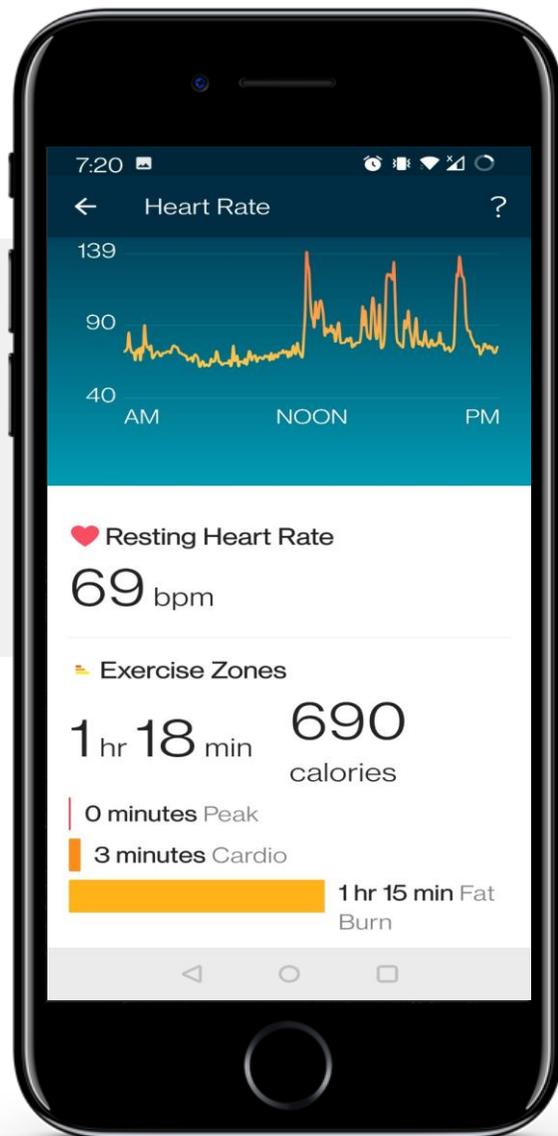
Process

1

2

3

Heart rate data page

After selecting the "Heart Rate" tab, you will now see a graph of your heart rate information over the last week. To view more detailed information for 1 day, tap on the day in the menu below the graph.

Process

4

Heart rate data for a single day

After tapping on a single day, a new page will show you a graph displaying your heart rate (BPM) over a certain period of time.

This page also displays your heart rate (BPM) during exercise.

View your heart rate on your Fitbit Charge smartwatch

As the Fitbit app allows you to view a lot of data about your heart rate on your mobile device, there is also the option to see your current heart rate directly on your smartwatch.

The next slides will explain how it works, let's go!

