



# POLAR VANTAGE V



**USER MANUAL**

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# POLAR VANTAGE V USER MANUAL

This user manual helps you get started with your new watch. To see video tutorials and FAQs, go to [support.polar.com/en/vantage-v](https://support.polar.com/en/vantage-v).

## INTRODUCTION


Congratulations on your new Polar Vantage V!

The Polar Vantage V is a premium GPS multisport watch for multisport and triathlon training with Polar Precision Prime sensor™ fusion technology for accurate wrist-based heart rate monitoring even in the most demanding conditions. The watch is packed with tools that help you break your records and reach your goals: Reach the ideal amount of training to perform at your very best with [Training Load Pro](#) which gives you a holistic view on how your training sessions strain the different systems of your body and how it affects your performance. The unique recovery solution [Recovery Pro](#) helps you prevent over-training and injuries. It measures how recovered your body is and offers you recovery feedback and guidance.

Polar Vantage V is the first multisport watch to measure [running power from the wrist](#). Running power is a great complement to heart rate monitoring – it helps you monitor the external load of your running. Monitor your running progress with the advanced running features, such as [Running Index](#) and [Running Programs](#). Choose your favorite sports from 130+ options and customize settings for each sport.

The [Continuous heart rate](#) feature measures your heart rate around the clock. Together with [24/7 Activity tracking](#) it gives you a complete overview of all your daily activity. The advanced [Polar Sleep Plus](#) sleep analysis follows your sleeping patterns and gives you feedback on your sleep.

With the [changeable wristbands](#), you can personalize your watch to match every situation and style.

 *We are continuously developing our products for better user experience. To keep your watch up to date and get the best performance, always make sure to [update the firmware](#) whenever a new version is available. The firmware updates enhance the functionality of your watch through new features and improvements.*

## TAKE FULL ADVANTAGE OF YOUR VANTAGE V

Get connected to the Polar ecosystem and get the most out of your watch.

## **POLAR FLOW APP**

Get the [Polar Flow app](#) from the App Store® or Google Play™. Sync your watch with the Flow app after training, and get an instant overview and feedback on your training results and performance and let all your friends know about your achievements. In the Flow app you can also check how you've slept and how active you've been during the day.

## **POLAR FLOW WEB SERVICE**

Sync your training data to the [Polar Flow web service](#) with the FlowSync software on your computer or via Flow app. In the web service you can plan your training, track your achievements, get guidance and see detailed analysis of your training results, activity and sleep. Let all your friends know about your achievements, find fellow exercisers and get motivation from your social training communities.

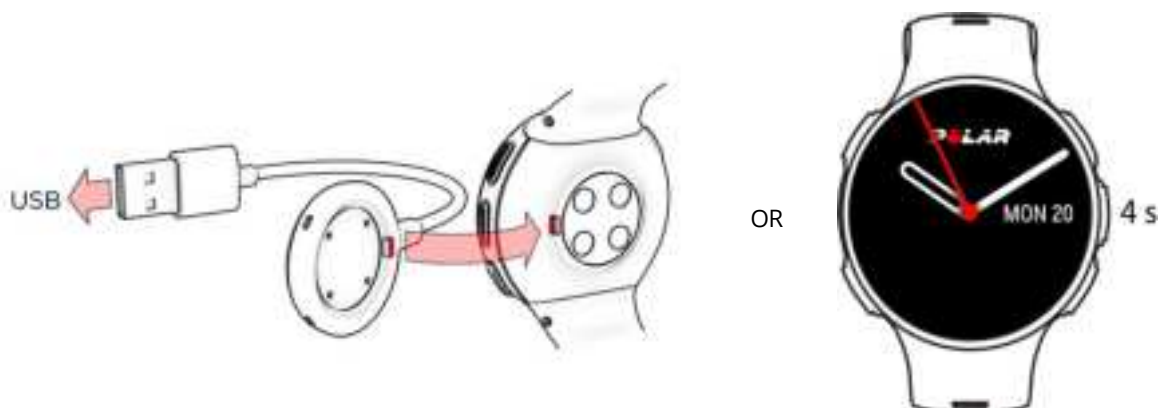
Find all this at [flow.polar.com](https://flow.polar.com)

# GET STARTED

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## SETTING UP YOUR WATCH


**To wake up and charge your watch**, plug it into a powered USB port or a USB charger with the custom cable that came in the box. The cable magnetically snaps into place, just make sure to align the ledge on the cable with the slot on your watch (marked with red). Please note that it may take a while for the charging animation to appear on the display. We recommend that you charge the battery before you start using your watch. See [Battery](#) for detailed information on charging the battery. Alternatively, you can wake up your watch by pressing and holding OK for 4 seconds.



**To set up your watch**, choose your language and preferred setup method. The watch gives you three options for setup: Browse to the option most convenient for you with UP/DOWN and confirm your selection with OK.


**A. On your phone:** Mobile setup is convenient if you don't have access to a computer with a USB port, but it might take longer. This method requires an Internet connection.

**B. On your computer:** Wired computer setup is quicker and you can charge your watch at the same time, but you need a computer available. This method requires an internet connection.

 *The A and B options are recommended. You can fill in all the physical details required for accurate training data at once. You can also choose language and get the latest firmware for your watch.*

**C. On your watch:** If you don't have a compatible mobile device and can't get to a computer with an internet connection right away, you can start from the watch. **Please note that when you do the setup from the watch, your watch is not yet connected with Polar Flow. Firmware updates for your watch are available only through Polar Flow.** To make sure you get to enjoy your watch and the unique Polar features at their best, it's important that you do the setup later in the Polar Flow web service or with the Polar Flow mobile app by following the steps in option A or B.

## **OPTION A: SET UP WITH A MOBILE DEVICE AND POLAR FLOW APP**

 *Please note that you have to do the pairing in the Flow app and **NOT in your mobile device's Bluetooth settings.***

1. Make sure your mobile device is connected to the internet and turn on Bluetooth.
2. Download the Polar Flow app from the App Store or Google Play on your mobile device.
3. Open the Flow app on your mobile device.
4. The Flow app recognizes your watch nearby and prompts you to start pairing it. Tap the Start button.
5. When the **Bluetooth Pairing Request** confirmation message appears on your mobile device, check that the code shown on your mobile device matches the code shown on your watch.
6. Accept the Bluetooth pairing request on your mobile device.
7. Confirm the pin code on your watch by pressing OK.
8. **Pairing done** is displayed once the pairing is completed.
9. Sign in with your Polar account or create a new one. We'll walk you through the sign-up and setup within the app.

When you're done with the settings, tap Save and sync and your settings are synced to your watch.



**i** If you're prompted to update the firmware, please plug your watch into a power source to ensure flawless update operation, and then accept the update.

## OPTION B: SET UP WITH YOUR COMPUTER

1. Go to [flow.polar.com/start](https://flow.polar.com/start) and download and then install the Polar FlowSync data transfer software to your computer.
2. Sign in with your Polar account or create a new one. Plug your watch into your computer's USB port with the custom cable that came in the box. We'll walk you through the sign-up and setup within the Polar Flow web service.

## OPTION C: SET UP FROM THE WATCH

Adjust the values with UP/DOWN and confirm each selection with OK. If you want to return and change a setting at any point, press BACK until you reach the setting you want to change.

**i** When you do the setup from the watch, your watch is not yet connected with the Polar Flow web service. Firmware updates for your watch are available only through Polar Flow. To make sure you get to enjoy your watch and the unique Polar Smart Coaching features at their best, it's important that you do the setup later in the Polar Flow web service or with the Flow mobile app by following the steps in option A or B.

## BUTTON FUNCTIONS AND GESTURES

You watch has five buttons that have different functionalities depending on the situation of use. See the tables below to find out what functionalities the buttons have in different modes.



## TIME VIEW AND MENU

LIGHT	BACK	OK	UP/DOWN
Illuminate the display	Enter the menu	Confirm the selection shown on the display	Change the watch face in time view
In time view, press to view the battery status symbol	Return to the previous level	Press and hold to enter pre-training mode	Move through selection lists
Press and hold to lock buttons and touch display	Leave settings unchanged	Press to view more details about the information shown on the watch face	Adjust a selected value
	Cancel selections		
	Press and hold to return to time view from menu		
	In time view, press and hold to start pairing and syncing		

## PRE-TRAINING MODE

LIGHT	BACK	OK	UP/DOWN
Illuminate the display	Return to time view	Start a training session	Move through sports list
Press to enter quick menu			

## DURING TRAINING

LIGHT	BACK	OK	UP/DOWN
Illuminate the display	Pause training by pressing once	Mark a lap	Change training view
	To stop the session, press and hold when paused	Continue training recording when paused	

## COLOR TOUCH DISPLAY

The always-on color touch display lets you easily swipe between watch faces, through lists and menus, as well as choose items by tapping the display.

- Swipe up or down to scroll.
- In time view, swipe left or right to switch between the watch faces. Each watch face shows you an overview of different information.
- Tap the display to see more detailed information.

Note that the touch display is disabled during training sessions. To ensure proper function of the touch display wipe any dirt, sweat or water off the display with a cloth. The touch display won't respond properly when trying to use it wearing gloves.

## VIEW NOTIFICATIONS

Swipe up from the bottom of the display to view notifications. The dot at the bottom of the display indicates if you have any new notifications.

## TAP FEATURE

Tap the display firmly with two fingers to take a lap during a training session. Note that the tap feature is not a touch display feature.

## BACKLIGHT ACTIVATION GESTURE


The backlight is automatically switched on when you turn your wrist to look at the watch.

## WATCH FACES AND MENU

### WATCH FACES

The Vantage V watch faces tell you a lot more than just the time. You'll get the most timely and relevant information right on the watch face, including your activity status, Cardio Load status, your heart rate and latest training sessions. You can swipe left or right, or scroll through the watch faces with the UP and DOWN buttons and open more details by pressing the display or with the OK button.

 *Note that the watch faces and their contents cannot be edited.*

 *You can choose between analogue and digital display in [Watch settings](#).*

## Time



Basic watch face with time and date.

## Activity



The circle around the watch face and the percentage below the time and date show your progress towards your daily activity goal. The circle fills with a light blue color as you are active.

In addition, when opening the details, you can see the following details of your day's accumulated activity:



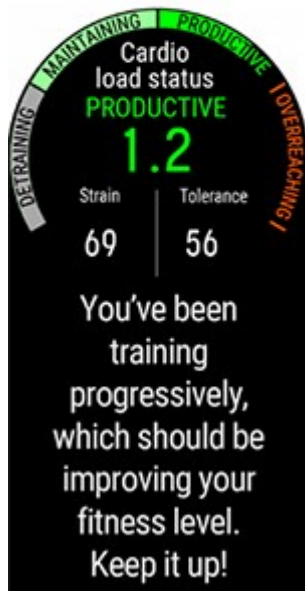
- Steps you've taken so far. The amount and type of body movements are registered and turned into an estimation of steps.
- Active time tells you the cumulative time of body movements that benefit your health.
- Calories you've burned through training, activity and BMR (Basal metabolic rate: the minimum metabolic activity required to maintain life).

For more information, see [24/7 Activity tracking](#).

## Cardio Load Status



**Cardio Load Status** looks at the relation between your short term training load (**Strain**) and long term training load (**Tolerance**) and based on that tells you whether you are in a detraining, maintaining, productive or overreaching training load status. When recovery feedback is set on and enough data is available, you'll see your daily training recommendation instead of your Cardio load status on the watch face.



In addition, when opening the details, you can see the numeric values for your Cardio Load Status, Strain and Tolerance, and also a verbal description of your Cardio load status.

- The numeric value for your Cardio load status is Strain divided by Tolerance.
- **Strain** shows you how much you have strained yourself with training lately. It shows your average daily cardio load from the past 7 days.
- **Tolerance** describes how prepared you are to endure cardio training. It shows your average daily cardio load from the past 28 days.
- Verbal description of your Cardio load status.

For more information, see [Training Load Pro](#).

## Heart rate



You can quickly check your current heart rate without starting a training session. Just tighten your wristband, choose this watch face, press OK and you'll see your current heart rate in a moment.



When using the Continuous Heart Rate feature, you can also follow what are the highest and lowest heart rate readings of your day and you can check what your lowest heart rate reading was during the previous night. You can turn the Continuous Heart Rate feature on and off on your watch in **Settings > General settings > Continuous HR tracking**.

For more information, see [Continuous Heart Rate feature](#).



## Latest training sessions



See the time passed since your latest training session and the sport of the session.

In addition, when opening the details, you can view the summaries of your training sessions from the last 14 days. Browse to the training session you want to view with UP/DOWN and press OK to open the summary. For more information, see [Training summary](#).

## Sleep



See an overview of your last night's sleep. It shows you when you fell asleep and woke up, your sleep time, actual sleep, sleep continuity, sleep breakdown and feedback about your sleep. If you've rated how you slept, you'll also see your evaluation of your sleep.

For more information, see [Polar Sleep Plus](#).

## MENU

Enter the menu by pressing BACK and browse through the menu by pressing UP or DOWN. Confirm selections with the OK button, and return with the BACK button.



### Start training

From here, you can start your training sessions. Press OK to enter the pre-training mode and browse to the sport profile you want to use.

You can also enter the pre-training mode by pressing and holding OK in the time view.

See [Start a training session](#) for detailed instructions.



### TIMERS

In **Timers** you'll find stopwatch and countdown timer.

#### Stopwatch

To start the stopwatch, press OK. To add a lap, press OK. To pause the stopwatch, press BACK.



#### Countdown Timer


You can set the countdown timer to count down from a preset time. Choose **Set Timer**, and set the countdown time, and press OK to confirm. When completed, choose **Start** and press OK to start the countdown timer.

The countdown timer is added to the basic watch face with time and date.





At the end of the countdown, the watch notifies you by vibrating. Press OK to restart the timer, or press BACK to cancel and return to the time view.

 *During training you can use interval timer and countdown timer. Add the timer views to training views in the sport profile settings in Flow and sync the settings to your watch. For more information on using timers during training, see [During training](#).*



#### Orthostatic test

From here, you can take the Orthostatic test (H10 heart rate sensor needed), view your latest results compared to your average and reset the test period.

- **Start the test with HR sensor**
- **Latest results**
- **Reset test period**

See [Orthostatic test](#) for detailed instructions.



#### Settings

You can edit the following settings on your watch:

- **Physical settings**
- **General settings**
- **Watch settings**

For more information, see [Settings](#).



In addition to the settings available on your watch, you can edit Sport Profiles in the Polar Flow web service and app. Customize your watch with your favorite sports and the information you want to follow during your training sessions. See [Sport Profiles in Flow](#) for more information.

## PAIRING A MOBILE DEVICE WITH YOUR WATCH

Before you can pair a mobile device with your watch, you need to setup your watch in the Polar Flow web service or with the Polar Flow mobile app as described in chapter [Setting up your watch](#). If you did the setup for your watch with a mobile device, your watch has already been paired. If you did the setup with a computer and would like to use your watch with Polar Flow app, please pair your watch and mobile as follows:

Before pairing a mobile device

- download Flow app from the App Store or Google Play
- make sure your mobile device has Bluetooth turned on, and airplane mode/flight mode is not turned on.
- **Android users:** make sure location is enabled for Polar Flow app in the phone's application settings.

To pair a mobile device:

1. On your mobile device, open Flow app and sign in with your Polar account, which you have created when setting up your watch.



**Android users:** If you have several Flow app compatible Polar devices in use, make sure you have chosen Vantage V as the active device in the Flow app. This way Flow app knows to connect to your watch. In the Flow app, go to **Devices** and choose Vantage V.

2. On your watch, press and hold BACK in time mode **OR** go to **Settings > General settings > Pair and sync > Pair and sync phone** and press OK.
3. **Open Flow app and bring your watch close to phone** is displayed on your watch.
4. When the **Bluetooth Pairing Request** confirmation message appears on your mobile device, check that the code shown on your mobile device matches the code shown on your watch.
5. Accept the Bluetooth pairing request on your mobile device.
6. Confirm the pin code on your watch by pressing the OK.
7. **Pairing done** is displayed once the pairing is completed.


## DELETE A PAIRING

To delete a pairing with a mobile device:

1. Go to **Settings > General settings > Pair and sync > Paired devices** and press OK.
2. Choose the device you want to remove from the list and press OK.
3. **Remove pairing?** is displayed. Confirm by pressing OK.
4. **Pairing removed** is displayed when you are done.


## UPDATING THE FIRMWARE

To keep your watch up to date and get the best performance, always make sure to update the firmware whenever a new version is available. Firmware updates are performed to improve the functionality of your watch. They can include completely new features, improvements to existing features, or bug fixes.

 *You won't lose any data due to the firmware update. Before the update begins, the data from your watch is synced to the Flow web service.*

### WITH MOBILE DEVICE OR TABLET

You can update the firmware with your mobile device if you're using Polar Flow mobile app to sync your training and activity data. The app will let you know if there's an update available and will guide you through it. We recommend that you plug in the watch to a power source before starting the update to ensure flawless update operation.

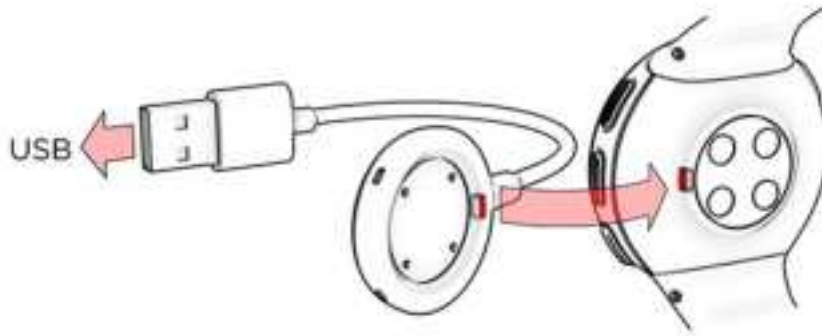
 *The wireless firmware update may take up to 20 minutes, depending on your connection.*

### WITH COMPUTER

Whenever a new firmware version is available, FlowSync will notify you when you connect the watch to your computer. The firmware updates are downloaded via FlowSync.

#### To update the firmware:

1. Plug your watch to your computer with the custom cable that came in the box. Make sure that the cable snaps into place. Align the ledge on the cable with the slot on your watch (marked with red).



2. FlowSync starts syncing your data.
3. After syncing, you are asked to update the firmware.
4. Choose **Yes**. New firmware is installed (this may take up to 10 minutes), and the watch restarts. Please wait until the firmware update has been finalized before you detach the watch from your computer.

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## PHYSICAL SETTINGS

To view and edit your physical settings, go to **Settings > Physical settings**. It is important that you are precise with the physical settings, especially when setting your weight, height, date of birth and sex, as they have an impact on the accuracy of the measuring values, such as the heart rate zone limits and calorie expenditure.

In **Physical settings** you'll find:

- **Weight**
- **Height**
- **Date of birth**
- **Sex**
- **Training background**
- **Activity goal**
- **Preferred sleep time**
- **Maximum heart rate**
- **Resting heart rate**
- **VO<sub>2</sub>max**

## **WEIGHT**

Set your weight in kilograms (kg) or pounds (lbs).

## **HEIGHT**

Set your height in centimeters (metric) or in feet and inches (imperial).

## **DATE OF BIRTH**

Set your birthday. The order in which the date settings are depends on which time and date format you have chosen (24h: day - month - year/12h: month - day - year).

## **SEX**

Select **Male** or **Female**.

## **TRAINING BACKGROUND**

Training background is an assessment of your long-term physical activity level. Select the alternative that best describes the overall amount and intensity of your physical activity during the past three months.

- **Occasional (0-1h/week):** You do not participate regularly in programmed recreational sport or heavy physical activity, e.g. you walk only for pleasure or exercise hard enough to cause heavy breathing or perspiration only occasionally.

- **Regular (1-3h/week):** You participate regularly in recreational sports, e.g. you run 5-10 km or 3-6 miles per week or spend 1-3 hours per week in comparable physical activity, or your work requires modest physical activity.
- **Frequent (3-5h/week):** You participate at least 3 times a week in heavy physical exercise, e.g. you run 20-50 km/12-31 miles per week or spend 3-5 hours per week in comparable physical activity.
- **Heavy (5-8h/week):** You participate in heavy physical exercise at least 5 times a week, and you may sometimes take part in mass sports events.
- **Semi-pro (8-12h/week):** You participate in heavy physical exercise almost daily, and you exercise to improve performance for competitive purposes.
- **Pro (>12h/week):** You are an endurance athlete. You participate in heavy physical exercise to improve your performance for competitive purposes.

