TachyMon User Guide
V 1.2.7

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What is TachyMon?

TachyMon monitors your heart rate and alerts you when it reaches a certain number of beats per minute (BPM) or when it increases (or decreases) a certain number of BPM above (or below) a recent average. TachyMon now includes a companion iPhone app where you can review the data from monitoring sessions run on the watch. In addition, you can now connect a BLE (Bluetooth Low Energy)-enabled heart rate sensor – no Apple Watch required.

TachyMon Watch App Main Screen   *TachyMon iPhone App Main Screen*

TachyMon was created by the developer for his niece Alex, who was diagnosed with Postural Orthostatic Tachycardia Syndrome (POTS) in the fall of 2021. POTS seems to be an increasingly common diagnosis, especially for young women. People with POTS often experience fatigue, brain fog, rapid heartrate increases and other symptoms. Alex was experiencing frequent fainting (syncope) and we noticed the fainting occurred when her heart rate increased rapidly, or when her heart rate reached a certain absolute threshold (150 BPM in her case).

So TachyMon generates alerts for these increases in heart rate. You can set custom alert levels for both absolute BPM and relative BPM increases. Alex finds that the Watch alerts help her to sit or crouch down when her heart rate is elevated, and this helps her to avoid fainting, and to feel a bit more in control of her POTS.

In addition, TachyMon can also generate alerts based on low heart rate or significant heart rate decrease.

The TachyMon iPhone app allows you to review all the data from TachyMon monitoring sessions run on your watch. You can annotate events with notes and symptoms, view events live while the monitoring session is running on the watch, export charts to the Photos app, export raw data to CSV format, and generate summary reports. You can also connect a Bluetooth Low Energy enabled heart rate sensor to your phone and run TachyMon monitoring sessions on your phone.

It is a specialized app, and we hope it may help others with POTS, or people in other situations when it may be useful to monitor heart rate changes. **It goes without saying that it is important to consult with medical professionals if you are concerned about your heart health, and that the TachyMon app is intended for informational purposes only. It is not a substitute for specialized medical care.**

Installation instructions

Install from App store.

TachyMon includes both an app for the iPhone and for the Apple Watch.

TachyMon for iPhone   TachyMon for Apple Watch

Reinstall

To reinstall the TachyMon watch app:

1. Open the Watch app on your phone.
2. On the "My Watch" tab scroll down to "AVAILABLE APPS"
3. Find TachyMon and select "INSTALL"

Or try:

1. On your watch open the App Store app.
2. Scroll all the way to the bottom
3. Press "Account"
4. Press "Purchased"
5. Press "My Purchases"
6. Look for TachyMon
7. Press download symbol ⟳

TachyMon Watch App

Open the TachyMon App on your watch.

The first time you open it on your watch, TachyMon will ask for some permissions. No personal data is stored by TachyMon or its developer, but you need to give it permission to get heart rate data and to write workouts to the Apple Health app.

Tap "review" and accept the permissions from the "Read Access" and "Write Access" screens.
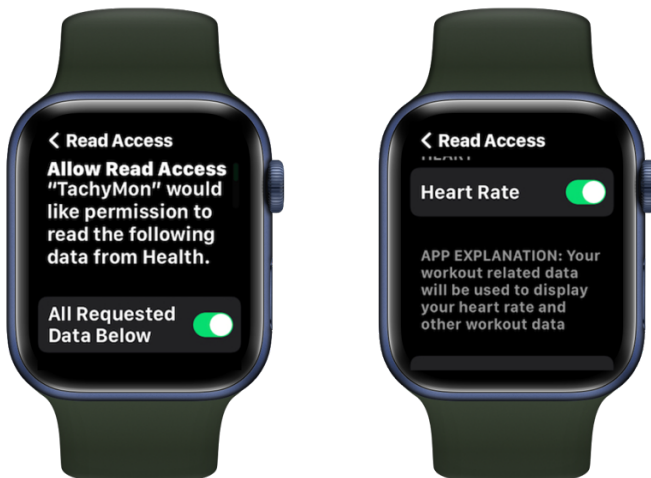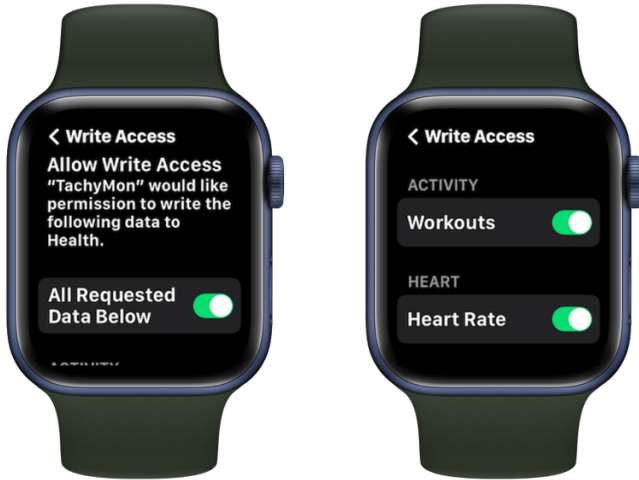
Once the permissions are done you may see a warning:

Once complete you should see a green button called "Start Monitoring":

Press the "Start Monitoring" button to begin. If you receive an error message "Could not begin collection of HR data" then the permissions need to be updated in the Health app on your phone:
1. Open the Health app
2. Go to the "Sharing" tab
3. Select "Apps" near the bottom
4. Find TachyMon in the list of apps.
5. Make sure 'ALLOW "TACHYMON" TO WRITE' has Heart Rate and Workouts both enabled.
6. Make sure 'ALLOW "TACHYMON" TO READ' has Heart Rate and Workouts both enabled.
7. Restart TachyMon and press the "Start Monitoring" button