Process

1

2

3
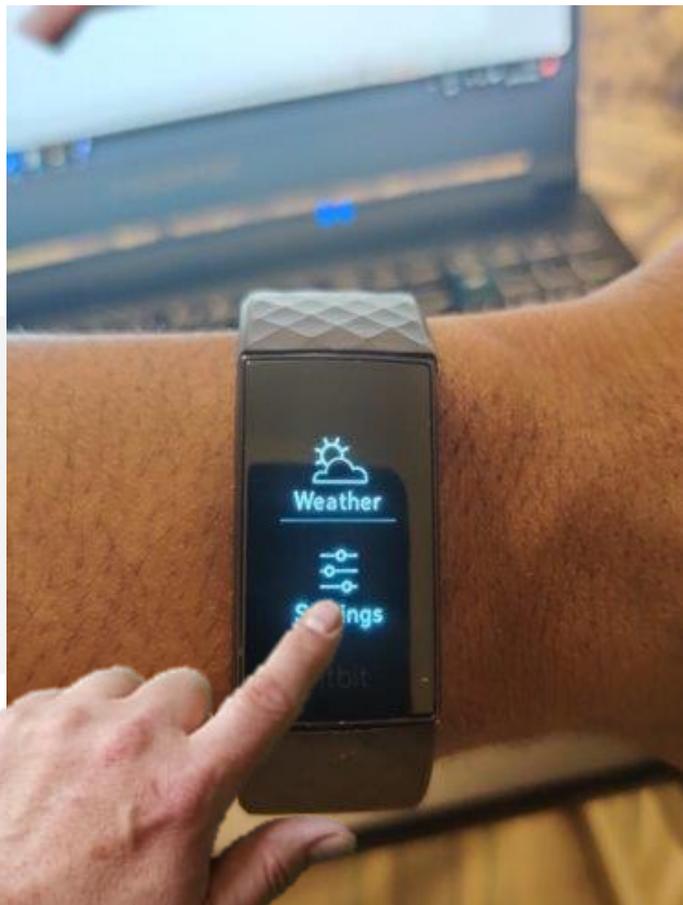

Accessing settings on your Fitbit Charge

From the home screen on your Fitbit, swipe from right to left to access the menu.