## ACTIVITY GOAL

**Daily activity goal** is a good way to find out how active you really are in your everyday life. Choose your typical activity level from three options and see how active you need to be to reach your daily activity goal.

The time you need to complete your daily activity goal depends on the level you have chosen and the intensity of your activities. Age and gender also affect the intensity you need to reach your daily activity goal.

### Level 1

If your day includes only a little sports and a lot of sitting, commuting by car or public transport and so on, we recommend you pick this activity level.

### Level 2

If you spend most of your day on your feet, perhaps due to the type of work you do or your daily chores, this is the right activity level for you.

### Level 3

If your work is physically demanding, you're into sports or otherwise tend to be on the move and active, this is the activity level for you.

## PREFERRED SLEEP TIME

Set **Your preferred sleep** time to define how long you aim to sleep every night. By default, it is set to the average recommendation for your age group (eight hours for adults from 18 to 64 years). If you feel

that eight hours of sleep is too much or too little for you, we recommend you adjust your preferred sleep time to meet your individual needs. By doing this, you'll get accurate feedback on how much sleep you got in comparison to your preferred sleep time.

## MAXIMUM HEART RATE

Set your maximum heart rate, if you know your current maximum heart rate value. Your age-predicted maximum heart rate value (220-age) is displayed as a default setting when you set this value for the first time.

$HR_{max}$  is used to estimate energy expenditure.  $HR_{max}$  is the highest number of heartbeats per minute during maximum physical exertion. The most accurate method for determining your individual  $HR_{max}$  is to perform a maximal exercise stress test in a laboratory.  $HR_{max}$  is also crucial when determining training intensity. It is individual and depends on age and hereditary factors.

## RESTING HEART RATE

Your resting heart rate is the lowest number of heartbeats per minute (bpm) when fully relaxed and without distractions. Your age, fitness level, genetics, health status and sex affect the resting heart rate. A typical value for an adult is 55–75 bpm, but your resting heart rate can be significantly lower than that, for example, if you're very fit.

It's best to measure your resting heart rate in the morning after a good night's sleep, right after you wake up. It's OK to go to the bathroom first if it helps you to relax. Don't do any strenuous training leading up to the measurement and make sure you're fully recovered from any activity. You should do the measurement more than once, preferably on consecutive mornings, and calculate your average resting heart rate.

### To measure your resting heart rate:

1. Wear your watch. Lie down on your back and relax.
2. After about 1 minute, start a training session on your wearable. Choose any sport profile, for example Other indoor.
3. Lie still and breathe calmly for 3–5 minutes. Don't look at your training data during the measuring.
4. Stop the training session on your Polar device. Sync the wearable with the Polar Flow app or web service and check the training summary for the value of your lowest heart rate (HR min)—this is your resting heart rate. Update your resting heart rate to your physical settings in Polar Flow.

## VO<sub>2</sub>MAX

Set your VO<sub>2</sub>max.



VO2<sub>max</sub> (maximal oxygen uptake, maximal aerobic power) is the maximal rate at which oxygen can be used by the body during maximal exercise; it is related directly to the maximal capacity of the heart to deliver blood to the muscles. VO2<sub>max</sub> can be measured or predicted by fitness tests (e.g. maximal exercise tests and submaximal exercise tests). You can also use your [Running Index](#) score, which is an estimation of your VO2<sub>max</sub>.

## GENERAL SETTINGS

To view and edit your general settings, go to **Settings > General settings**.

In **General settings** you'll find:

- **Pair and sync**
- **Bike settings** (Visible only if you have paired a cycling sensor with your watch)
- **Continuous HR tracking**
- **Recovery feedback**
- **Flight mode**
- **Do not disturb**
- **Phone notifications**
- **Units**
- **Language**
- **About your watch**

## PAIR AND SYNC

- **Pair and sync phone/Pair sensor or other device:** Pair sensors or mobile devices with your watch. Sync data with Flow app.
- **Paired devices:** View all the devices you have paired with your watch. These can include heart rate sensors, running sensors, cycling sensors and mobile devices.

## BIKE SETTINGS



*Bike settings are visible only if you have paired a cycling sensor with your watch.*

**Wheel size:** Set the wheel size in millimeters. For instructions on measuring the wheel size, see [Pairing sensors with your watch](#).

**Crank length:** Set the crank length in millimeters. The setting is visible only if you have paired a power sensor.

**Sensors in use:** View all the sensors you have linked to the bike.

## CONTINUOUS HR TRACKING

Turn the Continuous Heart Rate feature **On** or **Off**. For more information, see [Continuous Heart Rate](#).

## RECOVERY FEEDBACK

Choose **On** or **Off**. When set on the watch asks you to schedule an Orthostatic test for at least three days a week. Choose the days, and choose Save. For information, see [Recovery Pro](#).

## FLIGHT MODE

Choose **On** or **Off**.

Flight mode cuts off all wireless communication from your watch. You can still use it, but you can't sync your data with the Polar Flow mobile app or use it with any wireless accessories.

## PHONE NOTIFICATIONS

Set phone notifications **Off** or **On, when not training**. Note that you will not receive any notifications during training sessions.

## DO NOT DISTURB

Choose **Off**, **On** or **On ( - )**. Set the period when do not disturb is on. Choose when it **Starts at** and **Ends at**. When it is set on, you will not get any notifications or call alerts. The backlight activation gesture and sounds are also disabled.

## UNITS

Choose metric (**kg, cm**) or imperial (**lb, ft**). Set the units used to measure weight, height, distance and speed.

## LANGUAGE

You can choose the language you want to use on your watch. Your watch supports the following languages: **Bahasa Indonesia, Čeština, Dansk, Deutsch, English, Español, Français, Italiano, Netherlands, Norsk, Polski, Português, Русский, Suomi, Svenska** or **Türkçe**.

## ABOUT YOUR WATCH

Check the device ID of your watch, as well as the firmware version, HW model, A-GPS expiry date and the Vantage V-specific regulatory labels.

**Restart your watch:** If you experience problems with your watch, you can try restarting it. Restarting the watch will not delete any of the settings or your personal data from the watch. Press the OK button and then press OK again to confirm the restart. You can also restart your watch by pressing and holding the OK button for 10 seconds.

## WATCH SETTINGS

To view and edit your watch settings, go to **Settings > Watch settings**

In **Watch settings** you'll find:

- **Alarm**
- **Watch face**
- **Time**
- **Date**
- **First day of week**

### ALARM

Set alarm repetition: **Off**, **Once**, **Monday to Friday** or **Every day**. If you choose **Once**, **Monday to Friday** or **Every day**, also set the time for the alarm.

 *When the alarm is set on, a clock icon is displayed in the time view.*


### WATCH FACE

Choose the watch face:

- **Analog**
- **Digital**


### TIME

Set the time format: **24 h** or **12 h**. Then set the time of day.

 *When syncing with the Flow app and web service, the time of day is automatically updated from the service.*


## DATE

Set the date. Also set the **Date format**, you can choose **mm/dd/yyyy**, **dd/mm/yyyy**, **yyyy/mm/dd**, **dd-mm-yyyy**, **yyyy-mm-dd**, **dd.mm.yyyy** or **yyyy.mm.dd**.

 *When syncing with the Flow app and web service, the date is automatically updated from the service.*

## FIRST DAY OF WEEK

Choose the starting day of each week. Choose **Monday**, **Saturday** or **Sunday**.

 *When syncing with the Flow app and web service, the week's starting day is automatically updated from the service.*

# TRAINING

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## WRIST-BASED HEART RATE MEASUREMENT

Your watch measures your heart rate from the wrist with the **Polar Precision Prime™** sensor fusion technology. This new heart rate innovation combines optical heart rate measurement with skin contact measurement, ruling out any disturbances to the heart rate signal. It tracks your heart rate accurately even in the most demanding conditions and training sessions.

Although there are many subjective clues as to how your body is doing during exercise (perceived exertion, breathing rate, physical sensations), none of them are as reliable as measuring heart rate. It is objective and affected by both internal and external factors—meaning that you will have a dependable measure of your physical state.

### WEARING YOUR WATCH WHEN MEASURING HEART RATE FROM YOUR WRIST

To measure wrist-based heart rate accurately during training (and when using the [Continuous Heart Rate feature](#)) make sure that you wear the watch correctly:

- Wear your watch on top of your wrist, at least a finger's width up from the wrist bone (see the picture below).
- Tighten the wristband firmly around your wrist. The sensor on the back must be in constant touch with your skin and the watch should not be able to move on your arm. A good way to check that the wristband is not too loose is if you push the wristband lightly up from both sides of your arm

and make sure the sensor doesn't lift from your skin. When pushing the wristband up you shouldn't see the LED light shining from the sensor.

- For most accurate heart rate measurement, we advise you to wear your watch for a few minutes prior to starting the heart rate measurement. Also it's a good idea to warm up the skin if your hands and skin get cold easily. Get the blood going before starting your session!



**i** *If you have tattoos on the skin of your wrist, avoid placing the sensor right on it as it may prevent accurate readings.*

In sports where it's more challenging to keep the sensor stationary on your wrist or where you have pressure or movement in muscles or tendons near the sensor, we recommend using a Polar heart rate sensor with a chest strap if you're looking for supreme accuracy in your training. Your watch is compatible with Bluetooth® heart rate sensors, like Polar H10. The Polar H10 heart rate sensor is more responsive to rapidly increasing or decreasing heart rate, so it's the ideal option also for interval type of training with quick sprints.

**i** *To maintain the best possible performance of the wrist-based heart rate measurement, keep your watch clean and prevent scratches. After a sweaty training session, we recommend that you wash the watch under running water with a mild soap and water solution. Then wipe it dry with a soft towel. Let it fully dry before charging.*

## **WEARING YOUR WATCH WHEN NOT MEASURING HEART RATE FROM YOUR WRIST**

Loosen the wristband a bit for a more comfortable fit and to let your skin breathe. Wear the watch just as you would wear a normal watch.

**i** *Every once in a while it's a good idea to let your wrist have a breather, especially if you have sensitive skin. Take off your watch and recharge it. This way both your skin and your watch can have a rest, and be ready for your next training event.*

## START A TRAINING SESSION

1. [Wear your watch](#) and tighten the wristband.
2. To enter the pre-training mode, press and hold OK in time view or press BACK to enter the main menu and choose **Start training**




From the pre-training mode, you can access quick menu by tapping the icon or with the LIGHT button. The options displayed in the quick menu depend on the sport you have chosen and whether you are using GPS.

You can, for example, choose a favorite training target or route you want to perform and add timers to your training views. For more information, see [Quick menu](#).

After your choice the watch returns to the pre-training mode.

3. Browse to your preferred sport.
4. Stay in the pre-training mode until the watch has found your heart rate and the GPS satellite signals (if applicable to your sport) to make sure your training data is accurate. To catch GPS satellite signals, go outdoors and away from tall buildings and trees. Keep your watch still with the display upwards and avoid touching the watch during the GPS signal search.

 *If you have paired an optional Bluetooth sensor with your watch, the watch will automatically start searching for the sensor signal as well.*



The circle around the GPS icon will turn green when the GPS is ready. The watch notifies you with a sound and vibration.



The watch has found your heart rate when your heart rate is shown.



When you're wearing a Polar heart rate sensor that's paired with your watch, the watch automatically uses the connected sensor to measure your heart rate during training sessions. A blue circle around the heart rate symbol indicates that your watch uses the connected sensor to measure your heart rate.



5. When all signals are found, press OK to start training recording.

See [During Training](#) for more information on what you can do with your watch during training.

## START A PLANNED TRAINING SESSION

You can plan your training and [create detailed training targets](#) in the Polar Flow app or the Polar Flow web service and sync them to your watch.

To start a planned training session scheduled for the current day:

1. Enter the pre-training mode by pressing and holding OK in time view.
2. You'll be prompted to start a training target you've scheduled for the day.



3. Press OK to view the target information.
4. Press OK to return to pre-training mode, and choose the sport profile you want to use.
5. When the watch has found all the signals, press OK. **Recording started** is displayed and you can start training.

Your watch will guide you towards completing your target during training. See [During Training](#) for more information.



## START A MULTISPORT TRAINING SESSION

Multisport allows you to include multiple sports in one training session, and seamlessly switch between sports without interrupting your training recording. During a multisport training session your transition times between sports are automatically monitored, allowing you to see how long it took you to switch from one sport to another.

There are two different ways to perform a multisport training session: fixed multisport and free multisport. In a fixed multisport (multisport profiles in the Polar sports list) like triathlon, the order of the sports is fixed, and they must be performed in that specific order. In free multisport, you can choose what sports you perform and in which order you perform them by selecting them from the sport list. You can also switch back and forth between sports.

Before starting a multisport training session, make sure that you have set the sport profile settings for each of the sports that you are going to use for the training session. For more information, see [Sport profiles in Flow](#).

1. Press BACK to enter the main menu, choose **Start training**, and then browse to a sport profile. Choose Triathlon, Free multisport or any other multisport profile (can be added in the Flow web service).
2. Once your watch has found all the signals, press OK. **Recording started** is displayed and you can start training.
3. To change the sport press BACK to go to transition mode.
4. Choose your next sport, and press OK (your transition time is shown) and continue training.

## QUICK MENU

You can access the quick menu from pre-training mode, during a session when paused and during transition mode in multisport sessions. In pre-training mode it can be accessed by tapping the icon or with the LIGHT button. In pause and transition mode it can only be accessed with the LIGHT button.



The options displayed in the quick menu depend on the sport you have chosen and whether you are using GPS.



### Pool length:

When using the Swimming/Pool swimming profile, it's important that you choose the correct pool length, as it affects pace, distance and stroke calculation, as well as your SWOLF score. Press OK to access the **Pool length** setting and change the previously set pool length if necessary. The default lengths are 25 meters, 50 meters and 25 yards, but you can also set it manually to a custom length. The minimum length that can be chosen is 20 meters/yards.



*Pool length setting is only available in the pre-training mode from the quick menu.*



### Calibrate power sensor:

If you have paired a third-party cycling power sensor with your watch, you can calibrate the sensor from the quick menu. First, choose one of the cycling sport profiles and wake up the transmitters by rotating the cranks. Then choose **Calibrate power sensor** from the quick menu and follow the on-screen instructions to calibrate your sensor. For calibration instructions specific to your power sensor, see the manufacturer's instructions.



### Favorites:

In **Favorites** you'll find training targets that you have saved as favorites in the Flow web service, and sync it to your watch. Choose a favorite training target you want to perform. After your choice, the watch returns to the pre-training mode where you can start the training session.

For more information, see [Favorites](#).



### Interval timer:

You can set time and/or distance based interval timers to precisely time work and recovery phases in your interval training sessions.

To add interval timer to your training views for the session, choose **Timer for this session > On**. You can use a previously set timer or create a new timer by returning to the quick menu and choosing **Interval timer > Set interval timer**:

1. Choose **Time-based** or **Distance-based**: **Time-based**: Define minutes and seconds for the timer and press OK. **Distance-based**: Set the distance for the timer and press OK. **Set another timer?** is shown. To set another timer, press OK.
2. When completed, the watch returns to pre-training mode where you can start the training session. The timer starts when you start the training session.

For more information, see [During Training](#).



#### Countdown timer:

To add countdown timer to your training views for the session, choose **Timer for this session** > **On**. You can use a previously set timer or create a new timer by returning to the quick menu and choosing **Countdown timer** > **Set timer**. Set the countdown time, and press OK to confirm. When completed, the watch returns to pre-training mode where you can start the training session. The timer starts when you start the training session.

For more information, see [During Training](#).



#### Routes:

In **Routes**, you'll find the routes that you have saved as favorites in the Flow web service Explore view or in the analysis view of your training session, and synced to your watch.

Choose the route from the list, and then choose where you want to start the route: **Start point** (original direction), **Mid-route** (original direction), **End point to reverse direction** or **Mid-route to reverse direction**. You may be asked to calibrate the compass of your watch. If so, follow the instructions on the display. After calibration, the watch returns to pre-training mode where you can start the training session.

For more information, see [Route Guidance](#).



*Routes are only available in the pre-training mode quick menu if GPS is set on for the sport profile.*



#### Back to start:

The back to start feature guides you back to the starting point of your session. To add the **Back to start** view to your training views of the current training session, choose **Back to start** on, and press OK.

For more information, see [Back to start](#).



*The back to start feature is only available if GPS is set on for the sport profile.*

When you choose a training target for your session, the **Favorites** and **Routes** options are crossed out in the quick menu. This is because you can only choose one target for the session. And if you choose a

route for your session, the **Back to start** feature will be crossed out in the quick menu because **Routes** and **Back to start** features cannot be chosen at the same time. To change the target, choose the crossed out option and you will be asked if you want to change your target or route. Confirm with OK to choose another target.

## DURING TRAINING

### BROWSE THE TRAINING VIEWS

During training you can browse through the training views with UP/DOWN. Note that the available training views and the information you see on the training views depend on the sport you've chosen and on your edit of the chosen sport profile.

You can add sport profiles on your watch and define the settings for each sport profile in the Polar Flow app and web service. You can create tailored training views for each sport you do and choose what data you want to follow during your sessions. For more information, see [Sport profiles in Flow](#).

For example, your training views can have the following information:



Your heart rate and the heart rate ZonePointer

Distance

Duration

Pace/Speed



Your heart rate and the heart rate ZonePointer

Duration

Calories



Descent

Your current altitude

Ascent



Maximum heart rate

Heart rate graph and your current heart rate

Average heart rate



Maximum power

Power graph and your current power

Average power



Time of day

Duration

## SET TIMERS


Before you can use timers during training, you need to add the timers to your training views. You can do this either by setting the timer view on for your current training session from the [Quick menu](#) or by adding the timers to the training views of the sport profile in the Flow web service sport profile settings and syncing the settings to your watch.



See [Sport Profiles in Flow](#) for more information.

## INTERVAL TIMER



 If you set the timer view on for your training session from the [Quick menu](#), the timer starts when you start the training session. You can stop the timer and start a new timer as instructed below.


If you have added the timer in the training views of the sport profile you are using, you can start the timer as follows:

1. Browse to the **Interval timer** view and press and hold OK. Choose **Start** to use a previously set timer or create a new timer in **Set interval timer**:
2. Choose **Time-based** or **Distance-based**: **Time-based**: Define minutes and seconds for the timer and press OK. **Distance-based**: Set the distance for the timer and press OK.
3. **Set another timer?** is shown. To set another timer, press OK.
4. When completed, choose **Start** to start the interval timer. At the end of each interval, the watch notifies you by vibrating.

To stop the timer, press and hold OK and choose **Stop timer**.

## COUNTDOWN TIMER



 If you set the timer view on for your training session from the [Quick menu](#), the timer starts when you start the training session. You can stop the timer and start a new timer as instructed below.

If you have added the timer to the training views of the sport profile you are using, start the timer as follows:

1. Browse to the **Countdown timer** view and press and hold OK.
2. Choose **Start** to use a previously set timer or choose **Set countdown timer** to set a new countdown time. When completed, choose **Start** to start the countdown timer.
3. At the end of the countdown, the watch notifies you by vibrating. If you want to restart the countdown timer, press and hold OK and choose **Start**.

To stop the timer, press and hold OK and choose **Stop timer**.

## MARK A LAP

Press OK to mark a lap. Laps can also be taken automatically. In sport profile settings in the Polar Flow app or web service, set **Automatic lap** to **Lap distance** or **Lap duration**. If you choose **Lap distance**, set the distance after which each lap is taken. If you choose **Lap duration**, set the duration after each lap is taken.

## SWITCH SPORT DURING A MULTISPORT SESSION

Press BACK, and choose the sport you want to switch to. Confirm your selection with OK.

## TRAINING WITH A TARGET

If you have created a **quick training target** based on duration, distance or calories in the Flow app or web service and synced it to your watch, you have the following training target view as the default first training view:



If you've created a target based on duration or distance, you can see how much of your target you still have remaining before you reach it.

OR

If you've created a target based on calories, you can see how many calories of your target you have left to burn.

If you have created a **phased training target** in the Flow app or web service and synced the target to your watch, you have the following training target view as the default first training view:



- Depending on the chosen intensity, you can see either your heart rate or speed/pace and the lower and upper heart rate or speed/pace limit of the current phase.
- Phase name and phase number/total number of phases
- Duration/distance covered so far
- Target duration/distance of the current phase

 See [Planning your training](#) for instructions on creating training targets.

