

# FAQS for Sweetwater Health HRV Apps

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## Hardware Requirements for Sweetwater Health Apps

- Our apps an iPhone 8 or newer, or an iPad, running iOS 16.6 or newer.
- In addition, a compatible Bluetooth heart rate monitor is required.
  - Please choose from our [Supported Devices](#)

## What Hardware Works Best for Me?

- SweetWater Health Apps support several Bluetooth athletic chest straps as well as the handheld AliveCor Kardia Mobile 6L. The Kardia is currently being migrated to all our apps so please check the [Supported Devices](#) page to see if it is supported for your app of choice.
- The chest strap is right for you if you:
  - Measure HRV/Stress while driving.
  - Measure HRV during meditation.
  - Measure HRV while sleeping
  - Measure Stress while working
  - Measure Vagal Tone during Yoga or QiGong
  - Any activity where prolonged hands-free measurement is desired.
- The Kardia Mobile 6L is best for short 3 minute readings. It is pre-set for 3 minutes and cannot be run longer.

## When Do I Measure HRV?

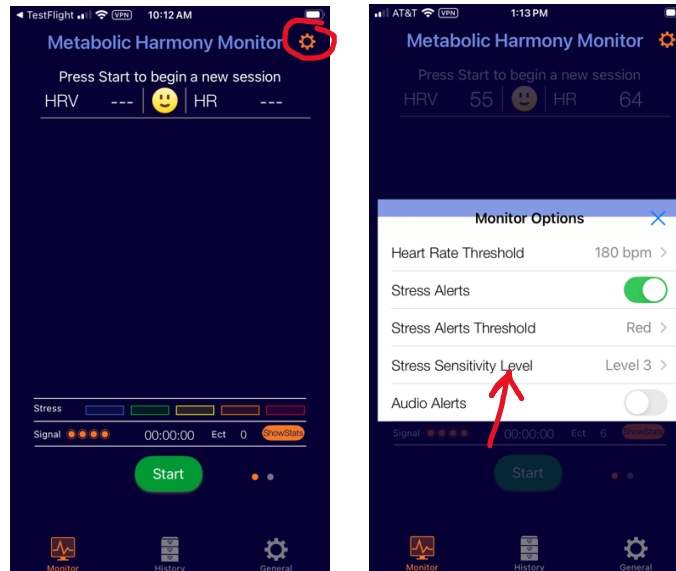
- Many of the features of SweetWater Health apps use a 3 minute reading first thing in the morning while lying in bed, preferably after urinating and returning to a supine position. This reading is used for daily insights, morning readiness, willpower and athletic training recommendations.
- While our app provide the ability to do near-continuous (battery power limited) monitoring, many people will choose to run a session when:

- Driving, especially during stressful or frustrating traffic hours. Our Monitor functions will remind you to relax and breathe if you become stressed while driving.
- Before an important meeting or event, the apps will measure your stress and if needed, prompt you to breathe and relax so you can perform at your best.
- While working. When we are stressed, the blood moves to our muscles and away from the brain and digestive system. If you have important creative work to do, it is best done when your HRV is high and you are relaxed. If your stress level is on the high side, this may be a good time to do busy work and reserve creative focus tasks for later.
- On the golf course, nerves can ruin your shot. Monitoring your fight or flight response will help you stay balanced and play your best. (Remember to turn off Audio Alerts, or your playing partner's stress levels will soar!).
- During yoga, Pilates or Qigong practice. You can measure your Vagal Tone and let you know if you are getting the most out of your practice.
- During meditation, measure your balance and let you see yourself progress through the meditation.
- If you're a "tracker," you can measure your nervous system any time.
- While resting, napping or watching TV, your HRV will let you know if you are truly unwinding.

## Which Sensitivity Setting Should I Use?

Our stress monitor feature has something called a Sensitivity Setting. This uses an algorithm that scales the stress levels based on your individual HRV readings. The reason for this is that you will not get useful information if you are always pegged in the Red stress level! Unfortunately many people live in chronic Fight or Flight and are "in the red" even when relaxing.

The Sensitivity setting can be found on the monitor screen. Simply tap the orange gear in the upper right corner of the Monitor Screen to select your sensitivity level. We recommend playing with the levels to understand how they change your stress display.