It will then show a screen with current your heartrate, average recent heartrate, and the delta or difference between the two:

Current Heart rate

Recent Average Heart rate

"Delta" or difference between Average and Current Heart rate
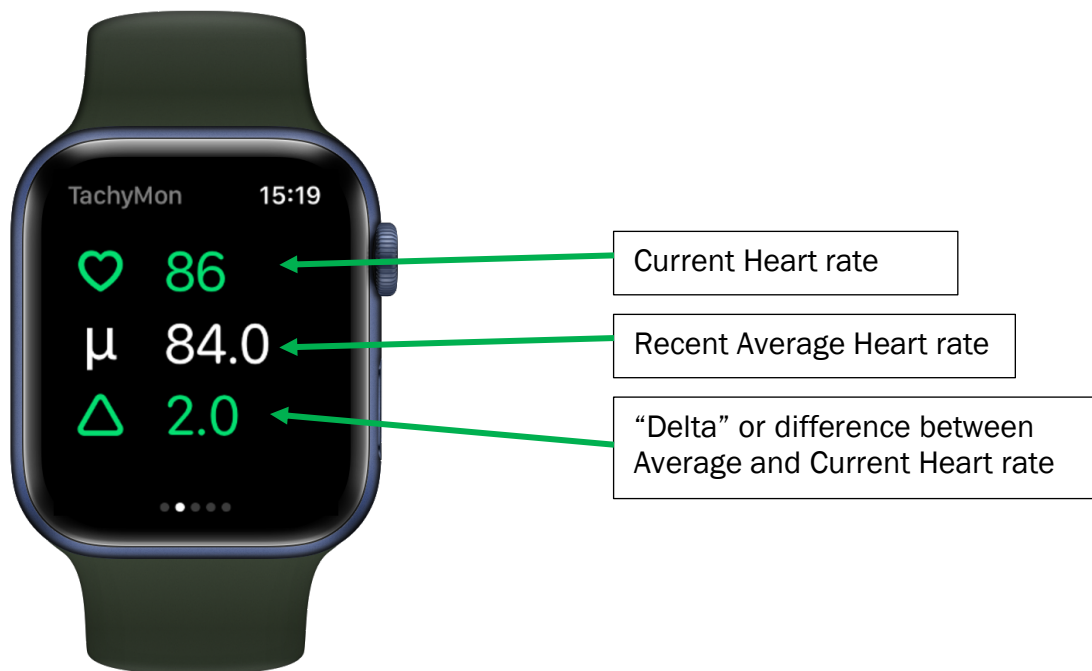
Events

The next screen (you change screens by swiping your finger from right to left) is a log of events -- orange and red (for high HR) and blue and purple (for low HR) warnings and when they happened:

Level 2 high heart rate alert: started at 12:47 pm, duration 12 minutes, average heart rate preceding the event was 87 bpm, maximum heart rate during event was 164 bpm.

Level 1 low heart rate alert: started at 3:12 pm, duration 68 seconds, average heart rate preceding the event was 75 bpm, minimum heart rate during event was 55 bpm.

High heart rate alerts are orange for level 1 and red for level 2. Low heart rate alerts are blue for level 1 and purple for level 2.

Sharing Events

Click on the "Share Events" button to share alert event info by email or text.

Charts

Click anywhere on an Alert Event to bring up the detailed chart. Click on the "Share Chart" button to share the chart by email or text.

Settings

The next screen is for setting the heart rate levels at which you want warnings:

The absolute levels are for warnings when your heart rate exceeds a certain limit. Defaults are 130 (orange) and 150 (red). You should change these to suit your own situation, but these are the ones Alex with POTS uses.

The Delta warnings are for rapid increases in heart rate compared with your recent average heart rate. The defaults are 30 and 50 BPM increases. If you are getting too many (not useful) alerts, increase these

amounts, especially the lower one. If you are fainting or having other adverse reactions even at these settings, you could try lowering them.

Further down the screen are the setting for low heart rate:

The absolute levels are for warnings when your heart rate is below a certain limit. Defaults are 45 (blue) and 30 (purple). You should change these to suit your own situation. You can set them to very low values (2 and 1) if you don't want to see alerts for low heart rate.

The Delta warnings are for rapid decreases in heart rate compared with your recent average heart rate. The defaults are 30 and 50 BPM decreases (hence negative numbers). If you are getting too many (not useful) alerts, decrease these amounts (set to a larger magnitude negative number, e.g. -50 and -100).

Silence watch alerts: permanently silences alerts, until you turn off the setting. To temporarily silence alerts, you can triple tap on the monitor view.

Battery saving mode: reduces animations, frequency of screen updates, and increases interval between haptic alerts.

Vibrate phone on alert from watch: sends vibration alerts to your iPhone.

Alerts

If a threshold is exceeded the display for the heart rate or delta will change (above left shows high HR, above right shows significant decrease in HR). For level 1 alerts the watch will beep and vibrate every 5 seconds. For levels 2 alerts it will beep and vibrate every second. Alerts will stop when the heart rate and delta return to within the thresholds you have set. Heart rate and delta show green when they are within your thresholds.

You can silence alerts by tapping the screen three times. Alerts will be silenced for five minutes. Tap three times again to resume alerts immediately.

Stopping TachyMon

If you want to stop using the app, just swipe left-to-right as far as you can and hit "Stop Monitoring." Stopping monitoring allows the session data to be written to the Apple Health app so it can be viewed on the companion iPhone app. You should stop monitoring before you take off your watch to charge.