## CHANGE PHASE DURING A PHASED SESSION

The phase will change automatically when you have finished a phase. The watch notifies you by vibrating when the phase changes.

## VIEW TRAINING TARGET INFORMATION

To view the training target information during training, press and hold OK in the training target view.


## NOTIFICATIONS

If you are training outside the planned heart rate zones or speed/pace zones, your watch notifies you with a vibration.



## PAUSING/STOPPING A TRAINING SESSION

1. Press BACK to pause your training session.
2. To continue training, press OK. To stop the session, press and hold BACK. You'll get a summary of your training session on your watch right after you've stopped training.

 *If you stop your session after pausing, the time elapsed after pausing is not included in the total training time.*

## TRAINING SUMMARY AFTER TRAINING

You'll get a summary of your training session on your watch right after you've stopped training. Get a more detailed and illustrated analysis in the Polar Flow app or in the Polar Flow web service.

The information shown in your summary depends on the sport profile and data collected. For example, your training summary can include the following information:



Start time and date

Duration of the session

Distance covered in the session



**Heart rate**

Your average and maximum heart rate during the session.

Your Cardio Load from the session



### Heart rate zones

Training time spent in different heart rate zones



### Calories

Calories burned during the session

Fat burn % of calories: Calories expended from fat during a workout expressed as a percentage of the total calories burned during the session



### Pace/Speed

Average and maximum pace/speed of the session

Running Index: Your running performance class and numerical value. Find out more from chapter [Running Index](#).




### Speed zones

Training time spent in different speed zones



### Cadence

Your average and maximum cadence for the session

 Running cadence is measured with a built-in accelerometer from your wrist movements. Cycling cadence is shown if you have a Polar Cadence Sensor Bluetooth® Smart in use.



#### Altitude

Maximum altitude during the session

Ascended meters/feet during the session

Descended meters/feet during the session

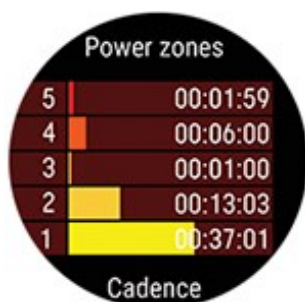


#### Power

Average power


Maximum power

Muscle load



#### Power zones

Training time spent in different power zones

 Running power is measured from the wrist when using a running type sport profile and GPS is available. Cycling power is shown when using a cycling type sport profile and you have an external cycling power sensor in use.



#### Laps/Automatic laps

Lap number

Best lap

Average lap

### Multisport Summary

Multisport summary includes an overall summary of the session as well as sport specific summaries, which include duration and distance covered in the sport.

### To view your training summaries later on your watch:



In time view, use the UP and DOWN buttons to navigate to the **Latest training sessions** watch face, and then press OK.

You can view the summaries of your training sessions from the last 14 days. Browse to the training session you want to view with UP/DOWN and press OK to open the summary. Your watch can contain a maximum of 20 training summaries.

## TRAINING DATA IN POLAR FLOW APP

Your watch syncs with the Polar Flow app automatically after you finish a training session if your phone is within the Bluetooth range. You can also sync your training data manually from the watch to the Flow app by pressing and holding the BACK button of your watch when you're signed in to the Flow app and your phone is within the Bluetooth range. In the app you can analyze your data at a glance after each session. The app allows you to see a quick overview of your training data.

For more information, see [Polar Flow App](#).

## TRAINING DATA IN POLAR FLOW WEB SERVICE

Analyze every detail of your training and learn more about your performance. Follow your progress and also share your best sessions with others.

For more information, see [Polar Flow Web Service](#).

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## GPS

Your watch has built-in GPS that provides accurate speed, distance and altitude measurement for a range of outdoor sports, and allows you to see your route on map in the Flow app and web service after your session.

The watch uses Assisted GPS (A-GPS) to acquire a fast satellite fix. The A-GPS data tells your watch the predicted positions of the GPS satellites. This way the watch knows where to search for the satellites and thus is able to acquire signals from them within seconds, even under difficult signal conditions.

The A-GPS data updates once a day. The latest A-GPS data file is automatically updated to your watch each time you sync it with the Flow web service via FlowSync software. If you sync your watch with the Flow web service via Flow app, the A-GPS data file update takes place once a week.

### A-GPS EXPIRY DATE

The A-GPS data file is valid for up to 13 days. Positioning accuracy is relatively high during the first three days, and progressively decreases during the remaining days. Regular updates help to ensure a high level of positioning accuracy.

You can check the expiry date for the current A-GPS data file from your watch. Go to **Settings > General settings > About your watch > A-GPS exp. date**. If the data file has expired, sync your watch with the Flow web service via FlowSync software or with the Flow app to update A-GPS data.


Once the A-GPS data file has expired, more time may be required for acquiring the current position.

### GPS FEATURES

Your watch includes the following GPS features:

- **Distance:** Accurate distance during and after your session.
- **Speed/Pace:** Accurate speed/pace information during and after your session.

- **Running index:** Running Index is based on heart rate and speed data measured during the run. It gives information about your performance level, both aerobic fitness and running economy.

 For best GPS performance, wear the watch on your wrist with the display facing up. Due to the location of the GPS antenna on the watch, it is not recommended to wear it with the display on the underside of your wrist. When wearing it on the handlebars of a bike, make sure the display is facing up.


## ROUTE GUIDANCE

The route guidance feature guides you along routes that you have recorded in previous sessions or routes that other Flow web service users have recorded and shared. You can choose to go to the route start point, route end point or nearest point on the route (mid-route). First your watch will guide you to your chosen start point on the route. Once on the route, your watch will guide you all the way through and keep you on track. Just follow the guidance on the display. At the bottom of the display you'll see how much distance you still have left.

### ADDING A ROUTE TO YOUR WATCH

To add a route to your watch you must save it as a favorite in the Flow web service Explore view or in the analysis view of your training session, and sync it to your watch. For more information see [Favorites](#)

### START A TRAINING SESSION WITH ROUTE GUIDANCE

1. In pre-training mode, press the LIGHT button or tap  to enter the quick menu.
2. Choose **Routes** from the list, and then choose the route you want to do.
3. Choose where you want to start the route: **Start point, Mid-route, End point to reverse direction** or **Mid-route to reverse direction**. You may be asked to calibrate the compass of your watch. If so, follow the instructions on the display.
4. Choose the sport profile you want to use, and start your session.
5. Your watch will guide you to the route. **Route start found** is displayed when you reach it, and then you're ready to go.

**Route-end point reached** is shown when you're finished.

### GUIDANCE ON THE DISPLAY




- The arrow shows the correct direction
- More of the route is shown as you proceed
- Distance left

## BACK TO START

The back to start feature guides you back to the starting point of your session.

To use the back to start feature for one session:

1. In pre-training mode, press the LIGHT button or tap  to enter the quick menu.
2. Choose **Back to start** from the list, and choose **on**.

You can also set back to start on during a training session by pausing your session and opening the quick menu with the LIGHT button and by scrolling to **Back to start**, and choosing **on**.

If you add the back to start training view to a sport profile in Polar Flow, it is always set on for that sport profile and it does not need to be switched on every session.

To return to your starting point:



- Keep your watch in a horizontal position in front of you.
- Keep moving in order for your watch to determine which direction you are going. An arrow will point in the direction of your starting point.
- To get back to the starting point, always turn in the direction of the arrow.
- Your watch also shows the bearing and the direct distance (beeline) between you and the starting point.

When in unfamiliar surroundings, always keep a map at hand in case the watch loses the satellite signal or the battery runs out.



# SMART COACHING

Whether it's assessing your day-to-day fitness levels, creating individual training plans, working out at the right intensity or receiving instant feedback, Smart Coaching offers a choice of unique, easy-to-use features, personalized to your needs and designed for maximum enjoyment and motivation when training.

Your watch includes the following Polar Smart Coaching features:

- [Training Load Pro](#)
- [Recovery Pro](#)
- [Orthostatic test](#)
- [Running power from the wrist](#)
- [Running Program](#)
- [Running Index](#)
- [Training benefit](#)
- [Smart calories](#)
- [Continuous heart rate](#)
- [Polar Sleep Plus](#)
- [Activity Guide](#)
- [Activity Benefit](#)

## TRAINING LOAD PRO


The new Training Load Pro™ feature measures how your training sessions strain your body and helps to understand how it impacts your performance. Training Load Pro gives you a training load level for your cardiovascular system **Cardio Load**, and with **Perceived Load** you can rate how strained you feel. Training Load Pro also gives you a training load level for your musculoskeletal system (**Muscle Load**). When you know how strained each body system is, you can optimize your training by working the right system at the right time.

### Cardio Load

Cardio Load is based on training impulse calculation (TRIMP), a commonly accepted and scientifically proven method to quantify training load. Your Cardio Load value tells you how much strain your training session put on your cardiovascular system. The higher the Cardio Load, the more strenuous the training session was for the cardiovascular system. Cardio Load is calculated after every workout from your heart rate data and session duration.

## Perceived Load


Your subjective feeling is one useful method of estimating training load for all sports. The **Perceived Load** is a value that takes into account your own subjective experience of how demanding your training session was and the duration of your session. It's quantified with **Rate of Perceived Exertion (RPE)**, a scientifically accepted method to quantify subjective training load. Using the RPE scale is especially useful for sports where measuring training load based on heart rate alone has its limitations, for example strength training.

 *Rate your session in the Flow mobile app to get your **Perceived Load** for the session. You can choose from a scale from 1-10, in which 1 is very, very easy and 10 is maximum effort.*

## Muscle Load

Muscle Load tells you how much your muscles were strained during your training session. Muscle Load helps you quantify your training load in high-intensity training sessions, such as short intervals, sprints and hill sessions, when your heart rate doesn't have enough time to react to the changes in the intensity.

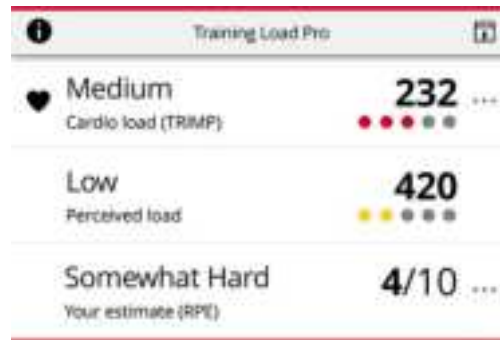
Muscle load shows the amount of mechanical energy (kJ) that you produced during a running or cycling session. This reflects your energy output, not the energy input it took you to produce that effort. In general, the fitter you are, the better the efficiency between your energy input and output. Muscle load is calculated based on power and duration. In case of running, also your weight counts.

 *Muscle Load is calculated from your power data, so you only get a Muscle Load value for your running workouts, and cycling sessions if you're using a separate [cycling power sensor](#).*

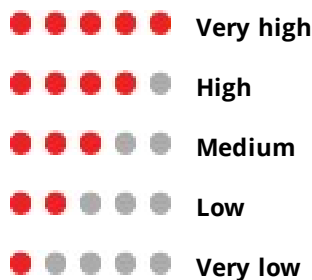
## TRAINING LOAD FROM A SINGLE SESSION

Your Training Load from a single session is shown in the summary of your training session on your watch, in the Flow app and in the Flow web service.

You'll get an absolute training load number for each measured load. The higher the load, the more strain it caused to your body. In addition, you can see a visual bullet scale interpretation and a verbal description of how hard your training load from the session was compared to your 90 days training load average.



The scale of bullets and verbal descriptions adapts according to your progress: the smarter you train, the higher loads you tolerate. As your fitness and tolerance for training improves, a training load that was ranked worth 3 bullets (Medium) a couple of months ago, could rank for only 2 bullets (Low) later on. This adaptive scale reflects the fact that the same kind of training session can have a different impact on your body depending on your current condition.



## STRAIN AND TOLERANCE

In addition to the Cardio load from individual training sessions, the new Training Load Pro feature measures your short term Cardio load (Strain) and long term Cardio load (Tolerance).

**Strain** shows you how much you have strained yourself with training lately. It shows your average daily load from the past 7 days.

**Tolerance** describes how prepared you are to endure cardio training. It shows your average daily load from the past 28 days. To improve your tolerance for cardio training, you need to slowly increase your training over a longer period of time.

## CARDIO LOAD STATUS

Cardio load status looks at the relation between your **Strain** and **Tolerance** and based on that shows you whether you are in a detraining, maintaining, productive or overreaching Cardio load status. You will also get personalized feedback based on your status.

Cardio load status guides you in evaluating the impact your training has on your body and how it affects your progress. Knowing how your past training affects your performance today allows you to keep your total training volume in control and optimize the timing of training at different intensities. Seeing how your training status changes after a session helps you understand how much load was caused by the session.


## Cardio load status on your watch


In time view, use the UP and DOWN buttons to navigate to the Cardio Load Status watch face.





1. Cardio load status graph

2. Cardio load status

 Overreaching (Load much higher than usual):

 Productive (Load slowly increasing)

 Maintaining (Load slightly lower than usual)

 Detraining (Load way lower than usual)

3. The numeric value for your Cardio load status (=Strain divided by Tolerance.)

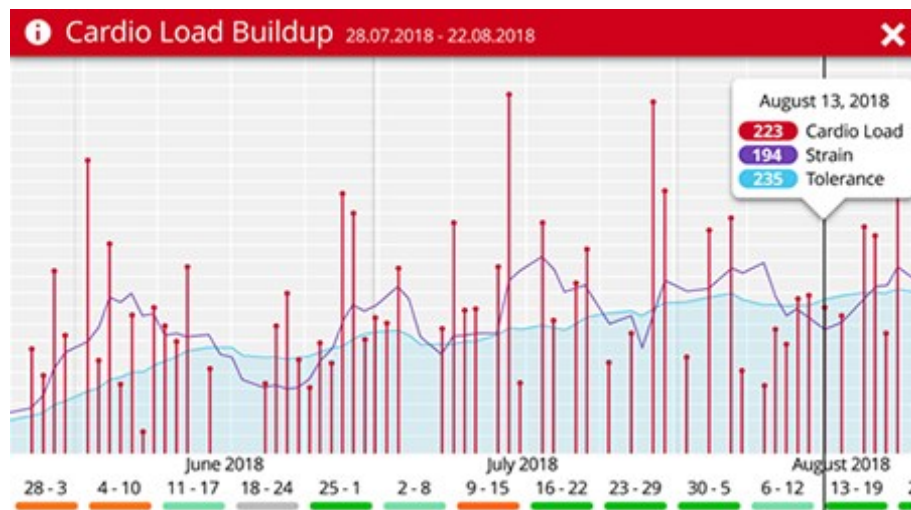
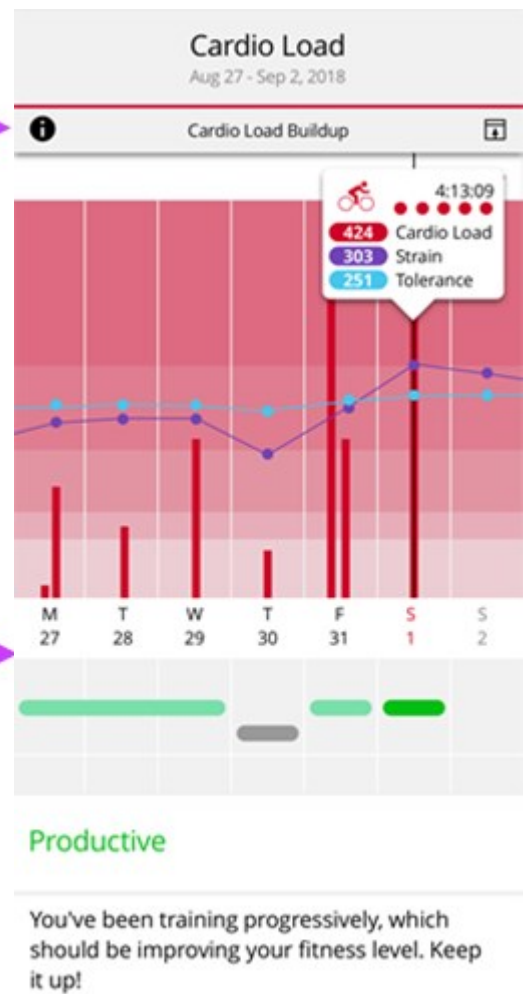
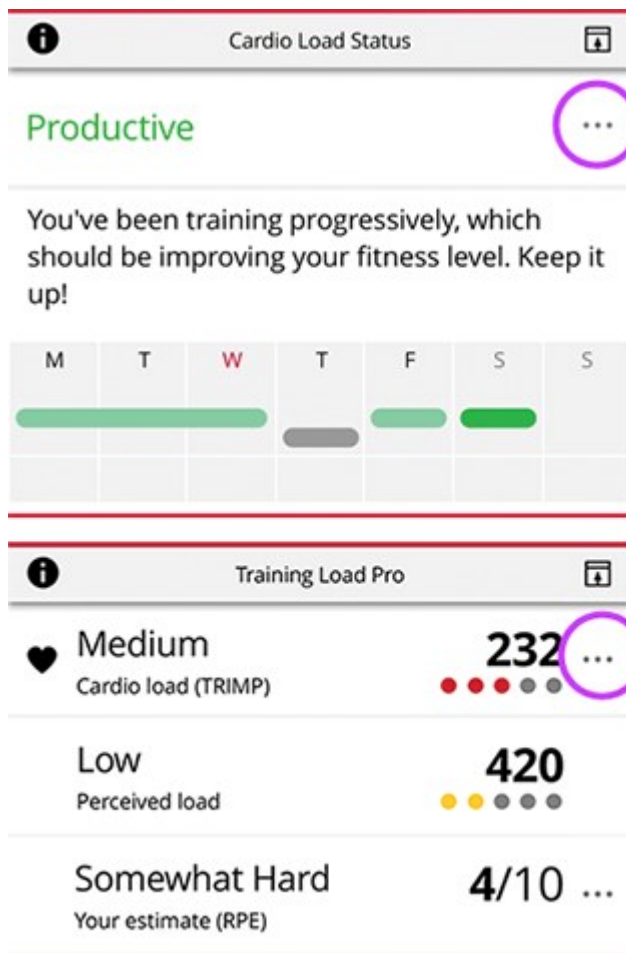
4. Strain

5. Tolerance

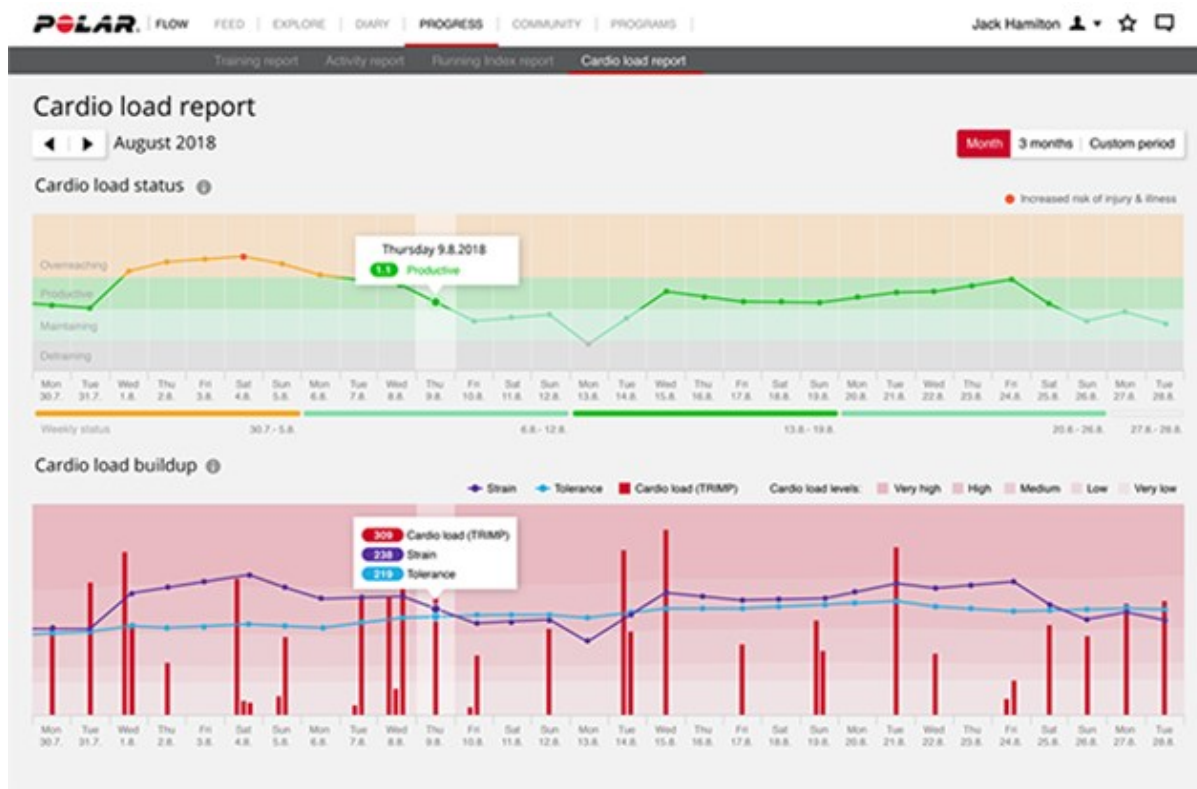
6. Verbal description of your Cardio load status

## LONG TERM ANALYSIS IN THE FLOW APP AND WEB SERVICE

In the Flow app and web service you can follow how your Cardio Load builds up over time and see how your Cardio loads have varied over the past week or months. To view your Cardio Load Buildup in the Flow app, tap the vertical three dots icon in the week summary (Cardio Load Status module) or in the training summary (Training Load Pro module).