Process
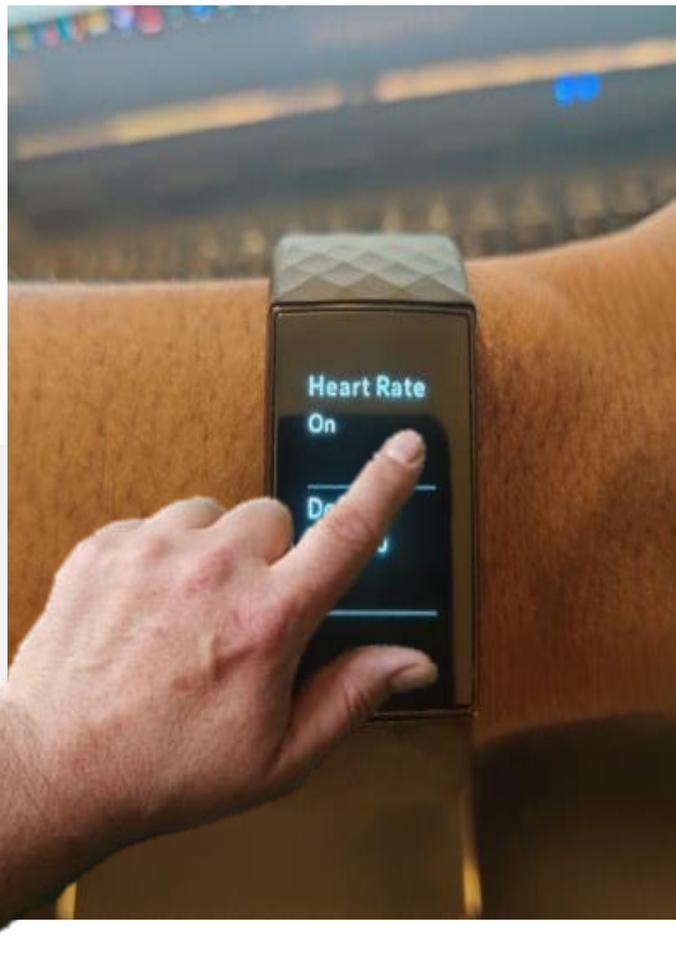
1

2

3

Accessing settings on your Fitbit Charge

In the menu, tap on the "Settings" icon. The "Settings" icon is a small white cog with the text "Settings" below it.
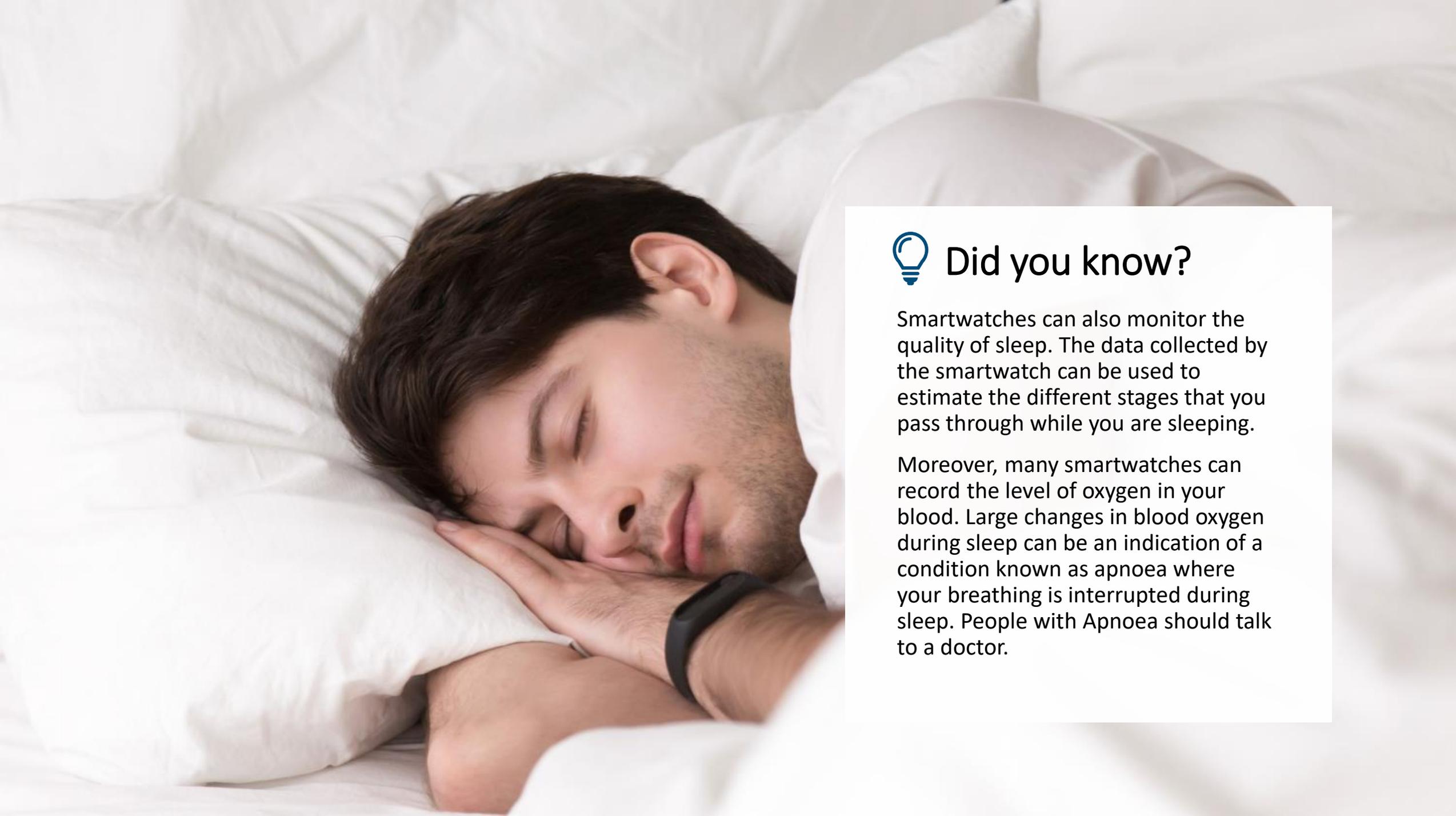
Process

1

2

3

Finding the "Heart Rate" option

On the "Settings" page, scroll your finger from bottom to top on the smartwatch to scroll through settings. Look for the text "Heart Rate". Tapping on the text will turn the heart rate monitor on or off.

Did you know?

Smartwatches can also monitor the quality of sleep. The data collected by the smartwatch can be used to estimate the different stages that you pass through while you are sleeping.

Moreover, many smartwatches can record the level of oxygen in your blood. Large changes in blood oxygen during sleep can be an indication of a condition known as apnoea where your breathing is interrupted during sleep. People with Apnoea should talk to a doctor.