Apple Workouts

Because TachyMon is a workout-type app, it will become the default screen on your watch while it is actively monitoring. You can do all the other things on your Watch, but after a few minutes the TachyMon screen will return. If you want TachyMon to run in the background all the time you can change the settings in the Watch App on your phone:
       - Open Watch App on your phone
       - go to General -> Return to Clock
       - Scroll down to TachyMon
       - Under "When in Session", disable "Return to App"

Also please note: **IF YOU START ANOTHER WORKOUT ON THE APPLE WATCH THEN TACHYMON WILL STOP WORKING**. You will need to start monitoring again when you have finished your workout.

TachyMon iPhone App

You can review all your session data, monitor live, and more, on the TachyMon companion iPhone app. You will need to give permission for the app to access your Health data. To see your most recent session data you need to press "Stop Monitoring" on the watch to make the data available on the iPhone app. It is also recommended to stop monitoring before charging the watch.
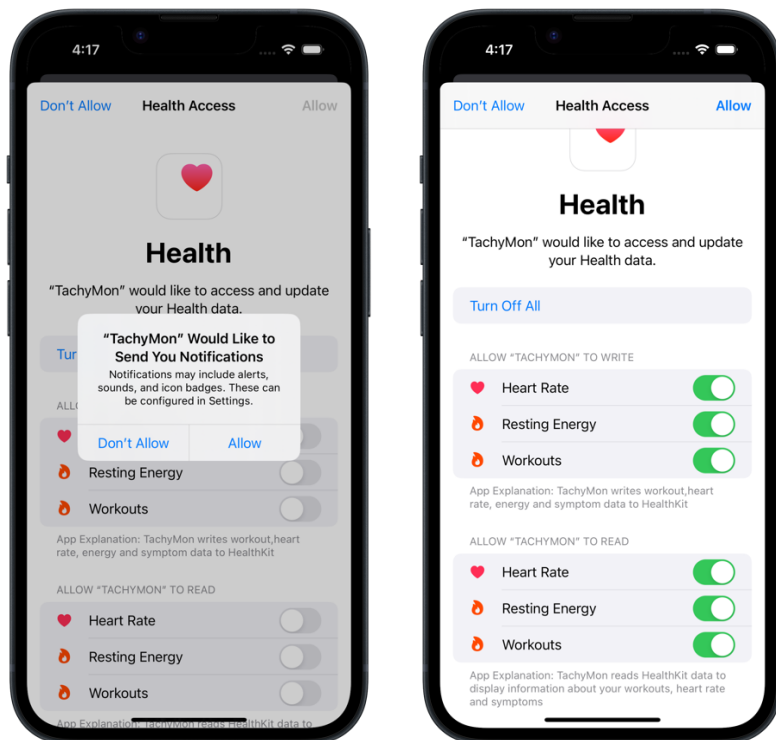
When you first use TachyMon you will be asked to grant permissions for access to your Health data.

Please ensure all required permissions are granted. You can check or update your permissions using the Apple Health App on your phone. Go to Sharing, then "Apps and Services", then select TachyMon.

The TachyMon iPhone app has four main tabs:
1. **Monitor** – see current heart rate metrics and alerts live, view detailed charts for each event, annotate events with notes and symptoms, and adjust your watch settings. You can also connect a BLE-enabled heart rate sensor instead of using an Apple watch.
2. **Sessions** – review previous TachyMon monitoring sessions, view and annotate events, and generate summary PDF reports for each session.
3. **Summary** – view summary charts for events and symptoms over previous week, month, and year. View and edit log of all symptoms.
4. **Info** – information on subscription options, FAQ, contact info, terms and conditions, and privacy policy.

Session Tab

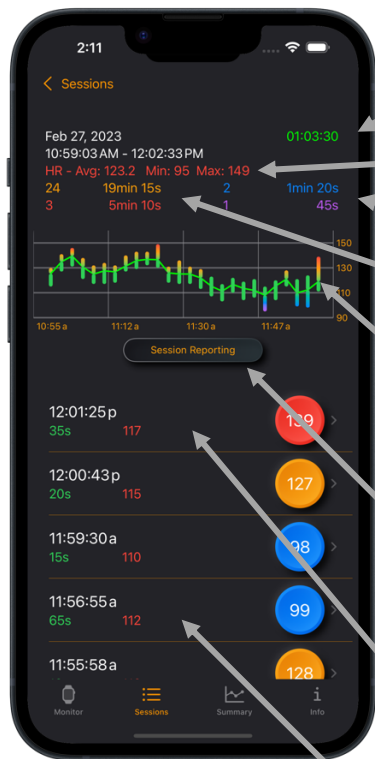You can review all your previous session data on the Session tab.
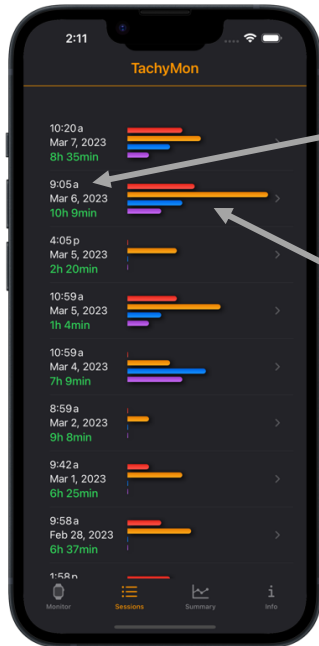
Monitoring session started at 9:05am, The session lasted 10 hours and 9 minutes

From top to bottom the chart shows the number of:
- Level 2 high HR alerts
- Level 1 high HR alerts
- Level 1 low HR alerts
- Level 2 low HR alerts

Click on any session to bring up the detailed session view:

Session duration

Average, minimum, and maximum heart rate during session

Number and duration of level 1 and 2 **low** heart rate events

Number and duration of level 1 and 2 **high** heart rate events

Summary heart rate chart for session. Orange or red bars indicate at least one high heart rate alert during that interval. Blue or purple bars indicate low heart rate events during the interval.