To view your Cardio load status and Cardio load buildup in the Flow web service, go to **Progress > Cardio Load report**.



The red bars illustrate the cardio load from your training sessions. The higher the bar, the harder the session was on your cardio system.



The background colors show how hard a session was compared to your session average from the past 90 days, just like the scale of five bullets and verbal descriptions (Very low, Low, Medium, High, Very high).



**Strain** shows how much you have strained yourself with training lately. It shows your average daily cardio load from the past 7 days.



**Tolerance** describes how prepared you are to endure cardio training. It shows your average daily cardio load from the past 28 days. To improve your tolerance for cardio training, slowly increase your training over a longer period of time.

Learn more about the Polar Training Load Pro feature in this [in-depth guide](#).

## RECOVERY PRO

Recovery Pro is a unique recovery tracking solution that lets you know if your cardio system is recovered and ready for cardio training. In addition, it offers recovery feedback and training recommendations based on your short and long-term training and recovery balance.

Recovery Pro works together with [Training Load Pro](#) that gives you a holistic view on how your training sessions strain different systems. Recovery Pro then tells you how your body is coping with this strain, and how it affects your daily readiness for cardio training, and short and long-term recovery.

### Recovery and readiness for cardio training

Your cardio system's recovery, which affects your daily readiness for cardio training is measured with the Orthostatic test. Your heart rate variability values measured with the test are compared to your individual baseline to spot if there are any deviations from your average range.

### Training and recovery balance

Recovery Pro combines your measured and subjective long-term recovery data with your long-term training load (Cardio Load) to monitor the balance between training and recovery. In addition to training-induced factors affecting your recovery, Recovery Pro also takes into account other factors such as poor sleep and mental stress with subjective recovery questions asking about your muscle soreness, how strained you feel and how you slept.

### Recovery feedback and daily training recommendation

With Recovery Pro you get feedback for both your cardio system's current recovery and your longer-term training and recovery balance. Your daily personalized training recommendation is based on these both. It takes into account your heart rate variability values from the Orthostatic test and your recovery questions within your personal baseline and normal range for both together with your Cardio Load status from your training sessions.

## GET STARTED WITH RECOVERY PRO

When you start using Recovery Pro, you need to gather data for a while to build up your personal baseline and typical range before we can give you accurate feedback on your recovery. Recovery feedback is available when:

- Your Cardio load status is available (you've done training sessions with heart rate monitoring on at least three days)
- You've taken at least three Orthostatic tests in the previous seven-day window (You'll need an H10 heart rate sensor for the Orthostatic test. If you already own an H6 or H7, you can also use either

of them.)

- You have answered the perceived recovery questions three times in a seven-day window

### **1. Set Recovery feedback on**

Start using the Recovery Pro feature by setting recovery feedback on. This is done on your watch. Go to **Settings > General Settings > Recovery feedback > Set Recovery feedback on/off**, and set it **on**. The Recovery Pro feature and the recovery feedback setting is available on your watch only, it is not shown in the Flow web service or app.

### **2. Schedule an Orthostatic test for at least three mornings a week**

When recovery feedback is set on, the watch asks you to schedule an Orthostatic test for at least three mornings per week (e.g. on Mondays, Thursdays and Saturdays). For the most accurate recovery information, we recommend you take the Orthostatic test every morning if possible. By doing this you'll get your cardio system's recovery information every day in addition to daily recovery feedback.

### **3. Take the Orthostatic test on the scheduled mornings**

The Orthostatic test measures your heart rate and heart rate variability (HRV). Heart rate variability is responsive to training overload and to stress outside of training. It's affected by stress factors such as mental stress, sleep, latent illness and environmental changes (temperature, altitude) to mention a few. Recovery Pro uses your resting heart rate variability (RMSSD rest) and standing heart rate variability (RMSSD stand) measured with the test and compares them to your individual normal range. If your heart rate variability values deviate from your normal range, this could mean that something is interfering with your recovery.

Your normal range is calculated from your individual mean and standard deviation of your test results from the past four weeks. If you've taken the test more than four times during this period, standard deviation is calculated based on your own individual values. If you've taken the test less than four times during the past four weeks, the standard deviation is calculated based on population norms. At least one test result is needed during this four-week period.

The more frequently you take the test, the more accurate the results are. To make sure that your results are as reliable as possible, perform the test in similar conditions every time – we recommend that you take the test in the morning before breakfast.

In the evening before a scheduled test you'll get a reminder about it. On the scheduled mornings, you'll get a notification to take the test. From the time view on your watch, swipe up from the bottom of the display to view your notifications which include your Orthostatic test reminder. The test can be started directly from the reminder. See detailed instructions for taking the Orthostatic test [here](#).

### **4. Answer the recovery questions daily**



Your watch will ask the recovery questions via a reminder every day, whether there is an Orthostatic test scheduled for the day or not. From the time view on your watch, swipe up from the bottom of the display to view your notifications which include your recovery question reminder. On days you have an Orthostatic test, the recovery questions pop up on your watch straight after the test. The questions can also be answered on the Flow mobile app. Ideally, they should be answered about 30 minutes after waking up.

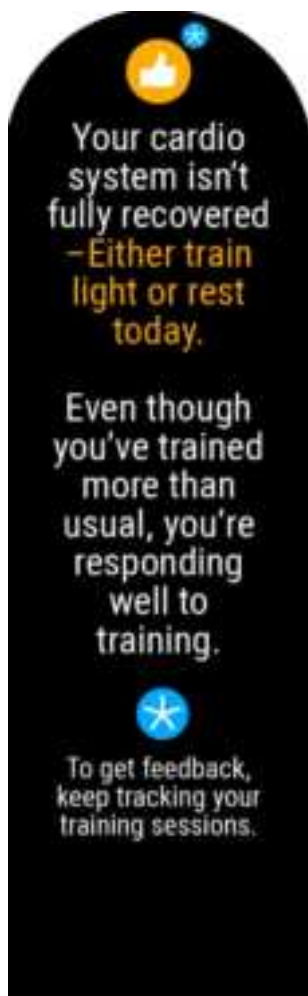
The questions are designed to help establish if anything is affecting your recovery. Some examples of factors affecting recovery are excessive muscle fatigue, mental pressure or maybe just a bad night's sleep. See the recovery questions below:

- **Are your muscles more sore than usual? No, Somewhat, Much more**
- **Are you feeling more strained than usual? No, Somewhat, Much more**
- **How did you sleep? Very well, Well, Okay, Poorly, Very poorly.**

#### **VIEW YOUR RECOVERY FEEDBACK**

Recovery feedback is viewed on your watch. You can conveniently see your daily training recommendation on the Cardio Load status view on your watch face. Swipe left/right or scroll with the UP/DOWN buttons until you reach it.

1. Press the display or press the OK button to see more details. First, you'll see your Cardio Load status (Detraining, Maintaining, Productive or Overreaching), which is a part of Training Load Pro. When you've gathered enough recovery data you'll see your daily training recommendation on this view.
2. Swipe or scroll down with the buttons to Recovery feedback. Tap More or press the OK button to view more detailed recovery feedback. It's made up of:



An icon illustrating your readiness for cardio training today that reflects the daily training recommendation stating how we advise you to train. An increased injury or illness alert icon replaces the training advice icon when your risk for injury or illness is increased. The short training advice can be:

Daily feedback stating if your cardio system is recovered or not\*, followed by your daily training recommendation based on that day's Orthostatic test result, and if available, your recovery question answers and your history for these together with your training data (Cardio Load) over a longer period of time. The recommendation can contain a warning about an increased risk of overtraining, or it can alert you about an increased injury and illness risk.

\*To know if your cardio system is recovered or not you need to perform the Orthostatic test on that day.

Feedback about your long-term training habits and recovery. This can contain information about how you're responding to training, if you've been training more than or less than usual or if you're at risk to

get injured or fall ill because you've been training more than usual. It can also contain feedback if you seem to have too much stress from something else than training. Your long-term feedback is based on:

- Your average mood score of past of the seven days calculated from your perceived recovery question answers
- Your seven-day rolling average of your heart rate variability values measured with the Orthostatic test compared to your individual normal values from the past four weeks
- Your training history (Cardio Load status)

A disclaimer if we don't have enough data yet to give you accurate feedback. The more you use this feature the more accurate recovery feedback you'll get.

## ORTHOSTATIC TEST

The Orthostatic test is a generally used tool for monitoring the balance between training and recovery. It allows you to track how your body responds to training. In addition to training induced changes, there are many other factors that can affect your Orthostatic test results, such as mental stress, sleep, latent illness and environmental changes (temperature, altitude) to mention a few.

The test is based on measuring heart rate and heart rate variability. Changes in heart rate and heart rate variability reflect changes in the autonomic regulation of the heart.

## PERFORMING THE TEST

For the Orthostatic test, you need to use a Polar H10 heart rate sensor (an H6 or H7 heart rate sensor can also be used if you have one). The test lasts for four minutes, and to make sure that your results are as reliable as possible, you need to perform the test in similar conditions every time – we recommend that you take the test in the morning before breakfast. Do the test regularly to establish your individual baseline. Sudden deviations from your averages could signify that something is off-balance. See the instructions below:

- Wear the heart rate sensor with the strap. Moisten the electrode area of the strap and wear the strap snugly around your chest.
- You should be relaxed and calm.
- There should be no disturbing noises (for example, television, radio or telephone) or other people talking to you.
- It is recommended to perform the test regularly and at the same time of day in the morning after waking up to get comparable test results.

On your watch, choose **Orthostatic test > Start the test with HR sensor**. The watch starts searching for your heart rate. When your heart rate is found **Lie down & relax** is shown on the display.

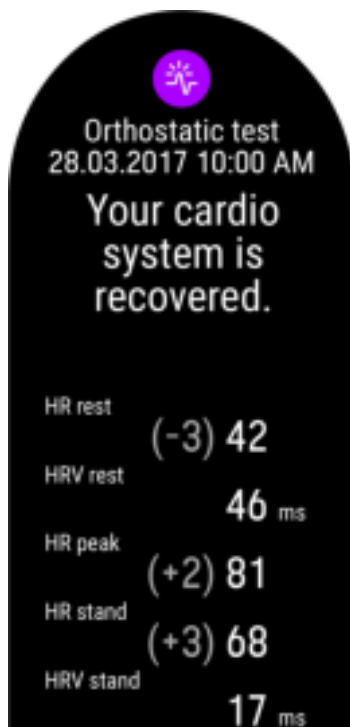
- You can be seated in a relaxed position or lying in bed. The position should always be the same when you do the test.
- Do not move during this first part of the test, which lasts for two minutes.
- After two minutes, the watch will beep and Stand up is displayed. Stand up and remain standing for another two minutes until the watch will beep again, and the test is finished.

You can interrupt the test in any phase by pressing BACK. Test canceled is then displayed.

If your watch cannot receive your heart rate signal, Test failed is displayed. In which case, you should check that the heart rate sensor electrodes are wet, and that the textile strap fits snugly.

## Test results

The test gives you five different heart rate and heart rate variability values. These are:



- HR rest: Average heart rate when lying down
- HRV rest (RMSSD rest): Heart rate variability when lying down
- HR peak: This is the one highest heartbeat that occurs after you stand up.
- HR stand: Average heart rate when standing still.
- HRV stand (RMSSD stand): Heart rate variability when standing still

View your latest test result on your watch in **Orthostatic test > Latest results**. Only your most recent result is shown, and only your first successful test for the day is taken into account as a part of Recovery

Pro. The difference of your HR rest, HR peak and HR stand values to your averages are shown in parentheses next to your latest result.

For a visual analysis of your Orthostatic test results, go to the Flow web service and choose the test from your Diary to view details from it. You can also follow your test results in the long-term and spot any deviations from your baseline.



When you've performed at least two Orthostatic tests during 28-day period, you'll get feedback on your cardio system's recovery on your watch after the test. The feedback is based on your heart rate variability values compared to population norms.

After performing at least four tests in a 28-day period your latest Orthostatic test result is compared to your individual normal heart rate variability (RMSSD) range. Your normal range is calculated from the standard deviation of the test results from the past 4 weeks. As heart rate variability values are very individual, the accuracy of the test result becomes more accurate the more measurements are done.

## ORTHOSTATIC TEST WITH RECOVERY PRO

The Orthostatic test is also an integral part of the [Recovery Pro](#) feature in Vantage V that tells if your cardiovascular system is recovered or not. It compares your Orthostatic test results to your baseline gathered over time, and also takes into account your subjective recovery, as well as your long-term training history.

## RUNNING POWER FROM THE WRIST

Running power is a great complement to heart rate monitoring – it helps you monitor the external load of your running. Power responds to changes in intensity faster than your heart rate, which is why Running Power is a great guiding metric in interval and hill sessions. You can also use it to maintain a steady effort level during your run, for example in a race.

The calculation is done with Polar's proprietary algorithm, and it is based on your GPS and barometer data. Your weight also affects the calculation, so make sure it's up-to-date.

## RUNNING POWER AND MUSCLE LOAD

Polar uses running power to calculate Muscle load, one parameter of [Training Load Pro](#). Running causes musculoskeletal stress, and Muscle load tells you how much your muscles and joints were strained during your training session. It shows the amount of mechanical work (kJ) that you produced during your running sessions (and cycling sessions if you're using a cycling power meter). Muscle load helps you quantify your training load in high-intensity running training sessions, such as short intervals, sprints and hill sessions, when your heart rate doesn't have enough time to react to the changes in the intensity.

## HOW RUNNING POWER IS SHOWN ON YOUR WATCH

Running power is automatically calculated for your running sessions done with running type sport profiles with GPS available.

Choose the power data you want to view during your sessions by customizing your training views in the Flow web service sport profile settings.

During your run you can view the following data:



- Maximum power
- Average power
- Lap power
- Maximum lap power
- Automatic lap power average
- Automatic lap power maximum

Choose how power is shown during sessions and in the Flow web service and app:

- Watts W
- Watts per kilogram W/kg
- Percentage of MAP (% of MAP)

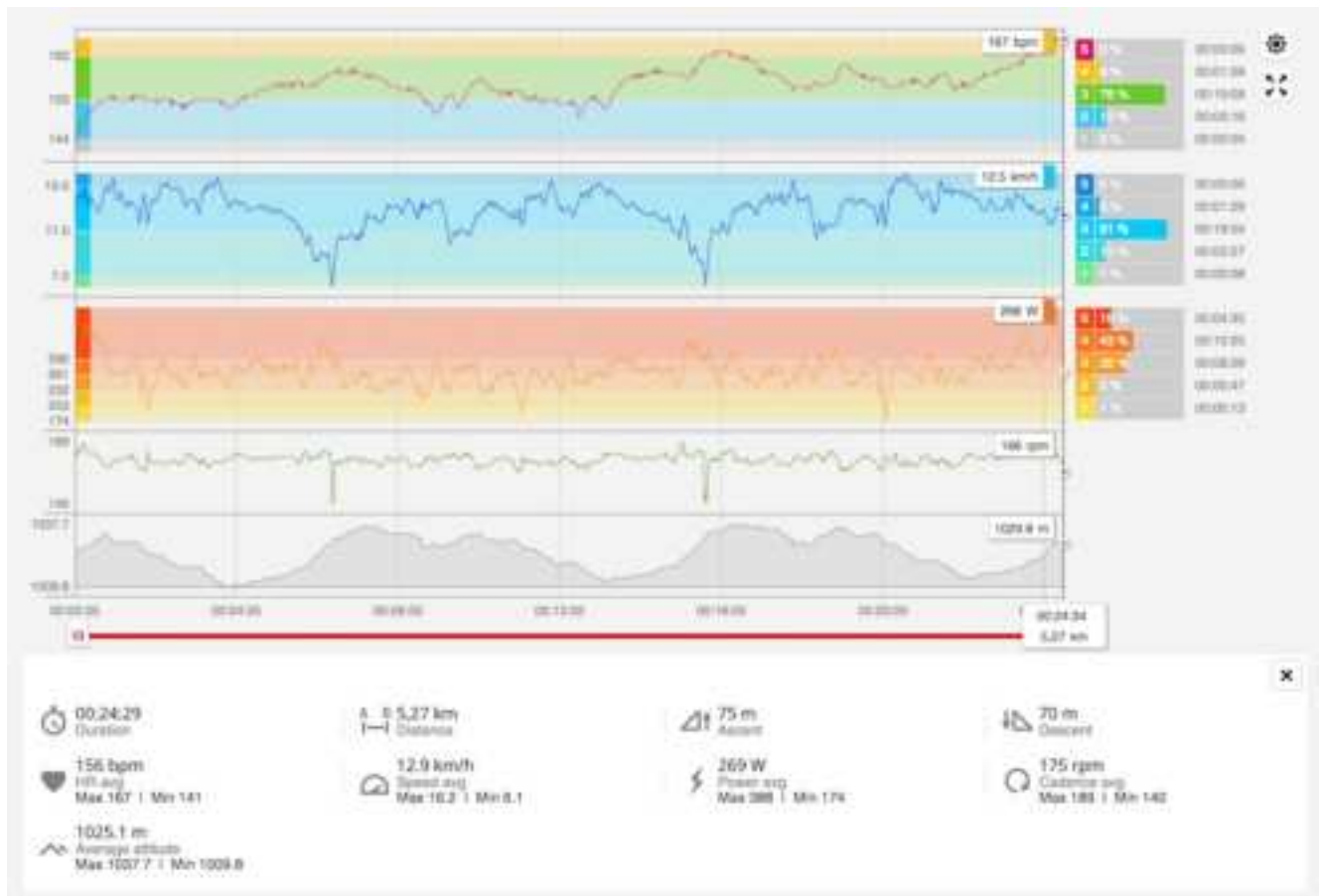
After your session in the training summary on your watch you'll see:



- Your average power as Watts
- Your maximum power as Watts
- Muscle Load
- Time spent in power zones

### How running power is shown in the Polar web service and app

Detailed graphs for analysis are available in the Flow web service and app. See your power values from your session, and how they were distributed compared to heart rate, and how incline, decline and different speeds affected them.



## POLAR RUNNING PROGRAM

Polar Running program is a personalized program based on your fitness level, designed to make sure that you train right and avoid overreaching. It's intelligent, and adapts based on your development, and lets you know when it might be a good idea to cut back a little and when to step it up a notch. Each program is tailored for your event, taking your personal attributes, training background and preparation time into account. The program is free, and available in the Polar Flow web service at [www.polar.com/flow](http://www.polar.com/flow).

Programs are available for 5k, 10k, half marathon and marathon events. Each program has three phases: Base building, Build-up and Tapering. These phases are designed to gradually develop your performance, and make sure you're ready on race day. Running training sessions are divided into five types: easy jog, medium run, long run, tempo run and interval. All sessions include warm-up, work, and cool-down phases for optimal results. In addition, you can choose to do strength, core, and mobility exercises to support your development. Each training week consists of two to five running sessions, and the total running training session duration per week varies from one to seven hours depending on your fitness level. The minimum duration for a program is 9 weeks, and the maximum is 20 months.