How to track your sleep

Your Fitbit Charge automatically tracks your sleep patterns.

You can then review this information in the Fitbit® app on your mobile phone.

Process

1

2

3

Accessing your sleep data

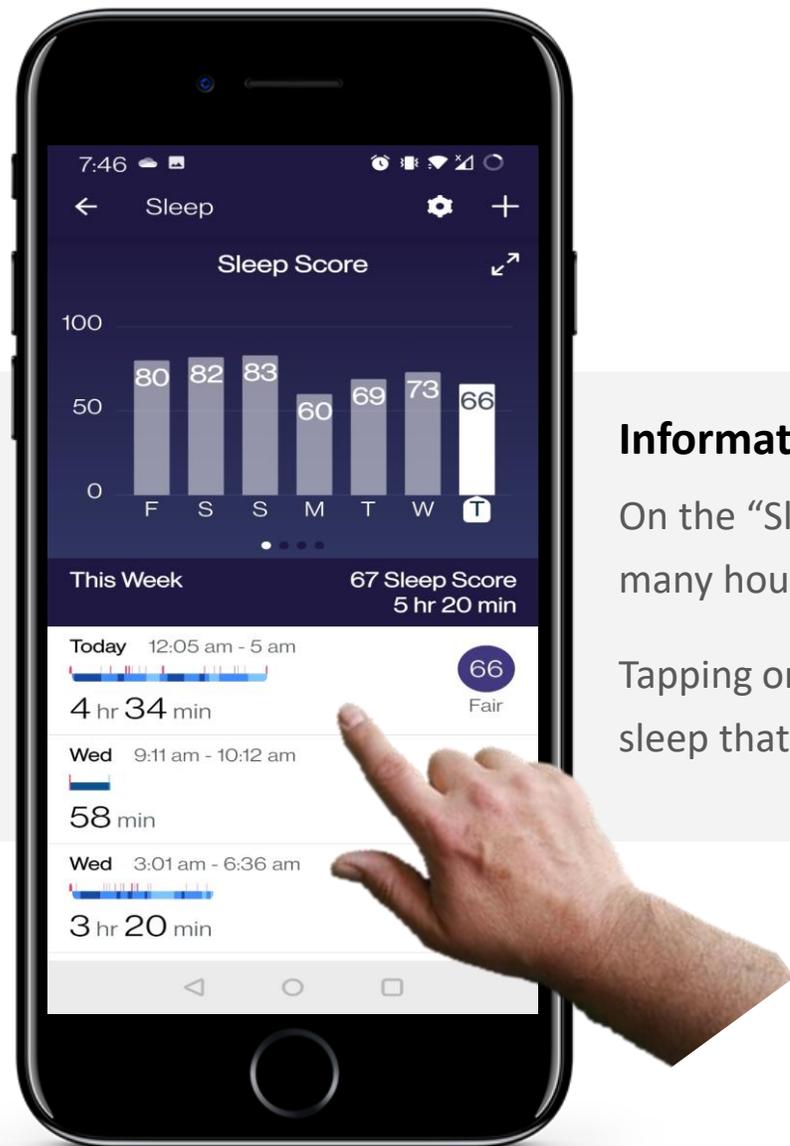Once you open the Fitbit app, tap on the "half moon" icon that also displays your "Sleep Score". This will take you to your sleep data.

Process

1

2

3

Information on hours slept

On the "Sleep" data page, you can see all the information about how many hours you slept in the last week.

Tapping on a specific day will give you more information about your sleep that night.

Process

1

2

3

Sleep data for one night

On a selected day you can see more detailed information about how you slept that night, including the period that you spent asleep in total – as well as the amount of time spent in "REM" (Rapid Eye Movement) sleep, "Light" sleep and "Deep" sleep.

Do the task!

Teresa is excited about using her new smartwatch, can you help her to use it?

- Meet and get to know Teresa. [You can find information about Teresa here](#).