Session Reporting button – opens Session Reporting view. From here you can generate a summary PDF report for each session. You can also bulk export event charts to the Photos app.

High heart rate event. (Level 1 is orange, 2 is red). Started at 12:01pm, duration 35 seconds. Average HR prior to event was 117. Max HR during event was 139.

Low heart rate event. (Level 1 is blue, 2 is purple). Started at 11:56 am, duration 65 seconds. Average HR prior to event was 112. Minimum HR during event was 99.

Click on any event to bring up the detailed heart rate chart for the event:
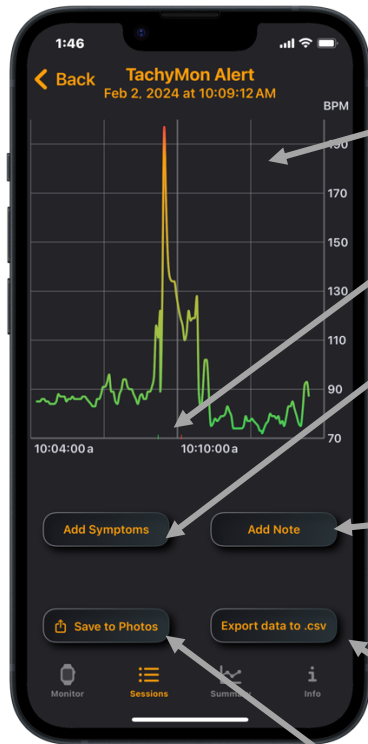
Event detail view

Chart of your heart rate, from 5 minutes before to 5 minutes after the event.

Green and red bars show the start time and end time of the event.

Add Symptoms: attach symptoms to an alert event. These will display whenever you select the event. Symptoms will be displayed along with the event when exported to Photos and when you generate a summary report for the session.

Add Note: attach notes to an alert event. These will display whenever you select the event. Notes will be displayed along with the event when exported to Photos and when you generate a summary report for the session.

Export data to .csv: export the raw heart rate data for an event to .csv (comma-separated) format.

Save to Photos: save chart image in printer-friendly format, with symptom and notes included, to the Photos app on your phone.

Click on the **Session Reporting** button to bring up the options for generating reports and bulk exporting to the Photos app:

Session Report view
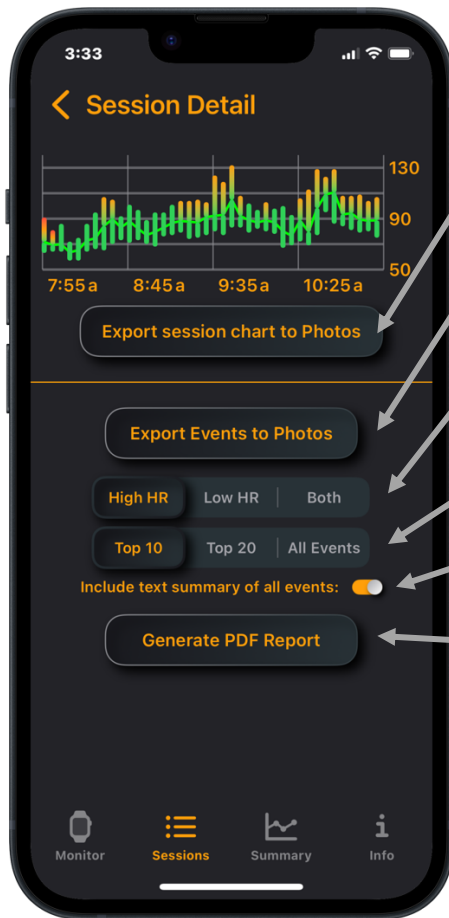
Export session chart to Photos: save chart image (in printer-friendly format) to the Photos app on your phone.

Export Events to Photos: export printer-friendly images for all the events in the session matching the filters below.

Include only high or low heart rate events, or include both. This selection applies to both exporting events to Photos and for generating the Session Summary Report.

Include the most significant 10 or 20 events, or include all. This selection applies to both exporting events to Photos and for generating the Session Summary Report.