Learn more about the Polar Running Program in this [in-depth guide](#). Or read more about how to [get started with the Running Program](#).

To see a video, click on one of the following links:

[Get Started](#)

[How to use](#)

## CREATE A POLAR RUNNING PROGRAM

1. Log into the Flow web service at [www.polar.com/flow](http://www.polar.com/flow).
2. Choose **Programs** from the Tab.
3. Choose your event, name it, set the event date, and when you wish to start the program.
4. Fill in the physical activity level questions.\*
5. Choose if you want to include supporting exercises in the program.
6. Read and fill in the physical activity readiness questionnaire.
7. Review your program, and adjust any settings if necessary.
8. When you're done, choose **Start program**.

\*If four weeks of training history is available, these will be pre-filled.

## START A RUNNING TARGET

Before starting a session, make sure you've synced your training session target to your device. The sessions are synced to your device as training targets.

To start a training target scheduled for the current day:

1. Enter the pre-training mode by pressing and holding OK in time view.
2. You'll be prompted to start a training target you've scheduled for the day.



3. Press OK to view the target information.
4. Press OK to return to pre-training mode, and choose the sport profile you want to use.

5. When the watch has found all the signals, press OK. **Recording started** is displayed and you can start training.

## FOLLOW YOUR PROGRESS

Sync your training results from your device to the Flow web service via the USB cable or Flow app. Follow your progress from the **Programs** tab. You'll see an overview of your current program, and how you've progressed.

## RUNNING INDEX

Running Index offers an easy way to monitor running performance changes. The Running index score is an estimate of your maximal aerobic running performance (VO2max). By recording your Running Index over time, you see how efficient your running is and how you improve your running performance. Improvement means that running at a given pace requires less of an effort, or that your pace is faster at a given level of exertion.

To receive the most accurate information on your performance, make sure you have set your HR<sub>max</sub> value.

Running Index is calculated during every training session when heart rate is measured and the GPS function is on/Stride Sensor is in use, and when the following requirements apply:

- Sport profile used is a running type sport (Running, Road Running, Trail running etc.)
- Speed should be 6 km/h / 3,75 mi/h or faster and duration 12 minutes minimum

Calculation begins when you start recording the session. During a session, you may stop twice, for example, at traffic lights without interrupting the calculation.

 You can view your Running Index in the summary of your training session on your watch. Follow your progress and see race time estimations in the [Polar Flow web service](#).

Compare your result to the table below.

## SHORT-TERM ANALYSIS

### Men

Age/Years	Very low	Low	Fair	Moderate	Good	Very good	Elite
20-24	< 32	32-37	38-43	44-50	51-56	57-62	> 62

Age/Years	Very low	Low	Fair	Moderate	Good	Very good	Elite
25-29	< 31	31-35	36-42	43-48	49-53	54-59	> 59
30-34	< 29	29-34	35-40	41-45	46-51	52-56	> 56
35-39	< 28	28-32	33-38	39-43	44-48	49-54	> 54
40-44	< 26	26-31	32-35	36-41	42-46	47-51	> 51
45-49	< 25	25-29	30-34	35-39	40-43	44-48	> 48
50-54	< 24	24-27	28-32	33-36	37-41	42-46	> 46
55-59	< 22	22-26	27-30	31-34	35-39	40-43	> 43
60-65	< 21	21-24	25-28	29-32	33-36	37-40	> 40

### Women

Age/Years	Very low	Low	Fair	Moderate	Good	Very good	Elite
20-24	< 27	27-31	32-36	37-41	42-46	47-51	> 51
25-29	< 26	26-30	31-35	36-40	41-44	45-49	> 49
30-34	< 25	25-29	30-33	34-37	38-42	43-46	> 46
35-39	< 24	24-27	28-31	32-35	36-40	41-44	> 44
40-44	< 22	22-25	26-29	30-33	34-37	38-41	> 41
45-49	< 21	21-23	24-27	28-31	32-35	36-38	> 38
50-54	< 19	19-22	23-25	26-29	30-32	33-36	> 36
55-59	< 18	18-20	21-23	24-27	28-30	31-33	> 33
60-65	< 16	16-18	19-21	22-24	25-27	28-30	> 30

The classification is based on a literature review of 62 studies where  $VO_{2max}$  was measured directly in healthy adult subjects in the USA, Canada and 7 European countries. Reference: Shvartz E, Reibold RC. Aerobic fitness norms for males and females aged 6 to 75 years: a review. Aviat Space Environ Med; 61:3-11, 1990.

There may be some daily variation in the Running Indexes. Many factors influence Running Index. The value you receive on a given day is affected by changes in running circumstances, for example different surface, wind or temperature, in addition to other factors.

## LONG-TERM ANALYSIS

The single Running Index values form a trend that predicts your success in running certain distances. You can find your Running Index report in the Polar Flow web service under the **PROGRESS** tab. The report shows you how your running performance has improved over a longer time period. If you're using the [Polar Running program](#) to train for a running event, you can follow your Running Index progress to see how your running is improving towards the goal.

The following chart estimates the duration that a runner can achieve in certain distances when performing maximally. Use your long-term Running Index average in the interpretation of the chart. The prediction is best for those Running Index values that have been received at speed and running circumstances similar to the target performance.

Running Index	Cooper test (m)	5 km (h:m-m:ss)	10 km (h:m-m:ss)	21.098 km (h:mm:ss)	42.195 km (h:mm:ss)
36	1800	0:36:20	1:15:10	2:48:00	5:43:00
38	1900	0:34:20	1:10:50	2:38:00	5:24:00
40	2000	0:32:20	1:07:00	2:29:30	5:06:00
42	2100	0:30:40	1:03:30	2:21:30	4:51:00
44	2200	0:29:10	1:00:20	2:14:30	4:37:00
46	2300	0:27:50	0:57:30	2:08:00	4:24:00
48	2400	0:26:30	0:55:00	2:02:00	4:12:00
50	2500	0:25:20	0:52:40	1:57:00	4:02:00
52	2600	0:24:20	0:50:30	1:52:00	3:52:00
54	2700	0:23:20	0:48:30	1:47:30	3:43:00
56	2800	0:22:30	0:46:40	1:43:30	3:35:00
58	2900	0:21:40	0:45:00	1:39:30	3:27:00
60	3000	0:20:50	0:43:20	1:36:00	3:20:00
62	3100	0:20:10	0:41:50	1:32:30	3:13:00
64	3200	0:19:30	0:40:30	1:29:30	3:07:00
66	3300	0:18:50	0:39:10	1:26:30	3:01:00
68	3350	0:18:20	0:38:00	1:24:00	2:55:00
70	3450	0:17:50	0:36:50	1:21:30	2:50:00

Running Index	Cooper test (m)	5 km (h:m-m:ss)	10 km (h:m-m:ss)	21.098 km (h:mm:ss)	42.195 km (h:mm:ss)
72	3550	0:17:10	0:35:50	1:19:00	2:45:00
74	3650	0:16:40	0:34:50	1:17:00	2:40:00
76	3750	0:16:20	0:33:50	1:14:30	2:36:00
78	3850	0:15:50	0:33:00	1:12:30	2:32:00

## TRAINING BENEFIT

Training Benefit gives you textual feedback on the effect of each training session helping you to better understand the effectiveness of your training. **You can see the feedback in Flow app and Flow web service.** To get the feedback, you need to have trained at least a total of 10 minutes in the [heart rate zones](#).

Training Benefit feedback is based on heart rate zones. It reads into how much time you spend and how many calories you burn in each zone.

The descriptions of different training benefit options are listed in the table below

Feedback	Benefit
Maximum training+	What a session! You improved your sprint speed and the nervous system of your muscles, which make you more efficient. This session also increased your resistance to fatigue.
Maximum training	What a session! You improved your sprint speed and the nervous system of your muscles, which make you more efficient.
Maximum & Tempo training	What a session! You improved your speed and efficiency. This session also significantly developed your aerobic fitness and your ability to sustain high intensity effort for longer.
Tempo & Maximum training	What a session! You significantly improved your aerobic fitness and your ability to sustain high intensity effort for longer. This session also developed your speed and efficiency.
Tempo training+	Great pace in a long session! You improved your aerobic fitness, speed, and ability to sustain high intensity effort for longer. This session also increased your resistance to fatigue.
Tempo training	Great pace! You improved your aerobic fitness, speed, and ability to sustain high intensity effort for longer.
Tempo & Steady state training	Good pace! You improved your ability to sustain high intensity effort for longer. This session also developed your aerobic fitness and the endurance of your

Feedback	Benefit
	muscles.
Steady state & Tempo training	Good pace! You improved your aerobic fitness and the endurance of your muscles. This session also developed your ability to sustain high intensity effort for longer.
Steady state training +	Excellent! This long session improved the endurance of your muscles and your aerobic fitness. It also increased your resistance to fatigue.
Steady state training	Excellent! You improved the endurance of your muscles and your aerobic fitness.
Steady state & Basic training, long	Excellent! This long session improved the endurance of your muscles and your aerobic fitness. It also developed your basic endurance and your body's ability to burn fat during exercise.
Steady state & Basic training	Excellent! You improved the endurance of your muscles and your aerobic fitness. This session also developed your basic endurance and your body's ability to burn fat during exercise.
Basic & Steady state training, long	Great! This long session improved your basic endurance and your body's ability to burn fat during exercise. It also developed the endurance of your muscles and your aerobic fitness.
Basic & Steady state training	Great! You improved your basic endurance and your body's ability to burn fat during exercise. This session also developed the endurance of your muscles and your aerobic fitness.
Basic training, long	Great! This long, low intensity session improved your basic endurance and your body's ability to burn fat during exercise.
Basic training	Well done! This low intensity session improved your basic endurance and your body's ability to burn fat during exercise.
Recovery training	Very nice session for your recovery. Light exercise like this allows your body to adapt to your training.

## SMART CALORIES

The most accurate calorie counter on the market calculates the number of calories burned based on your individual data:

- Body weight, height, age, gender
- Individual maximum heart rate ( $HR_{max}$ )
- The intensity of your training or activity
- Individual maximal oxygen uptake ( $VO2_{max}$ )

The calorie calculation is based on an intelligent combination of acceleration and heart rate data. The calorie calculation measures your training calories accurately.

You can see your cumulative energy expenditure (in kilocalories, kcal) during training sessions, and your total kilocalories of the session afterwards. You can also follow your total daily calories.

## CONTINUOUS HEART RATE

The Continuous Heart Rate feature measures your heart rate around the clock. It enables a more accurate measurement of daily calorie consumption and your overall activity because also physical activities with very little wrist movement, such as cycling, can now be tracked.


Polar's Continuous Heart Rate tracking starts every few minutes or based on your wrist movements.

The timed measurement checks your heart rate every few minutes and if your heart rate is elevated during the check, the Continuous Heart Rate feature starts to track your heart rate. Continuous Heart Rate tracking can also start based on your wrist movements, for example, when you're walking with a fast enough pace for at least one minute.

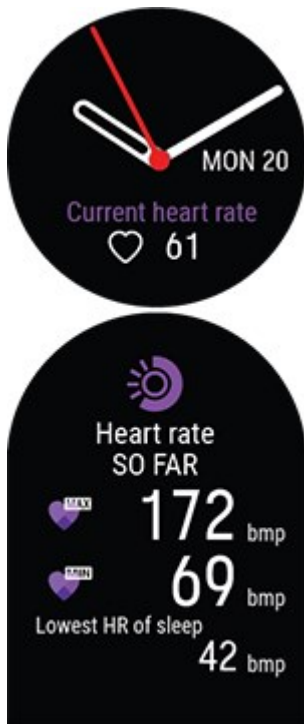
The continuous tracking of your heart rate stops automatically when your activity level drops low enough. When your Polar device detects that you've been sitting for a long time, the Continuous Heart Rate tracking starts in order to find the lowest heart rate reading of your day.

### Continuous Heart Rate on your watch

You can turn the Continuous Heart Rate feature on and off on your watch in **Settings > General settings > Continuous HR tracking**.

 *The feature is off by default. Keeping the Continuous Heart Rate feature on in your watch will drain the battery quicker.*

In time view, use the UP and DOWN buttons to navigate to the Heart Rate watch face.



You'll be able to follow what are the highest and lowest heart rate readings of your day and you can check what your lowest heart rate reading was during the previous night.

You can follow the readings in more detail and in longer periods in Polar Flow, either in web or in the mobile app.

Learn more about the Continuous Heart Rate feature in this [in-depth guide](#).

## **POLAR SLEEP PLUS™**

Your watch tracks your sleep if you wear it at night. It detects when you fall asleep and when you wake up and collects the data for deeper analysis in the Polar Flow app and web service. The watch observes your hand movement during the night to track all interruptions over the entire sleep span, and tells you how much time you actually spent asleep.

### **Sleep data on your watch**

In time view, use the UP and DOWN buttons to navigate to the Sleep watch face.





When your watch detects that you've woken up, it will show your sleep time on the watch face.

You can also manually stop the sleep tracking. **Already awake?** is shown on the sleep watch face when your watch has detected at least four hours of sleep. Press OK to tell the watch that you're awake, choose **Stop tracking your sleep** and the watch summarizes your sleep instantly.

Open your sleep summary by pressing OK. The sleep summary view displays the following information:

- When you **Fell asleep** and when you **Woke up**.
- **Sleep time** tells you the total duration between when you fell asleep and when you woke up.
- **Actual sleep** tells the time spent asleep between the time you fell asleep and when you woke up. More specifically, it is your sleep time minus the interruptions. Only the time you actually spend asleep is included in actual sleep.
- **Continuity:** Sleep continuity is a rating of how continuous your sleep time was. Sleep continuity is evaluated on a scale from one to five: fragmented – fairly fragmented – fairly continuous – continuous – very continuous.
- **Sleep breakdown:** Illustration of your actual sleep time and sleep interruptions in proportion to your preferred sleep time.
- **Feedback:** You'll get feedback on the duration and quality of your sleep. Feedback on duration is based on comparing your sleep time to your preferred sleep time.
- **How did you sleep?:** You can rate how well you've slept last night with a five-step scale: very well - well – okay - poorly - very poorly. By rating your sleep, you get a longer version of textual feedback in the Flow app and web service. The feedback in the Flow app and web service takes into account your own subjective rating of your sleep and modifies the feedback based on it.

## Sleep data in the Flow app and web service

Your sleep data is shown in the Flow app and web service after your watch is synced. You can view the timing, amount, and quality of your sleep. You can set **Your preferred sleep time** to define how long you aim to sleep every night. You can also rate your sleep in the Flow app and web service. You will receive feedback on how you slept based on your sleep data, your preferred sleep time and your sleep rating.

In the Flow web service, you can view your sleep under the **Sleep** tab in your **Diary**. You can also include your sleep data to **Activity reports** under the **Progress** tab.

By following your sleep patterns you can see if they're affected by any changes in your daily life and find the right balance between rest, daily activity and training.

Learn more about the Polar Sleep Plus in this [in-depth guide](#).

## 24/7 ACTIVITY TRACKING

The Polar Vantage V tracks your activity with an internal 3D accelerometer that records your wrist movements. It analyzes the frequency, intensity and regularity of your movements together with your physical information, allowing you to see how active you really are in your everyday life, on top of your regular training. You should wear your watch on your non-dominant hand to ensure you get the most accurate activity tracking.

### ACTIVITY GOAL

You'll get your personal activity goal when you set up your watch. The activity goal is based on your personal data and activity level setting, which you can find in the Polar Flow app or in the [Polar Flow web service](#).

If you want to change your goal, open your Flow app, tap your name/profile photo in the menu view, and swipe down to see **Activity goal**. Or go to [flow.polar.com](https://flow.polar.com) and sign in to your Polar account. Then click your name > **Settings** > **Activity goal**. Choose one of the three activity levels that best describes your typical day and activity. Below the selection area, you can see how active you need to be to reach your daily activity goal on the chosen level.

The time you need to be active during the day to reach your activity goal depends on the level you have chosen and the intensity of your activities. Meet your goal faster with more intense activities or stay active at a slightly more moderate pace throughout the day. Age and gender also affect the intensity you need to reach your activity goal. The younger you are, the more intense your activity needs to be.

## ACTIVITY DATA ON YOUR WATCH

In time view, use the UP and DOWN buttons to navigate to the Activity watch face.



The circle around the watch face and the percentage below time and date show your progress towards your daily activity goal. The circle fills with light blue color as you are active.



In addition, you can see the following details of your day's accumulated activity:

- Steps you've taken so far. The amount and type of body movements are registered and turned into an estimation of steps.
- Active time tells you the cumulative time of body movements that benefit your health.
- Calories you've burned through training, activity and BMR (Basal metabolic rate: the minimum metabolic activity required to maintain life).

## ACTIVITY DATA IN FLOW APP AND FLOW WEB SERVICE

With Flow app you can follow and analyze your activity data on the go and sync it wirelessly from your watch to the Flow web service. The Flow web service gives you the most detailed insight into your activity information. With the help of the activity reports (under the **PROGRESS** tab), you can follow the long-term trend of your daily activity. You can choose to view either daily, weekly or monthly reports.

Learn more about the 24/7 Activity tracking feature in this [in-depth guide](#).

## ACTIVITY GUIDE

The Activity Guide feature shows how active you've been during the day, and tells you how much you need to still do to reach the recommendations for physical activity per day. You can check how you're doing in reaching your activity goal for the day either from your watch, from the Polar Flow app or web service.

For more information, see [24/7 Activity Tracking](#).

## ACTIVITY BENEFIT

Activity benefit gives you feedback on the health benefits that being active has given you, and also on what kind of unwanted effects sitting for too long has caused for your health. The feedback is based on international guidelines and research on the health effects of physical activity and sitting behavior. The core idea is: the more active you are, the more benefits you get!

Both Flow app and Flow web service show the activity benefit of your daily activity. You can view the activity benefit on daily, weekly and monthly basis. In the Flow web service, you can also view the detailed information on health benefits.



For more information, see [24/7 Activity Tracking](#).

## SPORT PROFILES

Sport profiles are the sport choices you have on your watch. We have created four default sport profiles to your watch, but you can add new sport profiles to your use in the Polar Flow app or web service and sync them to your watch, and this way create a list of all your favorite sports.

You can also define specific settings for each sport profile. For example, you can create tailored **training views** for each sport you do and choose what data you want to see when you train: just your heart rate or just speed and distance—whatever suits you and your training needs and requirements best.



You can have a maximum of 20 sport profiles on your watch at a time. The number of sport profiles in Polar Flow mobile app and Polar Flow web service is not limited.




For more information, see [Sport Profiles in Flow](#).

Using the sport profiles makes it possible for you to keep up with what you've done and to see the progress you've made in different sports. See your training history and follow your progress in the [Flow web service](#).

## HEART RATE ZONES

Polar heart rate zones introduce a new level of effectiveness in heart rate-based training. Training is divided into five heart rate zones based on percentages of maximum heart rate. With heart rate zones, you can easily select and monitor training intensities.

Target zone	Intensity % of $HR_{max}^*$	Example: Heart rate zones**	Example durations	Training effect
<b>MAXIMUM</b>  	90–100%	171–190 bpm	less than 5 minutes	<b>Benefits:</b> Maximal or near maximal effort for breathing and muscles.  <b>Feels like:</b> Very exhausting for breathing and muscles.  <b>Recommended for:</b> Very experienced and fit athletes. Short intervals only, usually in final preparation for short events.
<b>HARD</b>  	80–90%	152–172 bpm	2–10 minutes	<b>Benefits:</b> Increased ability to sustain high speed endurance.  <b>Feels like:</b> Causes muscular fatigue and heavy breathing.  <b>Recommended for:</b> Experienced athletes for year-round training, and for various durations. Becomes more important during pre competition season.
<b>MODERATE</b>	70–80%	133–152 bpm	10–40 minutes	<b>Benefits:</b> Enhances general training pace, makes moderate intensity efforts easier and improves efficiency.  <b>Feels like:</b> Steady, controlled, fast breathing.