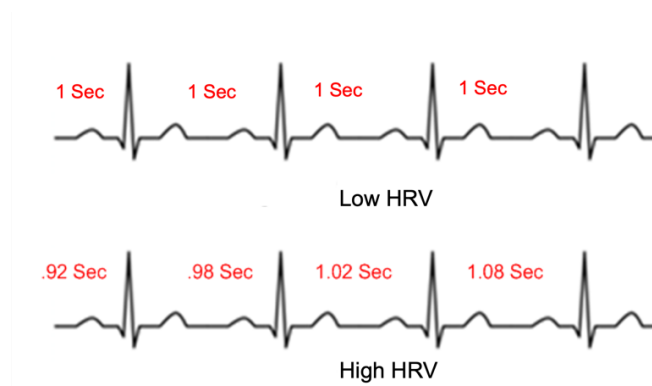


- The sensitivity settings are similar to challenge levels in video games. The novice starts on the lowest level then increases this level as his or her skill increases.
- The sensitivity settings allow our apps to accommodate all types of personalities, such as Type A or Type B, as well as different age groups. They also provide challenge levels for reducing stress and increasing balance. Starting at level 1, the easiest level, the goal is to progress to level 5, the most challenging level.
- Because HRV reduces naturally with age, persons over 50 may find that a lower level is suitable.
- Some people have chronic stress or are naturally high strung. This means that even at rest, they carry some level of stress in their bodies. For these individuals, SweetWater Health recommends starting at Level 1.
- The general recommendation and app default is to start with level 3. If you feel you are stressed and are not showing a high stress state, then it is time to move to level 4. If you feel the stress state shown is too high, then move to level 2. Continue to

increase your sensitivity level as your baseline stress levels decrease. If you find that you are showing a high-stress state when you are not feeling stressed, reduce your level until the app is not always pegged in the red.

## What is Heart Rate Variability (HRV)?

- As Heart Rate Variability goes mainstream most people really don't know what it is! When we think of our heart rate, we think of a number between 50 and 90 beats per minute (BPM). This number represents our average heart rate. In reality, our heart rate changes from beat to beat. For example, when you inhale, your heart beat speeds up and when you exhale, it slows down. So an average heart rate of 60 BPM may actually vary between 55 and 65 BPM. Heart Rate Variability (HRV) is a measure of this naturally occurring variation in the heart rate.
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- If you picture an EKG you see the spikes that happen when the heart beats. Now if your heart beats at 60 Beats Per Minute (BPM) you would expect the time between heart beats (time between the spikes in an EKG) to be 1 second long. Actually, the time between the beats vary, so for a heart rate of 60 BPM the time between beats may be 0.92 s, 0.98s, 1.02s, 1.08s etc. These values average out to 1 second intervals or 60 BPM. This natural variation of time between heartbeats is called Heart Rate Variability!



- Research shows that lots of variation in the heart beat intervals, or high HRV, is a sign of health.

## What Does a Healthy HRV Level Look Like?

Take the example of a rubber band. An old, stiff rubber band cannot stretch very well, whereas a new, fresh rubber band can stretch in many directions and return to its original shape. A regular heart beat (low HRV) is like an old rubber band that does not stretch, while a heart beat with lots of variation (high HRV) is like a new, stretchy rubber band.

A healthy body, like a new rubber band, can respond to a wide variety of environmental and psychological situations and quickly return to normal (referred to as resilience). So high HRV is a sign of health and resilience.

HRV tends to decrease normally with age, so an HRV that is healthy for a 60-year-old may not be healthy for a 20-year-old. For this reason, HRV references are age-dependent (also gender-dependent). The table below shows HRV by age and gender for the general population.

rMSSD	Gender	HRV	Age
43	Female	68	10-29
31	Female	60	30-49
25	Female	56	50-69
22	Female	53	70-99
53	Male	72	10-29
34	Male	63	30-49
22	Male	53	50-69
22	Male	53	70-99

## What Does My HRV Tell Me (in Simple Terms)?

HRV is a “view” into what your nervous system is doing. There are two branches of the nervous system that work together to stay balanced. When you are stressed, one branch of your nervous system, the “fight or flight” branch, becomes very active. When this happens, HRV goes down and represents imbalance between the two branches. When the stressful situation passes, HRV goes up as the nervous system returns to normal.

High HRV is a sign of calm and low HRV is a sign of stress. The good news is that there are many simple solutions, such as deep breathing, that helps restore calm and increase HRV.

## What Does My HRV Tell Me (in Scientific Terms)?

Our bodies, organs and brain have many different “systems” such as the cardiovascular system and the autonomic nervous system. These systems are interconnected and work together closely to keep the body functioning. For example, when we stand from lying down or are doing exercise, our heart rate increases, and our blood pressure adjusts, keeping the correct amount of blood flowing to all parts of the body. When we see something that frightens us, our heart rate increases and our blood flows to our muscles in preparation for flight from the danger.

The autonomic nervous system (ANS) controls many automatic functions such as heart rate, digestion, respiration and blood pressure and is divided into two subsystems: the parasympathetic and sympathetic nervous systems. In general, these two subsystems are in a constant dance to keep the body in balance. However, when danger is present, the sympathetic subsystem takes over in what is called the “fight or flight” response. Fight or flight is a stressful state and evolved to protect us from danger. Once the danger has past, the ANS returns to balance.

As it turns out, the pattern of the heart beat (HRV) is a reflection of what your autonomic nervous system is doing. Because of this, HRV can be used to measure the sympathetic nervous system and the fight or flight response. Also, because the nervous system, heart rate, blood pressure regulation and respiration are under

control of the autonomic nervous system HRV is an excellent indicator of many health parameters.

Low HRV is a symptom of stress and imbalance in the nervous system. This imbalance can be transitory, such as the case of temporary stress or it can be a persistent imbalance caused by busy, hectic and stressful lives inducing a constant state of fight or flight response.