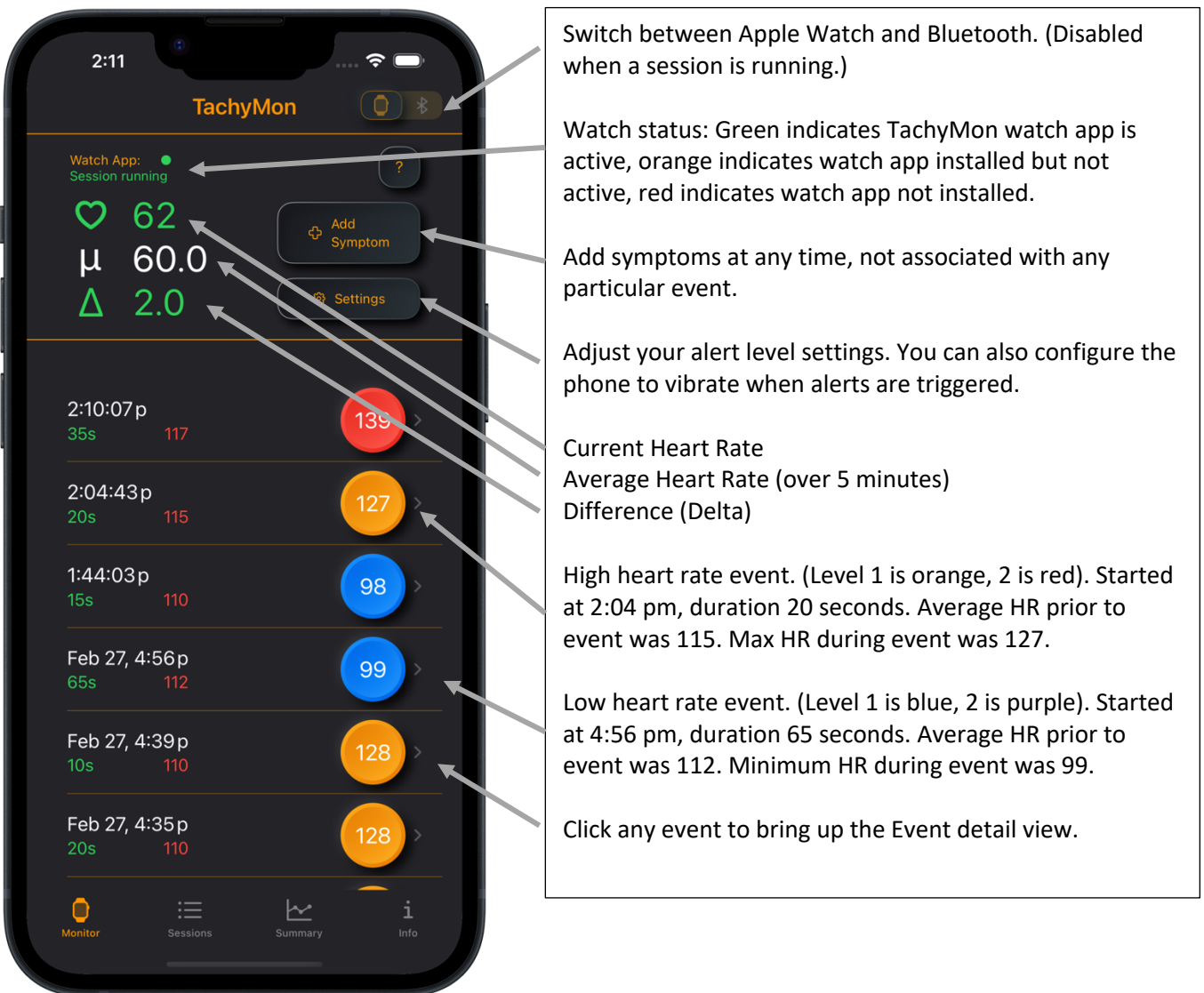Include a text summary of all events in the report.

Generate PDF Report: generate a PDF summary of your session. Once complete you can choose to open the report directly on your phone, or to display the options for sharing, including via Messages, Mail, or AirDrop.

Monitor Tab

You can view your current TachyMon session live on the Monitor tab. Current heart rate, average, and delta are displayed, as well as all events from the last week. You can adjust your alert levels and other settings and they will automatically be updated on the TachyMon watch app. In addition, by selecting the Bluetooth icon at the top right, you can connect to a BLE-enabled heart rate sensor and run TachyMon sessions directly on your phone with no Apple Watch required.
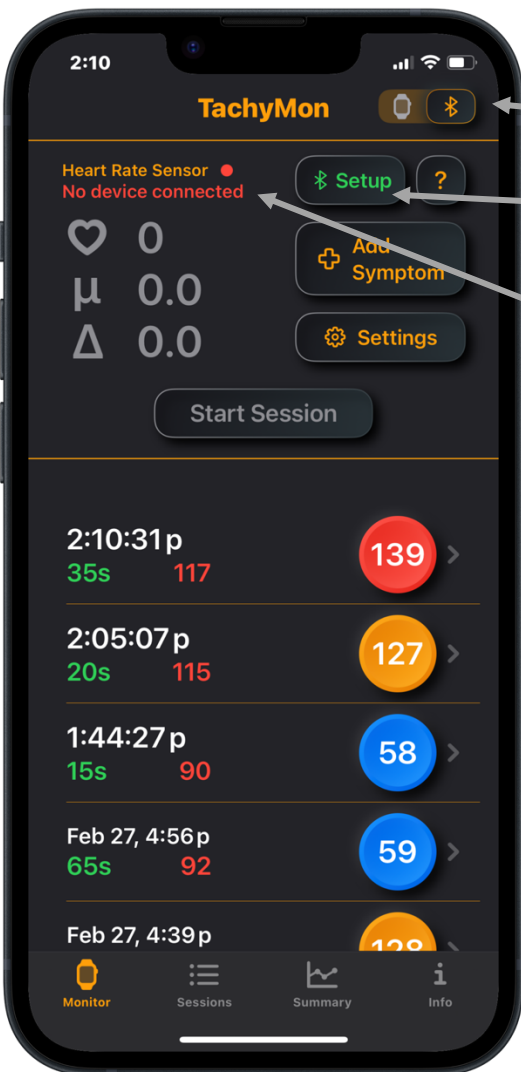
Switch between Apple Watch and Bluetooth. (Disabled when a session is running.)

Watch status: Green indicates TachyMon watch app is active, orange indicates watch app installed but not active, red indicates watch app not installed.