Target zone	Intensity % of HR <sub>max</sub> *	Example: Heart rate zones**	Example durations	Training effect
				<b>Recommended for:</b> Athletes training for events, or looking for performance gains.
<b>LIGHT</b> 	60–70%	114–133 bpm	40–80 minutes	<b>Benefits:</b> Improves general base fitness, improves recovery and boosts metabolism.  <b>Feels like:</b> Comfortable and easy, low muscle and cardiovascular load.  <b>Recommended for:</b> Everybody for long training sessions during base training periods and for recovery exercises during competition season.
<b>VERY LIGHT</b> 	50–60%	104–114 bpm	20–40 minutes	<b>Benefits:</b> Helps to warm up and cool down and assists recovery.  <b>Feels like:</b> Very easy, little strain.  <b>Recommended for:</b> For recovery and cool-down, throughout training season.

\* HR<sub>max</sub> = Maximum heart rate (220-age).

\*\* Heart rate zones (in beats per minute) for a 30-year-old person, whose maximum heart rate is 190 bpm (220–30).

Training in heart rate zone 1 is done at a very low intensity. The main training principle is that performance improves when recovering after, and not only during training. Accelerate the recovery process with very light intensity training.

Training in heart rate zone 2 is for endurance training, an essential part of any training program. Training sessions in this zone are easy and aerobic. Long-duration training in this light zone results in effective energy expenditure. Progress will require persistence.

Aerobic power is enhanced in heart rate zone 3. The training intensity is higher than in sport zones 1 and 2, but still mainly aerobic. Training in sport zone 3 may, for example, consist of intervals followed by recovery. Training in this zone is especially effective for improving the efficiency of blood circulation in the heart and skeletal muscles.

If your goal is to compete at top potential, you will have to train in heart rate zones 4 and 5. In these zones, you exercise anaerobically in intervals of up to 10 minutes. The shorter the interval, the higher the intensity. Sufficient recovery between intervals is very important. The training pattern in zones 4 and 5 is designed to produce peak performance.

The Polar target heart rate zones can be personalized by using a laboratory measured HRmax value, or by taking a field test to measure the value yourself. You can edit the heart rate zone limits separately on each sport profile you have on your Polar account in the Polar Flow web service.

When training in a target heart rate zone, try to make use of the entire zone. The mid-zone is a good target, but keeping your heart rate at that exact level all the time is not necessary. Heart rate gradually adjusts to training intensity. For instance, when crossing from heart rate target zone 1 to 3, the circulatory system and heart rate will adjust in 3-5 minutes.

Heart rate responds to training intensity depending on factors such as fitness and recovery levels, as well as environmental factors. It is important to look out for subjective feelings of fatigue, and to adjust your training program accordingly.

## **SPEED ZONES**

With the speed/pace zones you can easily monitor speed or pace during your session, and adjust your speed/pace to achieve the targeted training effect. The zones can be used to guide the efficiency of your training during sessions, and help you mix up your training with different training intensities for optimal effects.

### **SPEED ZONES SETTINGS**

The speed zone settings can be adjusted in the Flow web service. There are five different zones, and zone limits can be manually adjusted or you can use the default ones. They are sport specific, allowing you to adjust the zones to best suit each sport. The zones are available in running sports (including team sports that involve running), cycling sports as well as rowing and canoeing.

#### **Default**

If you choose **Default**, you cannot change the limits. The default zones are an example of speed/pace zones for a person with a relatively high fitness level.

## **Free**

If you choose **Free**, all limits can be changed. For example, if you have tested your actual thresholds, such as anaerobic and aerobic thresholds, or upper and lower lactate thresholds, you can train with zones based on your individual threshold speed or pace. We recommend that you set your anaerobic threshold speed and pace as the minimum for zone 5. If you also use aerobic threshold, set that as the minimum of zone 3.

## **TRAINING TARGET WITH SPEED ZONES**

You can create training targets based on speed/pace zones. After synchronizing the targets via FlowSync, you'll receive guidance from your training device during training.

## **DURING TRAINING**

During your training you can view which zone you are currently training in and the time spent in each zone.

## **AFTER TRAINING**

In the training summary on your watch, you'll see an overview of the time spent in each speed zone. After syncing, detailed visual speed zone information can be viewed in the Flow web service.

## **SPEED AND DISTANCE FROM THE WRIST**

Your watch measures speed and distance from your wrist movements with a built-in accelerometer. This feature comes in handy when running indoors or in places with limited GPS signals. For maximum accuracy make sure you've set your handedness and height correctly. Speed and distance from the wrist works best when running at a pace that is natural and feels comfortable for you.

Wear your watch snugly on your wrist to avoid any shaking. To get consistent readings it should always be worn on the same position on your wrist. Avoid wearing any other devices like watches, activity trackers or phone armbands on the same arm. In addition, do not hold anything in the same hand like a map or a phone.

Speed and distance from the wrist is available in the following running type sports: Walking, Running, Jogging, Road running, Trail running, Treadmill running, Track and field running and Ultra running. To see speed and distance during a training session, make sure you have speed and distance added to the train-



ing view of the sport profile you use when running. This can be done in **Sport Profiles** in the Polar Flow mobile app or in the Flow web service.

## CADENCE FROM THE WRIST

Cadence from the wrist gives you the option to get your running cadence without a separate stride sensor. Your cadence is measured with a built-in accelerometer from your wrist movements. Please note that when using a stride sensor cadence will always be measured with it.

Cadence from the wrist is available in the following running type sports: Walking, Running, Jogging, Road running, Trail running, Treadmill running, Track and field running and Ultra running.

To see your cadence during a training session, add cadence to the training view of the sport profile you use when running. This can be done in **Sport Profiles** in the Polar Flow mobile app or in the Flow web service.

Read more about [monitoring running cadence](#) and [how to utilize running cadence in your training](#).

## SWIMMING METRICS

Swimming metrics help you analyze each swimming session, and follow your performance and progress in the long run.



*To get the most accurate information, make sure you have set which hand you wear your watch on. You can check that you've set which hand you wear your watch from the product settings in Flow.*

### POOL SWIMMING

When using the Swimming or Pool swimming profile, the watch records your swim distance, time and pace, stroke rate, rest times and also identifies your swimming style. In addition, with the help of the SWOLF score you can keep track of your development.

**Pace and Distance:** The pace and distance measurements are based on pool length, therefore to get accurate data always make sure you have set the correct pool length. Your watch recognizes when you turn, and uses this information to give you accurate pace and distance.

**Strokes:** Your watch tells you how many strokes you take in a minute or per pool length. This information can be used to find out more about your swimming technique, rhythm and timing.

**Swimming Styles:** Your watch recognizes your swimming style, and calculates style specific metrics as well as totals for your whole session. Styles the watch recognizes:

- Freestyle
- Backstroke
- Breaststroke
- Butterfly

**SWOLF** (short for swimming and golf) is an indirect measure of efficiency. SWOLF is calculated by adding together your time and the amount of strokes it takes you to swim a pool length. For instance, 30 seconds and 10 strokes to swim the length of a pool will equal a SWOLF score of 40. Generally, the lower your SWOLF is for a certain distance and style, the more efficient you are.

SWOLF is highly individual, and thus should not be compared to SWOLF scores other people have swam. It's rather a personal tool that can help you improve and fine-tune your technique, and find an optimal efficiency for different styles.

### POOL LENGTH SETTING

It's important that you choose the correct pool length, as it affects pace, distance and stroke calculation, as well as your SWOLF score. You can choose the pool length in pre-training mode from the quick menu. Press LIGHT to access the quick menu, choose the **Pool length** setting and change the previously set pool length if necessary. The default lengths are 25 meters, 50 meters and 25 yards, but you can also set it manually to a custom length. The minimum length that can be chosen is 20 meters/yards.

**When using the Swimming/Pool swimming profile**, check that the pool length is correct. To change the pool length, press LIGHT to access the quick menu, choose **Pool length** setting and set the correct length.

### OPEN WATER SWIMMING

When using the Open water swimming profile, the watch records your swim distance, time and pace, stroke rate for freestyle as well as your route.

 *Freestyle is the only style that the open water swimming profile recognizes.*

**Pace and Distance:** Your watch uses GPS to calculate pace and distance during your swim.

**Stroke rate for freestyle:** Your watch records your average and maximum stroke rates (how many strokes you take per minute) for your session.


**Route:** Your route is recorded with GPS, and you can view it on a map after your swim in the Flow app and web service. GPS does not work underwater, and because of this your route is filtered from GPS data acquired when your hand is out of the water or very close to the water surface. External factors

such as water conditions and satellite positions can affect the accuracy of the GPS data, and as a result data from the same route can vary from day to day.

## MEASURING HEART RATE IN WATER

Your watch automatically measures your heart rate from your wrist with the new Polar Precision Prime sensor fusion technology, offering an easy and comfortable way to measure your heart rate while swimming. Although water may prevent the wrist-based heart rate measurement from working optimally, the accuracy of Polar Precision Prime is sufficient to allow you monitor your average heart rate and heart rate zones during your swimming sessions, get accurate calorie burn readings, your Training Load from the session and the Training Benefit feedback based on your heart rate zones.

To ensure the best possible accuracy of your heart rate data, it's important to wear the watch snugly on your wrist (even more snugly than in other sports). See [Training with wrist based heart rate](#) for instructions on wearing your watch during training.

 *Note that you can't use a Polar heart rate sensor with a chest strap with your watch when swimming because Bluetooth doesn't work in water.*

## START A SWIMMING SESSION

1. Press BACK to enter the main menu, choose **Start training**, and then browse to the **Swimming**, **Pool swimming** or **Open water swimming** profile.
2. **When using the Swimming/Pool swimming profile**, check that the pool length is correct (shown on the display). To change the pool length, press LIGHT to access the **Pool length** setting and set the correct length.
3. Press START to begin training recording.

## DURING YOUR SWIM

You can customize what is shown on the display in the sport profiles section in the Flow web service. The default training views in the swimming sport profiles the following information:

- Your heart rate and the heart rate ZonePointer
- Distance
- Duration
- Rest time (Swimming and Pool swimming)
- Pace (Open water swimming)
- Heart rate graph
- Average heart rate
- Maximum heart rate
- Time of day

## AFTER YOUR SWIM

An overview of your swimming data is available in the training summary on your watch right after your session. You can see the following information:



The date and time when your session started

The duration of the session

Swimming distance



Average heart rate

Maximum heart rate

Cardio Load



Heart rate zones



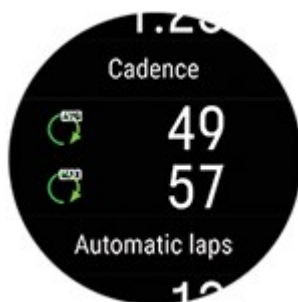
Calories

Fat burn % of calories



Average pace

Maximum pace



Stroke rate (how many strokes you take per minute)

- Average stroke rate
- Maximum stroke rate



Summary by swimming style, which includes:

- Swimming distance
- Average pace (pace/100 meters or pace/100 yards)
- SWOLF (pool swimming)

Sync your watch with Flow for a more detailed visual representation of your swim including a detailed breakdown of your pool swimming sessions, your heart rate, pace and stroke rate curves.

## BAROMETER

The barometer features include altitude, incline, decline, ascent and descent. Altitude is measured with an atmospheric air pressure sensor and converts the measured air pressure into an altitude reading. Ascent and descent are shown in meters/feet.

## PHONE NOTIFICATIONS

The phone notifications feature allows you to get alerts about incoming calls, messages and notifications from apps onto your watch. You'll get the same notifications on your watch that you get on your phone screen. Phone notifications are available for iOS and Android phones.


To use phone notifications, you need to have the Flow app running on your phone, and it also needs to be paired with your watch. For instructions, see [Pairing a mobile device with your watch](#)

## SET PHONE NOTIFICATIONS ON

On your watch go to **Settings > General settings > Phone notifications** to set them on. Set phone notifications **Off** or **On, when not training**. Note that you will not receive any notifications during training sessions.

In the Flow app go to the **Devices** menu, choose your device and make sure **Smart notifications/Phone notifications** are **On**.

After setting the notifications on sync your watch with the Flow app.

 Please note that when phone notifications are set on the battery of your watch and phone will run out faster because Bluetooth is continuously on.

## DO NOT DISTURB

If you want to disable notifications and call alerts for a certain period of time, set do not disturb on. When it is on, you will not receive any notifications or call alerts during the time period you have set.

Choose **Off**, **On** or **On (22.00 - 7.00)**, and the period when do not disturb is on. Choose when it **Starts at** and **Ends at**.

## VIEW NOTIFICATIONS

Whenever you receive a notification your watch will vibrate and a red dot will appear at the bottom of the display. View the notification by swiping up from the bottom of display or by turning your wrist and looking at your watch.

When receiving a call your watch will vibrate and show the caller. You can also answer or decline the call with your watch.

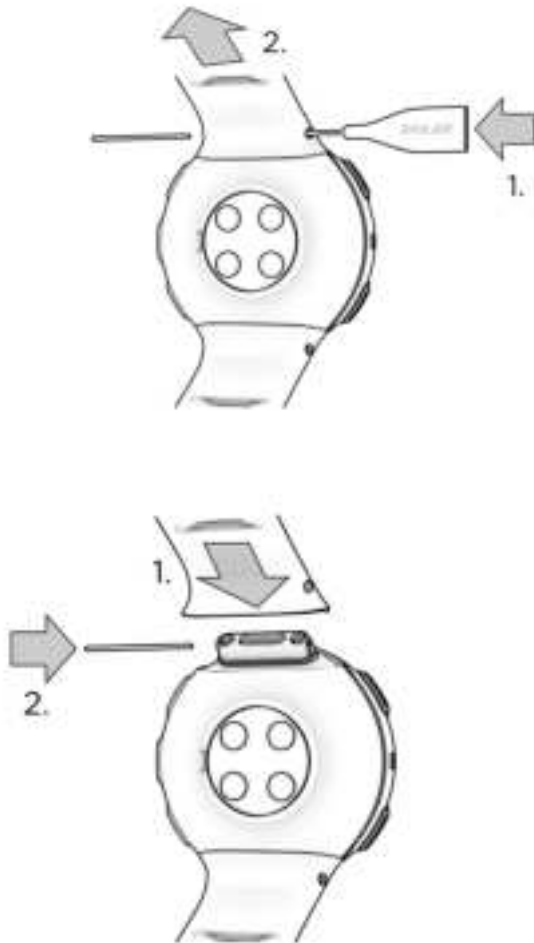
## CHANGEABLE WRISTBANDS

The changeable wristbands let you personalize your watch to match every situation and style so you can wear it all the time and make the best use of the 24/7 activity tracking, continuous heart rate measurement and sleep tracking.

## CHANGING THE WRISTBAND

The wristband of your watch is quick and simple to change.

1. To detach a band, push the pin out of the band with the tool that came in the package, and remove the band.
2. To attach a band, insert the pin from the opposite side into the pin hole on the band, and push it into place.



## COMPATIBLE SENSORS

Enhance your training experience, and achieve a more complete understanding of your performance with compatible Bluetooth® sensors. In addition to a number of Polar sensors your watch is fully compatible with several third-party sensors.

[View a full list of compatible Polar sensors and accessories](#)

[View compatible third-party sensors](#)

Before taking a new sensor into use, it has to be paired with your watch. Pairing only takes a few seconds, and ensures that your watch receives signals from your sensors only, and allows disturbance-free training in a group. Before entering an event or race, make sure that you do the pairing at home to prevent interference due to data transmission. For instructions, see [Pairing sensors with your watch](#).

## **POLAR H10 HEART RATE SENSOR**

Monitor your heart rate with maximum precision with the Polar H10 heart rate sensor with a chest strap.

Although the Polar Precision Prime is the most accurate optical heart rate measurement technology there is and works pretty much anywhere, in sports where it's more challenging to keep the sensor stationary on your wrist or where you have pressure or movement in muscles or tendons near the sensor, the Polar H10 heart rate sensor gives you the best heart rate accuracy. The Polar H10 heart rate sensor is more responsive to rapidly increasing or decreasing heart rate, so it's the ideal option also for interval type of training with quick sprints.

The Polar H10 heart rate sensor has an internal memory that allows you to record one training session with it without a connected training device or a mobile training app close by. You just need to pair the H10 heart rate sensor with the Polar Beat app and start the training session with the app. This way, you can for example record your heart rate from your swimming sessions with the Polar H10 heart rate sensor. For more information see the support pages for [Polar Beat](#) and [Polar H10 heart rate sensor](#).

When using the Polar H10 heart rate sensor during your cycling sessions, you can have your watch mounted to your bike's handlebars to easily view your training data while riding.

## **POLAR SPEED SENSOR BLUETOOTH® SMART**

There are a range of factors that can affect your cycling speed. Obviously fitness is one of them, however, weather conditions and the varying gradients of the road play a huge part too. The most advanced way of measuring how these factors affect your performance speed is with the aerodynamic speed sensor.

- Measures your current, average and maximum speeds
- Track your average speed to see your progress and performance improve
- Light yet tough, and easy to attach

## **POLAR CADENCE SENSOR BLUETOOTH® SMART**

The most practical way of measuring your cycling session is with our advanced wireless cadence sensor. It measures your real-time, average and maximum cycling cadence as revolutions per minute so you can compare the technique of your ride against previous rides.



- Improves your cycling technique and identifies your optimal cadence
- Interference-free cadence data lets you evaluate your individual performance
- Designed to be aerodynamic and light


## **THIRD-PARTY POWER SENSORS**

### **Cycling Power**

Measuring your cycling power helps you to monitor and develop your cycling performance and pedaling technique. Unlike heart rate, power output is an absolute and objective value of effort. This means that you can also compare your power values with your fellow cyclists who are of the same sex and about the same size as you are; or compare watts per kilogram for the most reliable results. Seeing how your heart rate corresponds to the power zones also gives more insight.

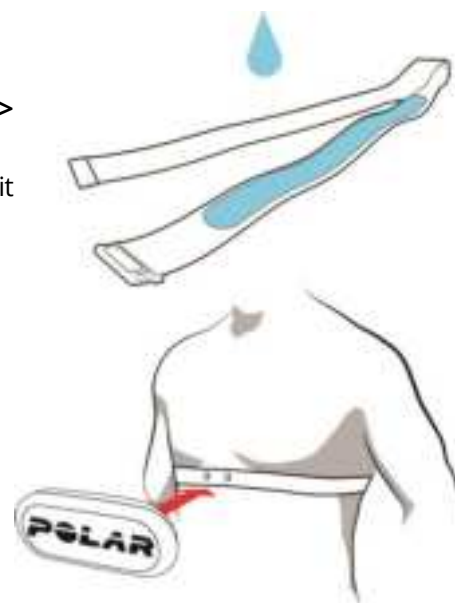
## **PAIRING SENSORS WITH YOUR WATCH**

### **PAIR A HEART RATE SENSOR WITH YOUR WATCH**

 *When you're wearing a Polar heart rate sensor that's paired with your watch, the watch does not measure heart rate from the wrist.*

There are two ways to pair a heart rate sensor with your watch:

1. Wear the moistened heart rate sensor.
2. On your watch, go to **General Settings > Pair and sync > Pair sensor or other device** and press OK.
3. Touch your heart rate sensor with your watch and wait for it to be found.
4. Once the heart rate sensor is found, the device ID, for example, **Polar H10 xxxxxxxx** is displayed. Press OK to start pairing.
5. **Pairing completed** is displayed when you are done.



OR

1. Wear the moistened heart rate sensor.
2. On your watch, press BACK to enter the main menu and choose **Start training** to enter pre-training mode.
3. Touch your heart rate sensor with your watch and wait for it to be found.
4. You'll be prompted to pair your watch with the sensor. Accept the pairing request by pressing OK.
5. **Pairing completed** is shown when you are done.

#### PAIR A RUNNING SENSOR WITH YOUR WATCH


1. On your watch, go to **General Settings > Pair and sync > Pair sensor or other device** and press OK.
2. The watch starts searching for your sensor. Touch your sensor with watch, and wait for it to be found.
3. Once the sensor is found, the device ID is displayed. Press OK to start pairing.
4. **Pairing completed** is displayed when you are done.

OR

1. On your watch, press BACK to enter the main menu and choose **Start training** to enter pre-training mode.
2. Touch your running sensor with your watch and wait for it to be found.
3. You'll be prompted to pair your watch with the sensor. Accept the pairing request by pressing OK.
4. **Pairing completed** is shown when you are done.

#### PAIR A CYCLING SENSOR WITH YOUR WATCH

Before pairing a cadence sensor, speed sensor or a third-party power sensor, make sure they have been correctly installed. For more information on installing the sensors see their user manuals.