The good news is that there are many practices people can do to balance their nervous systems and increase their HRV and overall health. These practices range from simple slow, deep breathing to exercise and nutrition, to modification of perception and belief systems. Deep breathing naturally balances the nervous system, exercise helps decrease stress hormones and increase endorphins, while modification of perception changes how we see a situation and whether or not it causes stress for us.

## What More Can You Tell Me about HRV?

HRV has been the topic of more than 30 years of clinical research funded by the National Institute of Health, the American Heart Association and others. HRV research areas include heart arrhythmias, asthma, sleep apnea, stress, ageing, fetal health, diabetes and more.

For more details on the science of HRV:

[http://en.wikipedia.org/wiki/Heart\\_rate\\_variability](http://en.wikipedia.org/wiki/Heart_rate_variability)

## What Features Are Included in SweetWater Apps?

- The Monitor Screen displays your heart rate, HRV and detected stress level.
  - There are five levels of stress to indicate the balance of your nervous system, from low stress (blue) to high stress (red). It is normal to be somewhere in the middle-warm range when you are working, driving or performing other activities. If a traffic jam causes one to get frustrated, SweetBeat will generate an alert and start the relaxing breath-pacing screen, bringing the nervous system back into balance.

- The HRV number shown in the SweetBeat Monitor is a measure of your heart’s beat-to-beat variation, and may change from day to day. SweetBeat displays HRV as a number ranging from 0 -100 and most people will have a resting HRV of 50-90. This HRV number may change substantially when you are very relaxed and “in the zone” or when you are having a stressful moment. Also, many athletes use this number to decide when to train hard and when to take it easy.
- Enter how you feel by pressing the “Happy” and “Set Stress” buttons. These entries will be saved with the session and can be reviewed from your MySweetBeat website location.
- The Relax screen provides a breath pacer and a visual feedback image based on your stress level.
  - The breath pacer prompts you when to inhale and exhale. It is set at a breathing frequency that is known to calm and balance the nervous system. So breathe deeply and relax!
- The visual image changes as your stress level changes. You can choose the beautiful fractals (default) or you may choose your own images from the camera roll. Just navigate the Settings menu and choose your Relax screen images.
- The History screen shows you your saved sessions by date and allows you to view those session summaries.
- The Settings Screen provides options to go to all the other screens.
  - Application Settings
    - Stress Sensitivity allows you to change the Sensitivity Level.
    - Stress Alerts allows the Alerts to be turned ON/OFF and the threshold to be set.
    - Heart Rate Alerts allows the Heart Rate Alerts to be turned ON/OFF and the threshold to be set.
    - Breath Pacer allows the Breath Pacer to be turned ON/OFF, the Audio Alerts to be turned ON/OFF and the Vibrate Alerts to be turned ON/OFF.
  - Relax Screen allows the Default Images (fractals) to be shown on the Relax page or your own Custom Images to be shown.

- Account Settings
  - Login takes you to the Login page.

## Why Is My Stress Level High after Exercise Even When I Feel Relaxed?

- During exercise, your nervous system changes to a stress state to support the activity.
- After exercise, it may take several hours for the nervous system to return to normal.
- So after exercise, you may see elevated stress levels.

## Can I Listen to Music through My Headphones While I Run a Session?

If you want to listen to music while you are running a session, start your music and then launch your app. The music will continue to play during your any Monitor session.

## Why Is My Stress Level High When I Meditate?

- When you meditate, you may enter a state called “coherence.”
- For information about coherence, see <http://www.heartmath.org/templates/ihtm/newsletter/publication/2010/winter/coherence.php>
- When we are in a coherent state, our nervous system activity is confined to a small region that happens to fall in the range we consider the “fight or flight” region. SweetBeat sees this as a stress state.
- Rest assured that if you are meditating and SweetBeat indicates high stress, you are likely in a coherent state. Don’t be concerned about it; it doesn’t mean anything is wrong with you or with the app.

- You may notice that your HRV increases during meditation, regardless of the detected Stress state.

## What is the Little Orange “Show Stats” Button?

Directly below the red “stress” bar on the monitor screen you will see a little orange button that may say “show stats” or “show graph” or “show RRs”. By pressing this button you have real-time access to the geek screen (all the HRV values like rMSSD, LF, HF) as well as real-time RR interval values. These are advanced topics that we recommend you explore!

## Why is the Location on my Saved Sessions Not Always Accurate?

Your location may not be accurate. Your location is determined based on your cell phone carrier antenna locations and other factors out of SweetWater Health’s control.

## How Can I Use Your Apps to Improve my Fitness Training?

Alternating periods of intense training and rest help an athlete avoid physical fatigue caused by over-training. HRV can be used to show when the body has rested and is ready to train again. Please see the HRV for Training White paper in MySweetBeat.

Heart Rate Recovery (HRR) is an easy and effective way to measure and track your fitness level and overall cardiovascular health. HRR can also be used during a weight loss program to maximize effectiveness. Heart Rate Recovery is simply the speed at which your heart rate declines after a workout.