Add symptoms at any time, not associated with any particular event.

Adjust your alert level settings. You can also configure the phone to vibrate when alerts are triggered.

Current Heart Rate
Average Heart Rate (over 5 minutes)
Difference (Delta)

High heart rate event. (Level 1 is orange, 2 is red). Started at 2:04 pm, duration 20 seconds. Average HR prior to event was 115. Max HR during event was 127.

Low heart rate event. (Level 1 is blue, 2 is purple). Started at 4:56 pm, duration 65 seconds. Average HR prior to event was 112. Minimum HR during event was 99.

Click any event to bring up the Event detail view.

Monitor view for Apple Watch session

Monitor Tab – Bluetooth Sensor

To connect a Bluetooth heart rate sensor:
1. Click "Setup"
2. Then "Scan for devices"
3. Turn on the sensor.
4. Select your device when you see it appear.
5. You can turn on "Auto connect last known device" to automatically connect to your device. TachyMon will automatically connect to your device (as long as it is discoverable) when you open the Monitor tab.
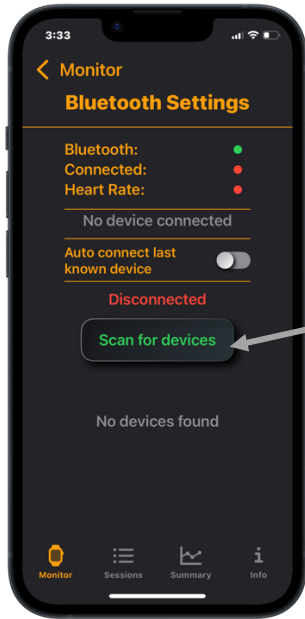

Switch between Apple Watch and Bluetooth. (Disabled when a session is running.)

Setup: click here to connect a Bluetooth heart rate sensor.

Heart rate sensor status: red indicates no sensor is connected, green indicates a sensor is connected.

Monitor view for Bluetooth sensor session

Make sure Bluetooth indicator is green. If not, then you need to enable Bluetooth for TachyMon in the settings app.
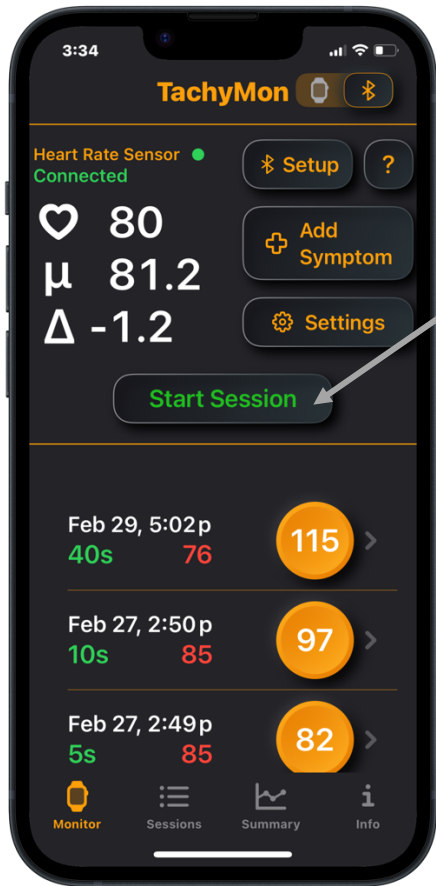
Click "Scan for devices".

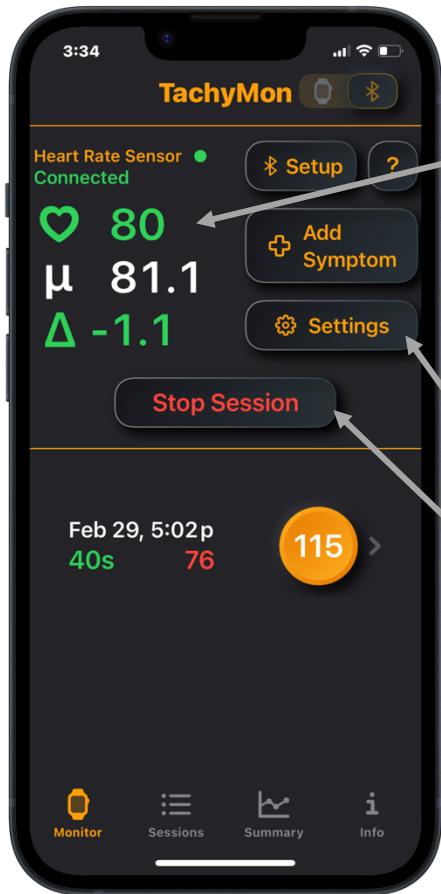When your device appears, select it and TachyMon will connect.
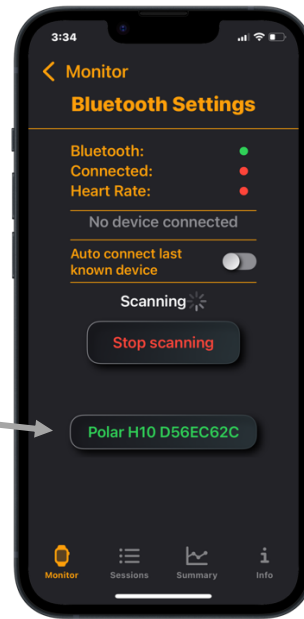
Details of connected device.

Auto connect last known device: when you switch to the monitor tab the app will automatically search for and connect to the last heart rate sensor connected.

Once a sensor is connected you can start a session.