- Teresa would like to learn about using the main features of her Fitbit Charge smartwatch. She is interested in how she can use it to keep informed about her progress in relation to wellness goals, in order to stay healthy.

- What would you say to Teresa about the features of the Fitbit® smartwatch that support wellness management?

✅ Quiz

Click the **Quiz** button to edit this object

SMART | MODULE 6 | CHAPTER 4 | Using a smart watch

What type of technology is used to link a Fitbit to your mobile phone?

○ NFC

○ Infrared

○ Wi-Fi

○ Bluetooth

Chapter completed!

Congratulations! You have successfully completed this chapter!

Summary of acquired skills

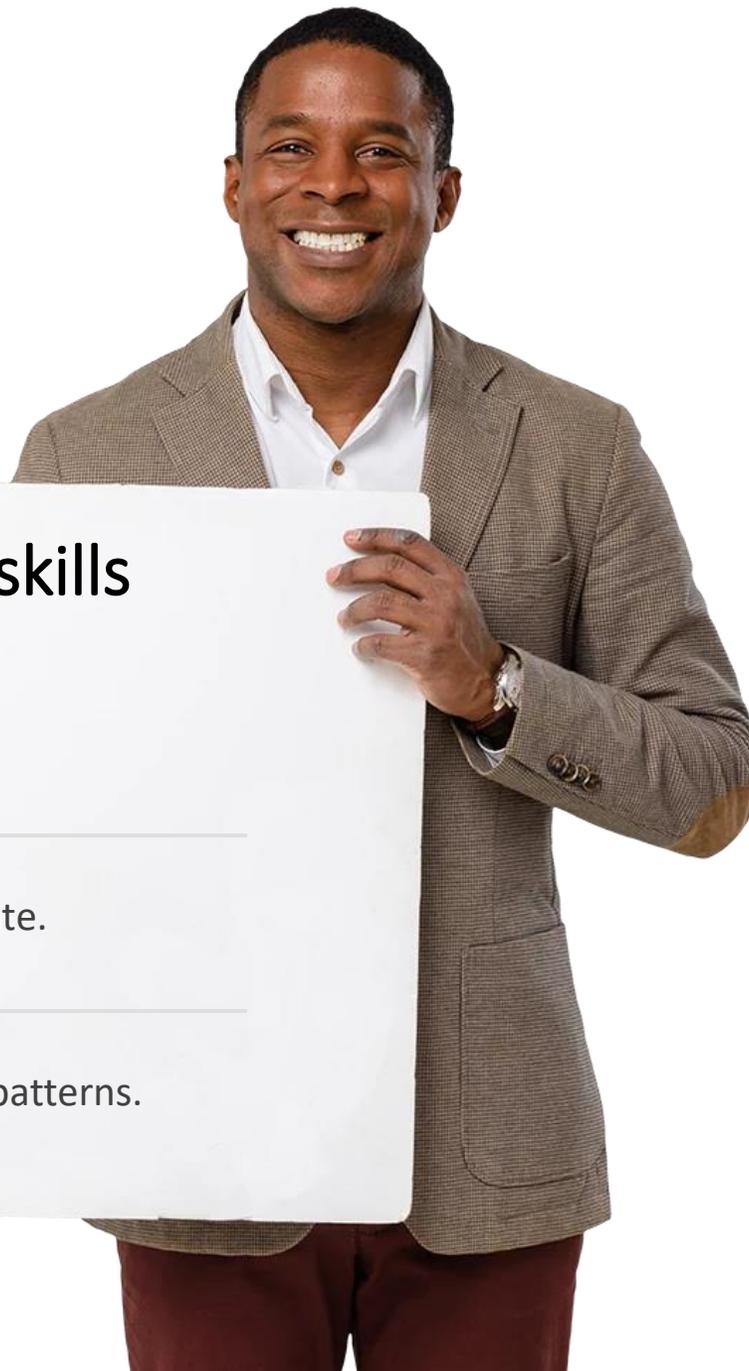**1** How to track your steps.