 *If you are pairing a third-party power sensor, please make sure that you have the latest firmware both in your watch and the sensor. If you have two power transmitters, you need to pair the transmitters one at a time. After pairing the first transmitter, you can immediately pair the second one. Check the device ID on the backside of each transmitter to make sure you find the correct transmitters from the list.*

1. There are two ways to pair a sensor with your watch:
2. On your watch, go to **General Settings > Pair and sync > Pair sensor or other device** and press OK.
3. The watch starts searching for your sensor. **Cadence sensor:** Rotate the crank a few times to activate the sensor. The flashing red light in the sensor indicates that the sensor is activated. **Speed sensor:** Rotate the wheel a few times to activate the sensor. The flashing red light in the sensor indicates that the sensor is activated. **Third-party power sensor:** Rotate the cranks to wake up the transmitters.
4. Once the sensor is found, the device ID is displayed. Press OK to start pairing.
5. **Pairing completed** is shown when you are done.

OR

1. On your watch, press BACK to enter the main menu and choose **Start training** to enter pre-training mode.
2. The watch starts searching for your sensor. **Cadence sensor:** Rotate the crank a few times to activate the sensor. The flashing red light in the sensor indicates that the sensor is activated. **Speed sensor:** Rotate the wheel a few times to activate the sensor. The flashing red light in the sensor indicates that the sensor is activated. **Third-party power sensor:** Rotate the cranks to wake up the transmitters.
3. You'll be prompted to pair your watch with the sensor. Accept the pairing request by pressing OK.
4. **Pairing completed** is shown when you are done.

## Bike settings

1. **Sensor linked to:** is displayed. Choose **Bike 1**, **Bike 2** or **Bike 3**. Confirm with OK.
2. **Set wheel size** is displayed if you paired a speed sensor or a power sensor that measures speed. Set the size and press OK.
3. **Crank length:** Set the crank length in millimeters. The setting is visible only if you paired a power sensor.

## Measuring wheel size

Wheel size settings are a prerequisite for correct cycling information. There are two ways of determining the wheel size of your bike:

### Method 1

- Measure the wheel manually for the most accurate result.
- Use the valve to mark the point where the wheel touches the ground. Draw a line on the ground to mark that point. Move your bike forward on a flat surface for one complete rotation. The tire should be perpendicular to the ground. Draw another line on the ground at the valve to mark a full rotation. Measure the distance between the two lines.
- Subtract 4 mm to account for your weight on the bike to get your wheel circumference.

## Method 2

Look for the diameter in inches or in ETRTO printed on the wheel. Match it to the wheel size in millimeters in the right column of the chart.

ETRTO	Wheel size diameter (inches)	Wheel size setting (mm)
25-559	26 x 1.0	1884
23-571	650 x 23C	1909
35-559	26 x 1.50	1947
37-622	700 x 35C	1958
52-559	26 x 1.95	2022
20-622	700 x 20C	2051
52-559	26 x 2.0	2054
23-622	700 x 23C	2070
25-622	700 x 25C	2080
28-622	700 x 28	2101
32-622	700 x 32C	2126
42-622	700 x 40C	2189
47-622	700 x 47C	2220



Wheel sizes on the chart are advisory as wheel size depends on the wheel type and air pressure.

## CALIBRATE CYCLING POWER SENSOR

You can calibrate the sensor from the quick menu. First, choose one of the cycling sport profiles and wake up the transmitters by rotating the cranks. Then choose **Calibrate power sensor** from the quick menu and follow the on-screen instructions to calibrate your sensor. For calibration instructions specific to your power sensor, see the manufacturer's instructions.

## DELETE A PAIRING

To delete a pairing with a sensor or mobile device:

1. Go to **Settings > General settings > Pair and sync > Paired devices** and press OK.
2. Choose the device you want to remove from the list and press OK.
3. **Remove pairing?** is displayed. Confirm by pressing OK.
4. **Pairing removed** is displayed when you are done.

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## POLAR FLOW APP

In the Polar Flow mobile app, you can see an instant visual interpretation of your training and activity data. You can also plan your training in the app.

### TRAINING DATA

With the Polar Flow app, you can easily access the information of your past and planned training sessions and create new training targets. You can choose to create a quick target or a phased target.

Get a quick overview of your training, and analyze every detail of your performance right away. See weekly summaries of your training in the training diary. You can also share the highlights of your training with your friends with the "Image sharing" on the next page function.

## ACTIVITY DATA

See details of your 24/7 activity. Find out how much you're missing from your daily activity goal and how to reach it. See steps, covered distance based on steps and burned calories.

## SLEEP DATA

Follow your sleeping patterns to see if they're affected by any changes in your daily life and find the right balance between rest, daily activity and training. With the Polar Flow app, you can view the timing, amount, and quality of your sleep.

You can set your preferred sleep time to define how long you aim to sleep every night. You can also rate your sleep. You'll receive feedback on how you slept based on your sleep data, your preferred sleep time and your sleep rating.

## SPORT PROFILES

You can add, edit, remove and reorganize sport profiles easily in the Flow app. You can have up to 20 sport profiles active in Flow app and in your watch.

For more information, see [Sport profiles in Polar Flow](#).

## IMAGE SHARING

With Flow app's image sharing function you can share images with your training data on them to most common social media channels, like Facebook and Instagram, with your training data on them. You can either share an existing photo or take a new one and customize it with your training data. If you had GPS recording on during your training session, you can also share a snapshot of your training route.

To see a video, click on the following link:

[Polar Flow app | Sharing training results with a photo](#)

## START USING THE FLOW APP

You can [set up your watch](#) using a mobile device and Flow app.

To start using the Flow app, download it from the App Store or Google Play onto your mobile device. For support and more information about using Polar Flow app, go to [support.polar.com/en/support/Flow\\_app](https://support.polar.com/en/support/Flow_app).

Before taking a new mobile device (smartphone, tablet) into use, it has to be paired with your watch. See [Pairing](#) for more details.

Your watch syncs your training data to the Flow app automatically after your session. If your phone has an internet connection, your activity and training data are also synced automatically to the Flow web service. Flow app is the easiest way to sync your training data from your watch with the web service. For information on syncing, see [Syncing](#).

For more information and instructions on Flow app features, visit [Polar Flow app product support page](#).

## POLAR FLOW WEB SERVICE

In the Polar Flow web service, you can plan and analyze your training in detail and learn more about your performance. Set up and customize your watch to perfectly fit your training needs by adding sport profiles and editing their settings. You can also share the highlights of your training with your friends in the Flow community, sign up for your club's classes and get a personalized training program for a running event.

The Polar Flow web service also shows your daily activity goal completion percentage and the details of your activity, and helps you understand how your daily habits and choices affect your well-being.

You can [set up your watch](#) with your computer at [flow.polar.com/start](https://flow.polar.com/start). There you are guided to download and install the FlowSync software for syncing data between your watch and the web service, and to create a user account for the web service. If you did the setup using a mobile device and Flow app, you can log into the Flow web service with the credentials you created in the setup.

### FEED

In **Feed** you can see what you and your friends have been up to lately. Check out the latest training sessions and activity summaries, share your best achievements, comment and like your friends' activities.

### DIARY

In **Diary** you can see your daily activity, sleep, planned training sessions (training targets), as well as review past training results.

### PROGRESS

In **Progress** you can follow your development with reports.



Training reports are a handy way to follow your progress in training over longer periods. In week, month and year reports you can choose the sport for the report. In custom period, you can choose both the period and the sport. Choose the time period and sport for report from the drop-down lists, and press the wheel icon to choose what data you want to view in the report graph.

With the help of the activity reports, you can follow the long-term trend of your daily activity. You can choose to view either daily, weekly or monthly reports. In the activity report you can also see your best days regarding daily activity, steps, calories and sleep from your chosen time period.

The Running Index report is a tool to help you monitor your long term Running Index development, and estimate your success in running 10k or a half marathon for example.

In the Cardio Load report you can follow how your Cardio Load builds up over time and see how your training loads have varied over the past week or months. Following your Cardio Load buildup helps you understand how your past training affects your performance today, plan future training and continue improving your fitness.

## COMMUNITY

In the **Flow Groups, Clubs** and **Events** you can find fellow exercisers who train for the same event or in the same health club as you do. Or you can create your own group for the people you want to train with. You can share your exercises and training tips, comment other members' training results and be part of the Polar Community. In Flow Clubs you can view class schedules and sign up for classes. Join in and get motivation from your social training communities!

To see a video, click on the following link:

[Polar Flow Events](#)

## PROGRAMS

The Polar Running Program is tailored for your goal, based on Polar heart rate zones, taking your personal attributes and training background into account. The program is intelligent, it adapts along the way based on your development. The Polar Running Programs are available for 5k, 10k, half marathon and marathon events, and consist of two to five running exercises per week depending on the program. It's super simple!

For support and more information about using the Flow web service, go to, [support.polar.com/en/support/flow](https://support.polar.com/en/support/flow).

## SPORT PROFILES IN POLAR FLOW

There are four default sport profiles on your watch. In the Polar Flow app or web service, you can add new sport profiles to your sports list and edit their settings. Your watch can contain a maximum of 20 sport profiles. If you have over 20 sport profiles in the Polar Flow app and web service, the first 20 in the list are transferred to your watch when syncing.

You can change the order of your sport profiles by dragging and dropping them. Choose the sport you want to move and drag it into the place you want to put it in the list.

To see a video, click on one of the following links:

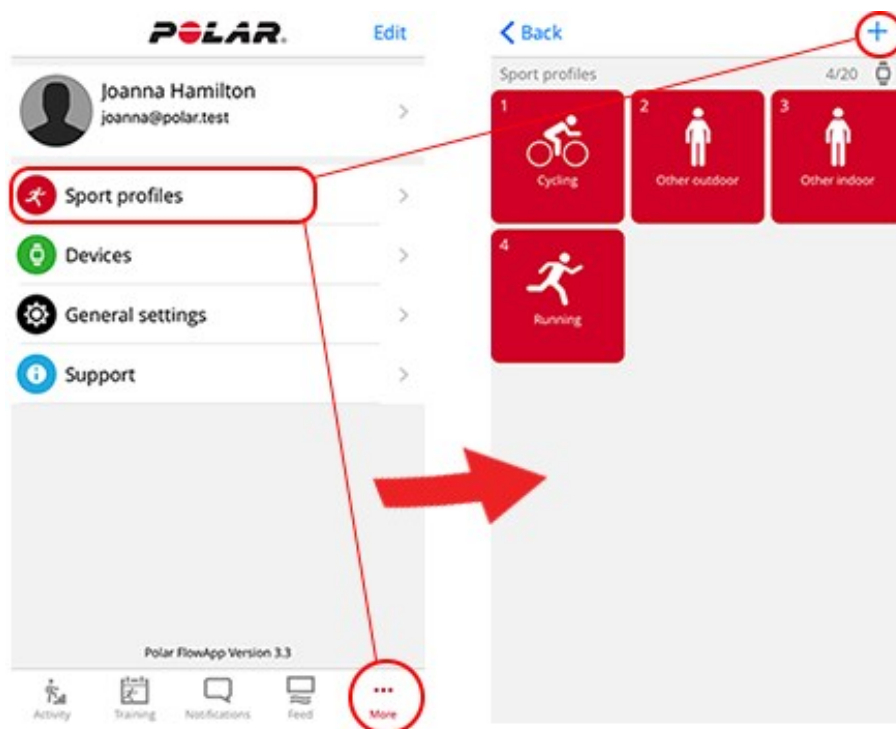
[Polar Flow app | Sport profile editing](#)

[Polar Flow web service | Sport Profiles](#)

### ADD A SPORT PROFILE


In the Polar Flow mobile app:

1. Go to **Sport profiles**.
2. Tap the plus sign in the upper right corner.
3. Choose a sport from the list. Tap Done on Android app. The sport is added to your sport profiles list.



In the Polar Flow web service:

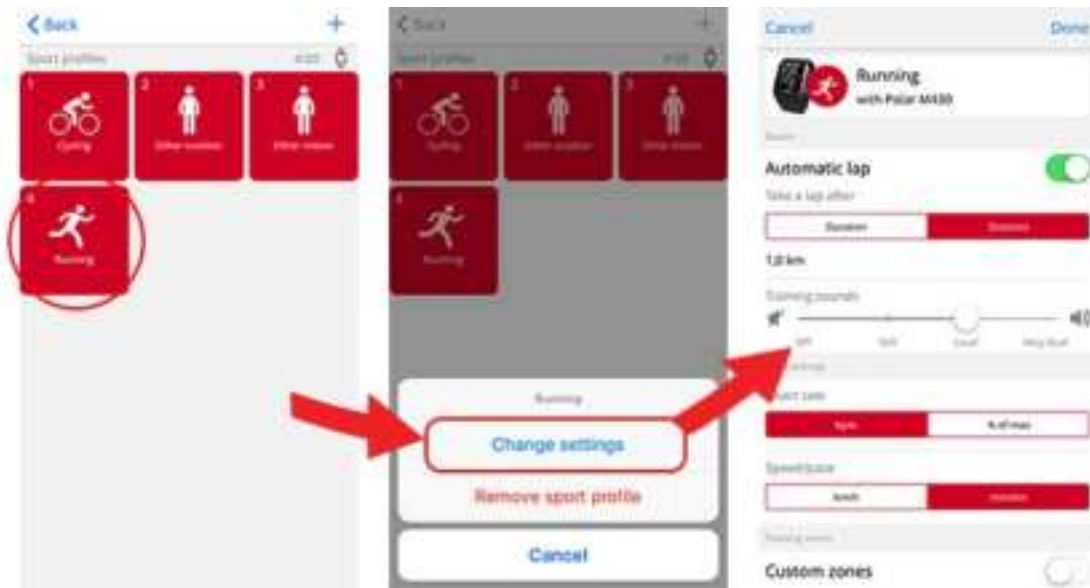
1. Click your name/profile photo in the upper right corner.
2. Choose **Sport Profiles**.
3. Click **Add sport profile**, and choose the sport from the list.
4. The sport is added to your sport list.

 *You can't create new sports yourself. The sports list is controlled by Polar, because each sport has certain default settings and values, which affect, for example, the calorie calculation and the training load and recovery feature.*

## EDIT A SPORT PROFILE

In the Polar Flow mobile app:

1. Go to **Sport profiles**.
2. Choose a sport and tap **Change settings**.
3. When you're ready, tap Done. Remember to sync the settings to your watch.



In the Flow web service:

1. Click your name/profile photo in the upper right corner.
2. Choose **Sport Profiles**.
3. Click **Edit** under the sport you want to edit.

In each sport profile, you can edit the following information:

### Basics

- Automatic lap (Can be set to duration or distance-based or turned off)

### Heart Rate

- Heart rate view (Beats per minute or % of maximum)
- Heart rate visible to other devices (This means that compatible devices using Bluetooth Smart wireless technology, e.g. gym equipment, can detect your heart rate. You can also use your watch during Polar Club classes to broadcast your heart rate to the Polar Club system.)
- Heart rate zone settings (With the heart rate zones you can easily select and monitor training intensities. If you choose Default, you cannot change heart rate limits. If you choose Free, all limits can be changed. Default heart rate zone limits are calculated from your maximum heart rate.)

### Speed/Pace settings

- Speed/Pace view (Choose speed km/h / mph or pace min/km / min/mi)
- Speed/pace zone settings (With the speed/pace zones you can easily select and monitor your speed or pace, depending on your selection. Default zones are an example of speed/pace zones for a person with a relatively high fitness level. If you choose Default, you can't change the limits. If you choose Free, all limits can be changed.)

## Training views

Choose what information you see on your training views during your sessions. You can have a total of eight different training views for each sport profile. Each training view can have a maximum of four different data fields.

Click the pencil icon on an existing view to edit it, or click **Add new view**.

## Gestures and feedback

- Vibration feedback (You can choose to have vibration on or off)

## GPS and altitude

- Automatic pause: To use **Automatic pause** during training, you need to have GPS set to **High Accuracy** or a Polar stride sensor in use. Your sessions pause automatically when you stop, and continue automatically when you start.
- Choose the GPS recording rate (Can be set off or to **High accuracy**, meaning that the GPS recording is on)

When you're done with the sport profile settings, click **Save**. Remember to sync the settings to your watch.

# PLANNING YOUR TRAINING

You can plan your training and create personal training targets for yourself in the Polar Flow web service or in the Polar Flow app. Note that the training targets need to be synced to your watch with FlowSync or via Flow app before you can use them. Your watch will guide you towards completing your target during training.


- **Quick Target:** Choose a duration or calorie target for the training. You can, for example, choose to burn 500 kcal, run 10 km or swim for 30 minutes.

- **Phased Target:** You can split your training session into phases and set a different duration and intensity for each of them. This one is for e.g. creating an interval training session, and adding proper warm-up and cool-down phases to it.
- **Favorites:** You can use your favorites as scheduled targets on your watch or as templates for training targets.


## CREATE A TRAINING TARGET IN THE POLAR FLOW WEB SERVICE

1. Go to **Diary**, and click **Add > Training target**.
2. In the **Add training target** view, choose **Quick** or **Phased**.

### QUICK TARGET

1. Choose **Quick**.
2. Choose **Sport**, enter **Target name** (maximum 45 digits), **Date** and **Time** and any **Notes** (optional) you want to add.
3. Fill in either **Duration**, **Distance** or **Calories**. You can only fill in one of the values.
4. Click the favorite icon  if you want to add the target to your **Favorites**.
5. Click **Save** to add the target to your **Diary**.

### PHASED TARGET

1. Choose **Phased**.
2. Choose **Sport**, enter **Target name** (maximum 45 digits), **Date** and **Time** and any **Notes** (optional) you want to add.
3. Choose whether you want to **Create new** or **Use template**.
  - Creating new: Add phases to your target. Click **Duration** to add a phase based on duration or click **Distance** to add a phase based on distance. Choose **Name** and **Duration/Distance** for each phase, **Manual** or **Automatic** next phase start, and **Select intensity**. Then click **Done**. You can go back to edit the phases you've added by clicking the pen icon.
  - Using the template: You can edit the template phases by clicking the pen icon on the right. You can add more phases to the template as instructed above for creating a new phased target.
4. Click the favorite icon  if you want to add the target to your **Favorites**.
5. Click **Save** to add the target to your **Diary**.

### FAVORITES

If you have created a target and added it to your favorites, you can use it as a scheduled target.

1. In your **Diary**, Click **+Add** on the day when you want to use a favorite as a scheduled target.
2. Click **Favorite target** to open a list of your favorites.

3. Click the Favorite you want to use.
4. The Favorite is added to your diary as a scheduled target for the day. The default scheduled time for the training target is at 18.00/6pm. If you want to change the details of the training target, click the target in your **Diary**, and modify it to your liking. Then click **Save** to update the changes.

If you want to use an existing Favorite as a template for a training target, do the following:

1. Go to **Diary**, and click **Add > Training target**.
2. In the **Add training target** view, click **Favorite targets**. Your training target favorites are shown.
3. Click **Use** to select a favorite as a template for your target.
4. Enter **Date** and **Time**.
5. Modify the Favorite according to your liking. Editing the target in this view won't change the original Favorite target.
6. Click **Add to Diary** to add the target to your **Diary**.

## SYNC THE TARGETS TO YOUR WATCH

**Remember to sync the training targets to your watch from the Flow web service via FlowSync or Flow App.** If you don't sync them, they are only visible in your Flow web service Diary or Favorites list.


For information on starting a training target session, see [Start a training session](#).

## FAVORITES

In **Favorites**, you can store and manage your favorite training targets in the Flow web service. You can use your favorites as scheduled targets on your watch. For more information, see [Plan your training in the Flow web service](#).

Your watch can have a maximum of 20 favorites at a time. The number of favorites in the Flow web service is not limited. If you have over 20 favorites in the Flow web service, the first 20 in the list are transferred to your watch when syncing. You can change the order of your favorites by dragging and dropping them. Choose the favorite you want to move and drag it into the place you want to put it in the list.

### ADD A TRAINING TARGET TO FAVORITES:

1. [Create a training target](#).
2. Click the favorites icon  on the lower right corner of the page.
3. The target is added to your favorites.

or

1. Open an existing target you've created from your **Diary**.
2. Click the favorites icon ☆ on the lower right corner of the page.
3. The target is added to your favorites.