When a session is running the heart rate and delta numbers are green when within your alert levels. For high heart rate alerts orange indicates a level 1 threshold has been exceeded, red indicates a level 2 threshold has been exceeded. For low heart rate alerts blue indicates a level 1 threshold has been exceeded, purple indicates a level 2 threshold has been exceeded.

Settings: You can adjust alert levels and other settings.

Stop Session: Click to end your session.

Summary Tab

The Summary tab shows a weekly summary of alerts and symptoms. Click on the alerts to bring up a configurable chart where you can select week, month, or year time frame. You can also select total number of alerts or total event duration. The heart rate chart can be configured to show maximum, minimum, or both. You can select 4, 12 or 24 hours. Click on the symptoms to bring up a configurable symptom chart. Both charts can be exported to the Photos app in a printer friendly format.
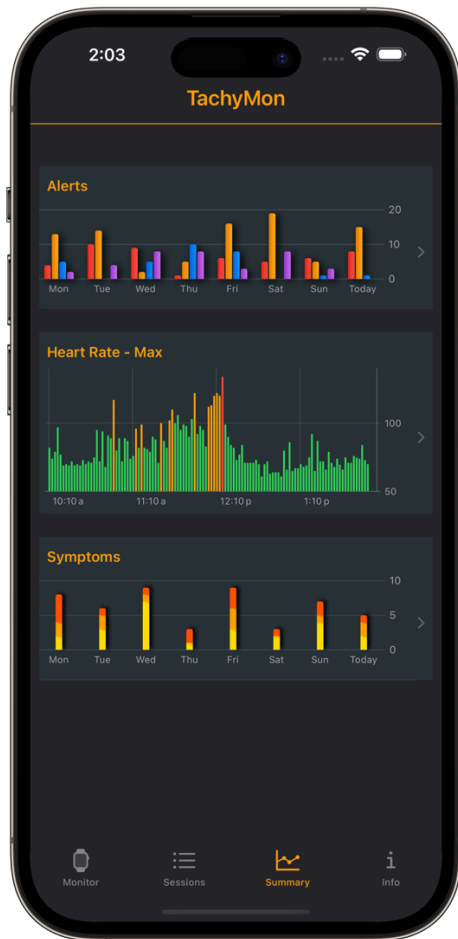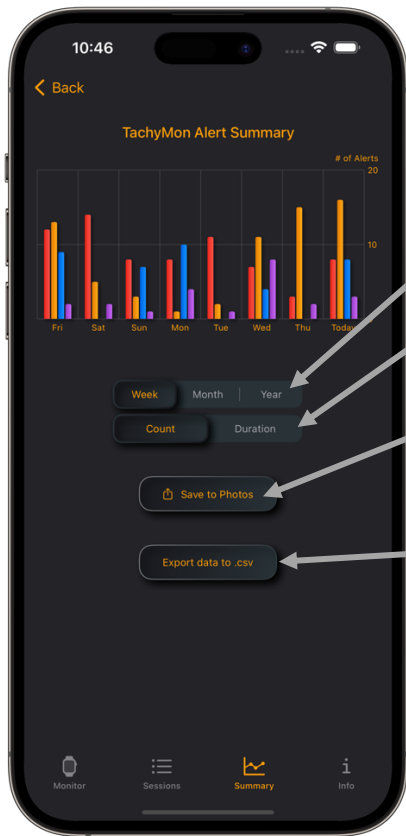
Select time frame for chart.

Toggle between total alert count or total alert duration.

Save to Photos: Click to export printer friendly version to the Photos app.

Export data to .csv: Click to export alert count and duration data to .csv format.

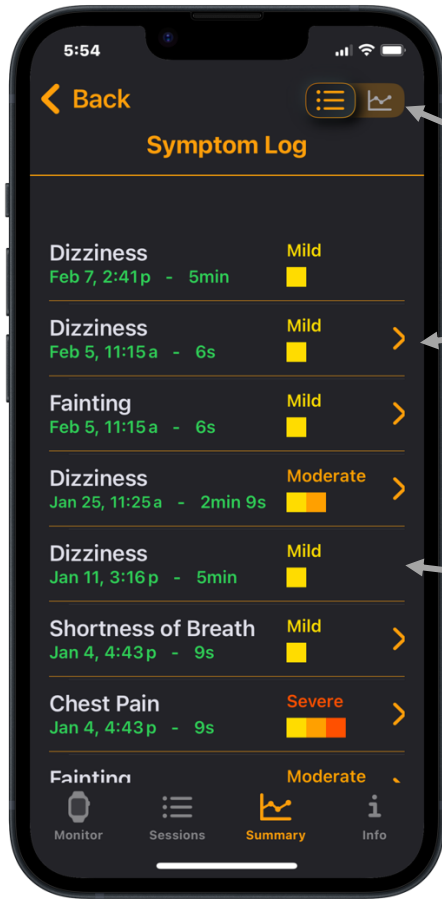*Alert summary view*

Heart rate summary view

Toggle view full screen.

Select time frame for chart.

Show maximum heart rate, minimum heart rate, or both.