2 How to track your heart rate.

3 How to look at your view patterns.

What is next?

Now you can either repeat this chapter or follow our study recommendation by clicking on one of the buttons below:

Restart　　**Next**

Module completed!

Congratulations! You have successfully completed this module!
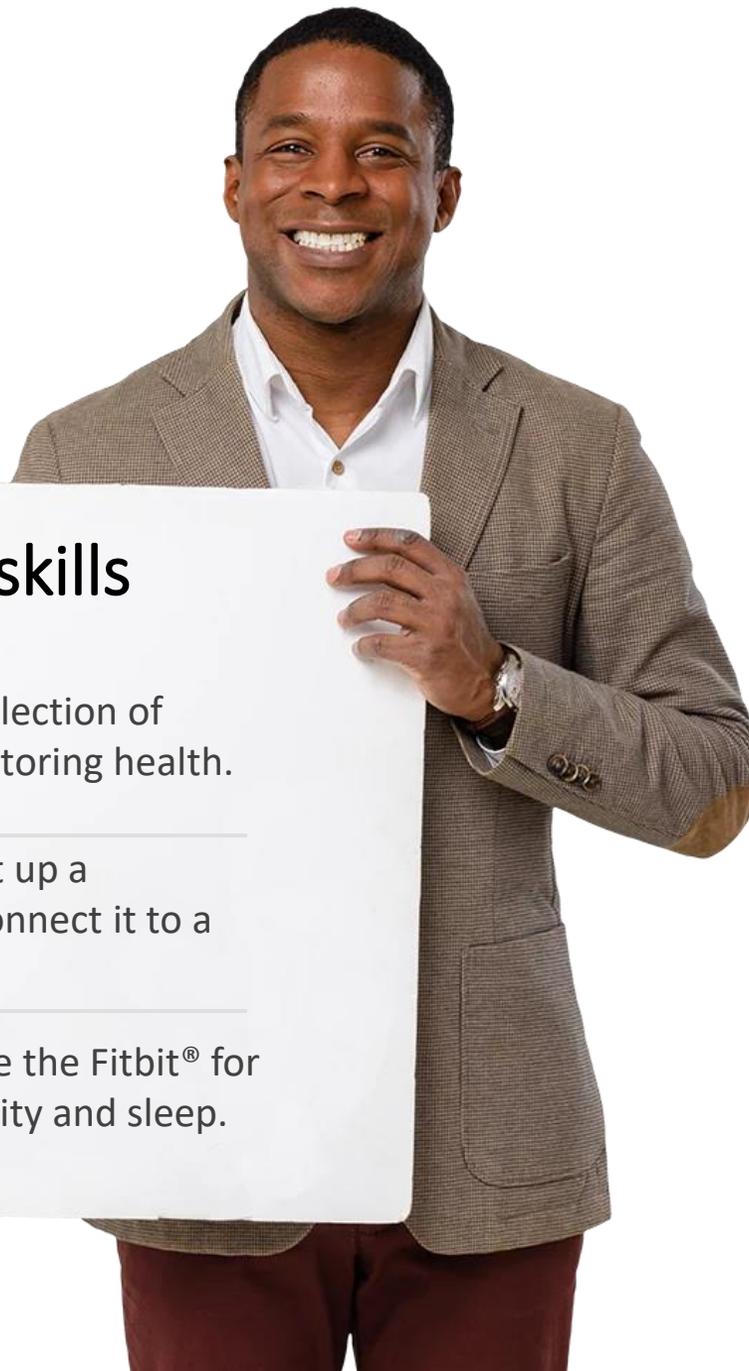
Summary of acquired skills

1 You have learnt about a selection of wearable devices for monitoring health.

2 You have learnt how to set up a Fitbit® smart watch and connect it to a mobile device.

3 You have learnt how to use the Fitbit® for measuring heart rate activity and sleep.

What is next?

—

Now you can either repeat this module or follow our study recommendation by clicking on one of the buttons below:

Restart   Next