## EDIT A FAVORITE

1. Click the favorites icon ☆ on the upper right corner next to your name. All your favorite training targets are shown.
2. Click the favorite you want to edit, then click **Edit**.
3. You can change the sport, the target name, and you can add notes. You can alter the training details of the target under **Quick** or **Phased**. (For more information, see the chapter on [planning your training](#).) After you've done all the needed changes, click **Update changes**.

## REMOVE A FAVORITE

1. Click the favorites icon ☆ on the upper right corner next to your name. All your favorite training targets are shown.
2. Click the delete icon in upper right corner of the training target to remove it from the favorites list.

## SYNCING

You can transfer data from your watch to the Polar Flow app wirelessly via Bluetooth connection. Or, you can sync your watch with the Polar Flow web service by using a USB port and the FlowSync software. To be able to sync data between your watch and the Flow app you need to have a Polar account. If you want to sync data from your watch directly to the web service, in addition to a Polar account, you need the FlowSync software. If you've set up your watch, you have created a Polar account. If you set up your watch using a computer, you have the FlowSync software on your computer.

Remember to sync and keep your data up-to-date between your watch, the web service and the mobile app wherever you are.

## SYNC WITH FLOW MOBILE APP


Before syncing make sure:

- You have a Polar account and Flow app.
- Your mobile device has Bluetooth turned on, and airplane mode/flight mode is not turned on.
- You have paired your watch with your mobile. For more information, see [Pairing](#).

Sync your data:



1. Sign in to the Flow app, and press and hold the BACK button on your watch.
2. **Connecting to phone** is displayed, followed by **Connecting to Polar Flow app**.
3. **Syncing completed** is displayed when you are done.

 *Your watch syncs with the Flow app automatically after you finish a training session if your phone is within the Bluetooth range. When your watch syncs with the Flow app, your activity and training data are also synced automatically via an internet connection to the Flow web service.*


For support and more information about using the Polar Flow app, go to [support.polar.com/en/support/Flow\\_app](https://support.polar.com/en/support/Flow_app).

## SYNC WITH FLOW WEB SERVICE VIA FLOWSYNC

To sync data with the Flow web service you need the FlowSync software. Go to [flow.polar.com/start](https://flow.polar.com/start), and download and install it before trying to sync.

1. Plug your watch to your computer. Make sure FlowSync software is running.
2. The FlowSync window opens on your computer, and the syncing starts.
3. Completed is displayed when you are done.

Every time you plug in your watch to your computer, the Polar FlowSync software will transfer your data to the Polar Flow web service and sync any settings you may have changed. If the syncing does not automatically start, start FlowSync from the desktop icon (Windows) or from the applications folder (Mac OS X). Every time a firmware update is available, FlowSync will notify you, and request you to install it.

 *If you change settings in the Flow web service while your watch is plugged into your computer, press the synchronize button on FlowSync to transfer to the settings to your watch.*

For support and more information about using the Flow web service, go to [support.polar.com/en/support/flow](https://support.polar.com/en/support/flow).

For support and more information about using FlowSync software, go to [support.polar.com/en/support/FlowSync](https://support.polar.com/en/support/FlowSync).


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## BATTERY

At the end of the working life of the product Polar encourages you to minimize possible effects of waste on the environment and human health by following local waste disposal regulations and, where possible, utilizing separate collection of electronic devices. Do not dispose of this product as unsorted municipal waste.

### CHARGING THE BATTERY

 *Before charging, please make sure there's no moisture, dust or dirt on the charging contacts of your watch and cable. Gently wipe off any dirt or moisture. Do not charge the watch when it's wet.*


Your watch has an internal, rechargeable battery. Rechargeable batteries have a limited number of charge cycles. You can charge and discharge the battery over 300 times before a notable decrease in its capacity. The number of charge cycles also varies according to use and operating conditions.

 *Do not charge the battery in temperatures under 0 °C/ +32 °F or over +40 °C/ +104 °F or when the USB port is wet.*

Use the USB cable included in the product set to charge it via the USB port on your computer. You can also charge the battery via a wall outlet. When charging via a wall outlet, use a USB power adapter (not included in the product set).

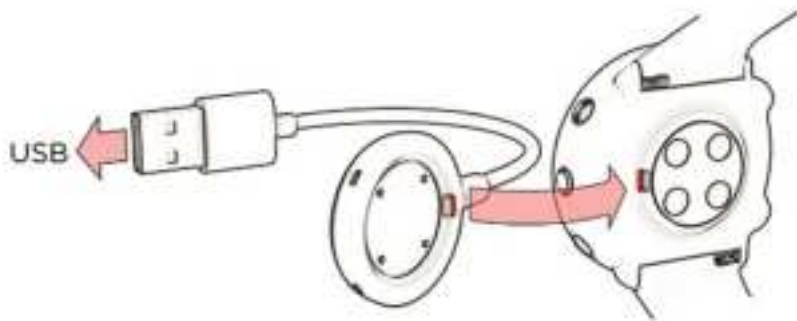
You can charge the battery via a wall outlet. When charging via a wall outlet, use a USB power adapter (not included in the product set). If you use a USB power adapter, make sure that the adapter is marked with "output 5Vdc" and that it provides a minimum of 500mA. Only use an adequately safety approved USB power adapter (marked with "LPS", "Limited Power Supply", "UL listed" or "CE").




 Do not charge Polar products with a 9 volt charger. Using a 9 volt charger can damage your Polar product.

To charge with your computer, just plug your watch to your computer, and at the same time, you can have it synced it with FlowSync.

1. To charge your watch, plug it into a powered USB port or a USB charger with the custom cable that came in the box. The cable magnetically snaps into place, just make sure to align the ledge on the cable with the slot on your watch (marked with red).



2. **Charging** appears on the display.
3. When the battery icon is full, the watch is fully charged.

 *Don't leave the battery fully discharged for a long period of time or keep it fully charged all the time, because it may affect the battery life time.*

## BATTERY STATUS AND NOTIFICATIONS

The battery status symbol is shown when you turn your wrist to look at the watch, press the LIGHT button in time view, or return to time view from the menu.

- When the battery charge is low, **Battery low. Charge** is shown in time mode. It is recommended to charge watch.
- If **Battery low. GPS and heart rate not recorded. Charge soon.** is shown in pre-training mode, the charge is too low for measuring GPS and heart rate data during training.
- When the battery is critically low, **Recording ended** is shown. Your watch stops the training recording and saves the training data.
- When the display is blank, the battery is empty and your watch has gone to sleep mode. Charge your watch. If the battery is totally drained, it may take a while for the charging animation to appear on the display.

The operating time depends on many factors, such as the temperature of the environment in which you use your watch, the features and sensors you use, and battery aging. Frequent syncing with Flow app will also decrease the battery life. The operating time is significantly reduced in temperatures well below freezing. Wearing the watch under your overcoat helps to keep it warmer and to increase the operating time.

## CARING FOR YOUR WATCH

Like any electronic device, the Polar Vantage V should be kept clean and treated with care. The instructions below will help you fulfill the guarantee obligations, keep the device in peak condition and avoid any issues in charging or syncing.

### KEEP YOUR WATCH CLEAN

Wash the watch under running water with a mild soap and water solution after each training session. Wipe it dry with a soft towel.

**Keep the charging contacts of your watch and cable clean to ensure smooth charging and syncing.**

Before charging, please make sure there's no moisture, dust or dirt on the charging contacts of your watch and cable. Gently wipe off any dirt or moisture. Do not charge the watch when it's wet.

Keep the charging contacts of your watch clean to effectively protect your watch from oxidation and other possible damage caused by dirt and salt water (e.g. sweat or sea water). The best way to keep the charging contacts clean is to rinse the watch after each training session with lukewarm tap water. The watch is water resistant and you can rinse it under running water without damaging the electronic components. **Do not charge the watch when it's wet or sweaty.**

## **TAKE GOOD CARE OF THE OPTICAL HEART RATE SENSOR**

Keep the optical sensor area on the back cover scratch-free. Scratches and dirt will reduce the performance of the wrist-based heart rate measurement.

## **STORING**

Keep your training device in a cool and dry place. Do not keep it in a damp environment, in non-breathable material (a plastic bag or a sports bag) nor with conductive material (a wet towel). Do not expose the training device to direct sunlight for extended periods, such as by leaving it in a car or mounted on the bike mount. It is recommended to store the training device partially or fully charged. The battery slowly loses its charge when it is stored. If you are going to store the training device for several months, it is recommended to recharge it after a few months. This will prolong the battery lifetime.

**Do not leave the device in extreme cold (below -10 °C/14 °F) and heat (above 50 °C/120 °F) or under direct sunlight.**

## **SERVICE**

During the two-year guarantee/warranty period we recommend that you have service done by an authorized Polar Service Center only. The warranty does not cover damage or consequential damage caused by service not authorized by Polar Electro. For further information, see Limited International Polar Guarantee.

For contact information and all Polar Service Center addresses, visit [www.polar.com/support](http://www.polar.com/support) and country-specific websites.

## **PRECAUTIONS**

Polar products (training devices, activity trackers and accessories) are designed to indicate the level of physiological strain and recovery during and after exercise session. The Polar training devices and activity trackers measure heart rate and/or tell your activity. The Polar training devices with an integrated GPS show speed, distance and location. With a compatible Polar accessory the Polar training devices show

speed and distance, cadence, location and power output. See [www.polar.com/en/products/accessories](http://www.polar.com/en/products/accessories) for a complete list of compatible accessories. The Polar training devices with a barometric pressure sensor measure altitude and other variables. No other use is intended or implied. The Polar training device should not be used for obtaining environmental measurements that require professional or industrial precision.

## **INTERFERENCE DURING TRAINING**

### **Electromagnetic Interference and Training Equipment**

Disturbance may occur near electrical devices. Also WLAN base stations may cause interference when training with the training device. To avoid erratic reading or misbehavior, move away from possible sources of disturbance.

Training equipment with electronic or electrical components such as LED displays, motors and electrical brakes may cause interfering stray signals. To solve these problems, try the following:

1. Remove the heart rate sensor strap from your chest and use the training equipment as you would normally.
2. Move the training device around until you find an area in which it displays no stray reading or does not flash the heart symbol. Interference is often worst directly in front of the display panel of the equipment, while the left or right side of the display is relatively free of disturbance.
3. Put the heart rate sensor strap back on your chest and keep the training device in this interference-free area as much as possible.

If the training device still does not work with the training equipment, it may be electrically too noisy for wireless heart rate measurement.

## **MINIMIZING RISKS WHEN TRAINING**

Training may include some risk. Before beginning a regular training program, it is recommended that you answer the following questions concerning your health status. If you answer yes to any of these questions, we recommend that you consult a doctor before starting any training program.

- Have you been physically inactive for the past 5 years?
- Do you have high blood pressure or high blood cholesterol?
- Are you taking any blood pressure or heart medication?
- Do you have a history of breathing problems?
- Do you have symptoms of any disease?
- Are you recovering from a serious illness or medical treatment?


- Do you use a pacemaker or other implanted electronic device?
- Do you smoke?
- Are you pregnant?

Note that in addition to training intensity, medications for heart conditions, blood pressure, psychological conditions, asthma, breathing, etc., as well as some energy drinks, alcohol, and nicotine may also affect heart rate.

It is important to be sensitive to your body's responses during training. **If you feel unexpected pain or excessive fatigue when training, it is recommended that you stop the training or continue at a lighter intensity.**

**Note!** If you are using a pacemaker or other implanted electronic device, you can use Polar products. In theory interference to pacemaker caused by Polar products should not be possible. In practice no reports exist to suggest anyone ever having experienced interference. We cannot however issue an official guarantee on our products' suitability with all pacemakers or other implanted devices due to the variety of devices available. If you have any doubts, or if you experience any unusual sensations while using Polar products, please consult your physician or contact the implanted electronic device manufacturer to determine safety in your case.

If you are allergic to any substance that comes into contact with your skin or if you suspect an allergic reaction due to using the product, check the listed materials in [Technical Specifications](#). If you experience any skin reaction, stop using the product and consult your physician. Also inform Polar Customer Care about your skin reaction. To avoid any skin reaction to the heart rate sensor, wear it over a shirt, but moisten the shirt well under the electrodes to ensure flawless operation.

 *The combined impact of moisture and intense abrasion may cause color to come off the heart rate sensor's surface, possibly staining light-colored clothes. It may also cause a darker color to come off clothing, possibly staining lighter-colored training devices. To keep a light-colored training device glowing for years to come, please make sure the clothing you wear while training does not bleed color. If you use perfume or insect repellent on your skin, you must ensure that it does not come into contact with the training device or the heart rate sensor. If you train in cold conditions (-20 °C to -10 °C / -4 °F to 14 °F) we recommend that you wear the training device under the sleeve of your jacket, directly on your skin.*

Your safety is important to us. The shape of the Polar stride sensor Bluetooth® Smart is designed to minimize the possibility of getting caught in something. In any case, be careful when running with the stride sensor in brushwood, for example.

# TECHNICAL SPECIFICATION

## VANTAGE V

Battery type:	320 mAh Li-pol rechargeable battery
Operating time:	<b>In continuous use:</b>  Up to 40 hours training with GPS and optical heart rate
Operating temperature:	-10 °C to +50 °C / 14 °F to 122 °F
Watch materials:	<p>BLACK model: Corning Gorilla 3 glass, SUS 316, Ni-free austenitic stainless steel / X15 CrMnMoN 17 11 3, CHN LIMS 70A/B, SUS 316L, TPU, SUS 304, PMMA, SUS 630, PA12</p> <p>Orange and White models: Corning Gorilla 3 glass, SUS 316, Ni-free austenitic stainless steel / X15 CrMnMoN 17 11 3, CHN LIMS 70A/B, SUS 316L, SUS 304, PMMA, SUS 630, PA12</p>
Cable materials:	BRASS, PA66+PA6, PC, TPE, CARBON STEEL, NYLON
Watch accuracy:	Better than $\pm 0.5$ seconds / day at 25 °C / 77 °F temperature
GNSS accuracy:	Distance $\pm 2\%$ , speed $\pm 2$ km/h
Altitude resolution:	1 m
Ascent/Descent resolution:	5 m
Maximum altitude:	9000 m / 29525 ft
Sample rate:	1 s
Accuracy of heart rate monitor:	$\pm 1\%$ or 1 bpm, whichever larger. Definition applies to stable conditions.
Heart rate measuring range:	15-240 bpm
Current speed display range:	0-399 km/h 247.9 mph



	(0-36 km/h or 0-22.5 mph (when measuring speed with Polar stride sensor))
Water resistance:	30 m (suitable for swimming)
Memory capacity:	Up to 90 hours of training with GPS and heart rate depending on your language settings
Resolution	240 x 240
Maximum power	2,8 mW
Frequency	2.402 - 2.480 GHz

Uses wireless Bluetooth® technology.

The Polar Precision Prime optical heart rate sensor fusion technology uses a very small, safe amount of electric current on the skin to measure the contact of the device to your wrist to enhance accuracy.

## POLAR FLOWSYNC SOFTWARE

To use FlowSync software you need a computer with Microsoft Windows or Mac operating system with an internet connection and a free USB port.

FlowSync is compatible with the following operating systems:

Computer operating system	32-bit	64-bit
Windows 7	X	X
Windows 8	X	X
Windows 8.1	X	X
Windows 10	X	X
OS X 10.9		X
OS X 10.10		X
OS X 10.11		X
macOS 10.12		X
macOS 10.13		X
macOS 10.14		X

## POLAR FLOW MOBILE APPLICATION COMPATIBILITY

Polar devices work with most modern smartphones. Here are the minimum requirements:

- iOS devices with iOS 11 or later
- Android mobile devices with Bluetooth 4.0 capability and Android 5 or later (check full phone specification from your phone manufacturer)

There is plenty of variation between how different Android devices handle the technologies used in our products and services, such as Bluetooth Low Energy (BLE) and different standards and protocols. Because of this, compatibility varies between phone manufacturers, and unfortunately Polar cannot guarantee that all features can be used with all devices.

## WATER RESISTANCE OF POLAR PRODUCTS

Most Polar products can be worn when swimming. They are not, however, diving instruments. To maintain water resistance, do not press the buttons of the device under water. When measuring heart rate in water with a GymLink compatible Polar device and heart rate sensor, you may experience interference for the following reasons:

- Pool water with high chlorine content, and seawater are very conductive. The electrodes of the heart rate sensor may short-circuit, preventing ECG signals from being detected by the heart rate sensor.
- Jumping into water or strenuous muscle movement during competitive swimming may shift the heart rate sensor to a location on the body where ECG signals cannot be picked up.
- The ECG signal strength is individual and may vary depending on the individual's tissue composition. Problems occur more frequently when measuring heart rate in water.

In the watch industry, water resistance is generally indicated as meters, which means the static water pressure of that depth. Polar uses this same indication system. Water resistance of Polar products is tested according to International Standard **ISO 22810** or **IEC60529**. Every Polar device that has water resistance indication is tested before the delivery to stand water pressure.

Polar products are divided into four different categories according to their water resistance. Check the back of your Polar product for the water resistance category, and compare it to the chart below. Please note that these definitions do not necessarily apply to products of other manufacturers.

When performing any underwater activity, the dynamic pressure generated by moving in water is greater than the static pressure. This means that moving the product under water subjects it to a greater pressure than if the product were stationary.

Marking on the back of the product	Wash splashes, sweat, rain-drops etc.	Bathing and swimming	Skin diving with snorkel (no air tanks)	SCUBA diving (with air tanks)	Water resistant characteristics
Water resistant IPX7	OK	-	-	-	Do not wash with a pressure washer. Protected against splashes, raindrops etc. Reference standard: IEC60529.
Water resistant IPX8	OK	OK	-	-	Minimum for bathing and swimming. Reference standard: IEC60529.
Water resistant Water resistant 20/30/50 meters Suitable for swimming	OK	OK	-	-	Minimum for bathing and swimming. Reference standard: ISO22810.
Water resistant 100 meters	OK	OK	OK	-	For frequent use in water but not SCUBA diving. Reference standard: ISO22810.

## REGULATORY INFORMATION



This product is compliant with Directives 2014/53/EU and 2011/65/EU. The relevant Declaration of Conformity and other regulatory information for each product are available at [www.polar.com/en/regulatory\\_information](http://www.polar.com/en/regulatory_information).



This crossed out wheeled bin marking shows that Polar products are electronic devices and are in the scope of Directive 2012/19/EU of the European Parliament and of the Council on waste electrical and electronic equipment (WEEE) and batteries and accumulators used in products are in the scope of Directive 2006/66/EC of the European Parliament and of the Council of 6 September 2006 on batteries and accumulators and waste batteries and accumulators. These products and batteries/accumulators inside Polar products should thus be disposed of separately in EU countries. Polar encourages you to minimize possible effects of waste on the environment and human health also outside the European Union by following local waste disposal regulations and, where possible, utilize separate collection of electronic devices for products, and battery and accumulator collection for batteries and accumulators.

To see the Vantage V-specific regulatory labels, go to **Settings > General settings > About your watch**.

## LIMITED INTERNATIONAL POLAR GUARANTEE

- Polar Electro Oy issues a limited international guarantee for Polar products. For products which have been sold in the USA or Canada, guarantee is issued by Polar Electro, Inc.
- Polar Electro Oy/Polar Electro Inc. guarantees the original consumer/purchaser of the Polar product that the product will be free from defects in material or workmanship for two (2) years from the date of purchase, with the exception of wristbands made of silicone or plastic, which are subject to a guarantee period of one (1) year from the date of purchase.
- The guarantee does not cover normal wear and tear of the battery, or other normal wear and tear, damage due to misuse, abuse, accidents or non-compliance with the precautions; improper maintenance, commercial use, cracked, broken or scratched cases/displays, textile armband or textile or leather wristband, elastic strap (e.g. heart rate sensor chest strap) and Polar apparel.
- The guarantee does also not cover any damage/s, losses, costs or expenses, direct, indirect or incidental, consequential or special, arising out of, or related to the product.
- Guarantee does not cover products which have been purchased second hand.
- During the guarantee period, the product will be either repaired or replaced at any of the authorized Polar Central Services regardless of the country of purchase.
- Guarantee issued by Polar Electro Oy/Inc. does not affect the consumer's statutory rights under applicable national or state laws in force, or the consumer's rights against the dealer arising from their sales/purchase contract.
- You should keep the receipt as a proof of purchase!
- Guarantee with respect to any product will be limited to countries where the product has been initially marketed by Polar Electro Oy/Inc.

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