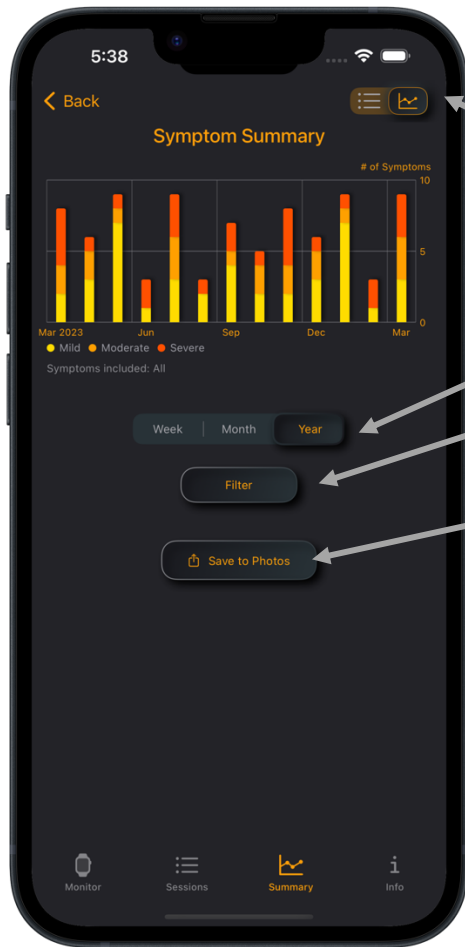**Save to Photos:** Click to export printer friendly version to the Photos app.

Toggle between symptom log and symptom chart.

Symptoms with chevron (❯) indicate the symptom is associated with an alert event. You can click to bring up the Event detail view for that event. You can edit or delete these symptoms using the Event detail view.

Symptoms with no chevron are not associated with an alert event. You can delete these symptoms by swiping left.

Symptom log view

Toggle between symptom log and symptom chart.

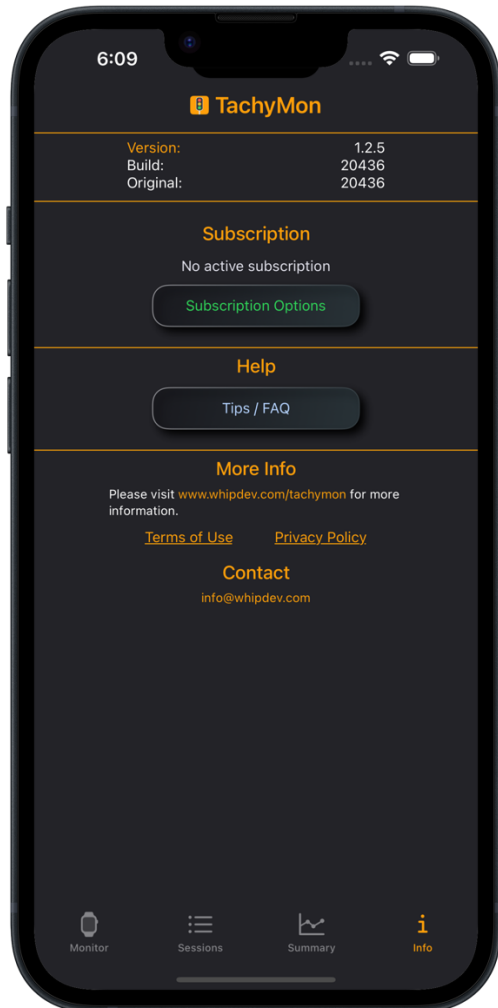Select timeframe for chart.

Filter: Select which symptom types will appear in the chart.

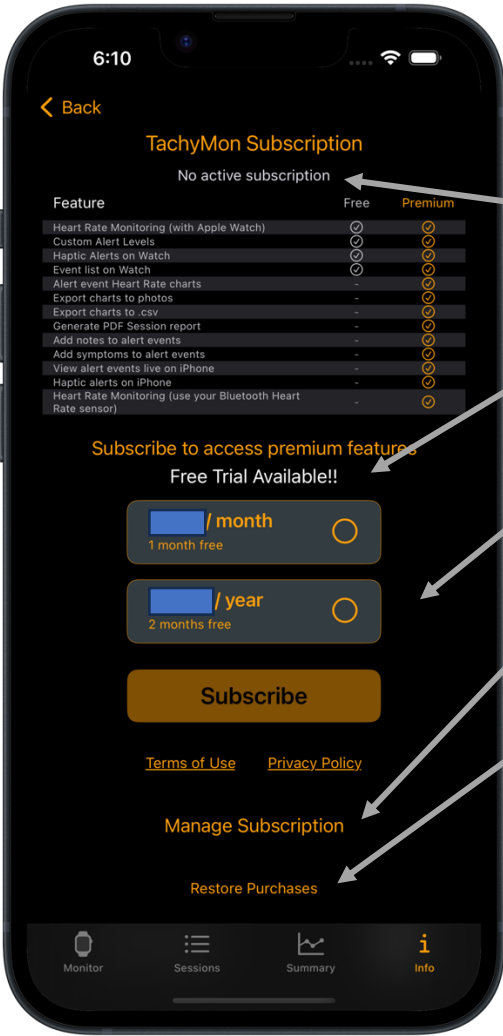**Save to Photos:** Click to export printer friendly version to the Photos app.

Symptom chart view

Info Tab

The Info tab includes version information and subscription status, as well as links to subscriptions options, FAQ, terms, privacy policy, and contact information.

Info tab view

Details of your subscription appear here.

If you have no previous subscriptions, you may be eligible for a free trial.

To subscribe: select monthly or annual then click **Subscribe**.

Manage Subscription: Change or cancel your subscription.

Restore Purchases: Click here if you think you have an active subscription that is not correctly showing above.

Subscription view

Apple Workouts Data

You can also find TachyMon session info in the Fitness App under Workouts. TachyMon session info is also available in the Health App, under workouts, under "Show All Data". Just look for the workouts with the traffic light TachyMon icon.

Questions? Feedback?
Please contact us at info@whipdev.com