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What Hardware Do I Need?

- You need an iPhone 4S or newer, iPod touch fifth generation or newer, or an iPad 3 or newer. These devices must be running iOS 7.x or later.
- You need a supported heart rate monitor, like a Bluetooth strap or the Vital Connect *HealthPatch*. See our <u>Health Sensor page</u> to purchase a compatible heart rate monitor.
- You need the SweetWater Health SweetBeatLife app. Download it on iTunes!

What Hardware Works Best for Me?

- Vital Connect *HealthPatch*[™]: The biosensor is the first solution of its kind capable of capturing clinical-grade biometric measurements in a continuous and non-obtrusive manner using a small yet powerful patch worn on the chest. To purchase, please see our <u>health sensors</u> page
- Bluetooth Low-Energy (BTLE) Heart Rate Monitors: We support many popular heart rate monitors by Polar, Zephyr, 60Beat and Viiiiva. See the <u>health sensors</u> page.
- Numetrix The Numetrix system allows you to wear a shirt with the BTLE sensors built-in.

When Do I "SweetBeatLife"?

- While the SweetBeatLife app provides the ability to do near-continuous (battery power limited) monitoring, many people will choose to SweetBeatLife when:
 - Driving, especially during stressful or frustrating traffic hours. SweetBeatLife will remind you to relax and breathe if you become stressed while driving.
 - Before an important meeting or event, SweetBeatLife 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. SweetBeatLife 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. SweetBeatLife will measure your balance and let you
 know if you are getting the most out of your practice.

- During meditation, SweetBeatLife will measure your balance and let you see yourself progress through the meditation.
- o If you're a "tracker," you can SweetBeat Life any time.
- While resting, napping or watching TV, SweetBeatLife will let you know if you are truly unwinding.

Questions about the Vital Connect Patch

• What is the Patch?

The Vital Connect HealthPatch is capable of capturing clinical-grade biometric measurements in a continuous, configurable and non-obtrusive manner using a small yet powerful patch worn on the chest.

• What are the updates I see when I pair the Patch?

Vital Connect occasionally upgrades their firmware. SweetBeatLife will tell you when an upgrade is available and allow you to upgrade the patch.

• Where can I buy the Vital Connect Patch?

From the SweetBeatLife App press "General/Buy the HealthPatch."

From the Sweetwaterhrv website www.sweetwaterhrv.com/healthsensors.shtml

Questions about other App's Metrics

- From what other apps can I get Metrics?
 - Fitbit Withings MapMyFitness
- How do I enable other app's Metrics

Log on to MySweetBeat and choose from the available apps those from which you want data.

Questions about RestWise

• What information is uploaded to RestWise?

RestWise receives HRV For Training data (daily HRV and the baseline). Any session tagged as HRV For Training is sent to RestWise (the latest session of the day is overwritten).

Which Sensitivity Setting Should I Use?

- 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 SweetBeatLife 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 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 SweetBeatLife is predicting a more accurate state.

What is Heart Rate Variability (HRV)?

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

What's a Healthy HRV Level Look Like?

• 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).

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.
- 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, is
 able to 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.

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 flowing to 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: <u>http://en.wikipedia.org/wiki/Heart_rate_variability</u>

What is in the SweetBeatLife app?

- 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, SweetBeatLife will generate an alert and start the relaxing breath-pacing screen, bringing the nervous system back into balance.
 - The HRV number shown in the SweetBeatLife Monitor is a measure of your heart's beat-tobeat variation, and may change from day to day. SweetBeatLife 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" button. This entry will be saved with the session and can be reviewed from your MySweetBeat website location.
 - By rotating the screen 90 degrees (from the Monitor Screen) you will see a real-time graph of your RR-intervals. From here, press the circled "i" by RR to see a Real-time graph of your Heart Rate, HRV, Stress, LF, HF
- The Food screen is where you run a Food Sensitivity Test. To get a quick quide on how to use the Food Sensitivity Test, please read Quick Start Guide (Food Sensitivity).
- 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 Correlation screen is where you may see how your HRV correlates to other activities you may be tracking

- Upload data from various other apps/programs you may be using, such as MapMyFitness, FitBit, Withings, etc.
- The History Screen shows you your saved sessions by data and allows you to view those saved sessions.
- The General tab provides settings and support for all the other SweetBeatLife screens.
 - Heart Rate Monitors
 - Allows the user to choose which Heart Rate Monitor to use.
 - Application Settings
 - HRV For Training is where the Daily Reminder's time is set.
 - Baseline is where you can view your baseline results or record a new baseline.
 - o Account Settings
 - Sign In takes you to the Login page.
 - The MySweetBeat screen is a link to your personal and secure MySweetBeat website location. This is where you can review, track, and compare your results as well as find health and stress management professionals and venues.
 - o Support
 - Support is where Quick Start Guides, FAQs, and Help are found.
 - o About
 - Version shows SweetBeatLife's software version.
 - Legal is where the legal docs are found.
 - End of Session Stats, Reset Stats.

What is MySweetBeat?

- MySweetBeat is your secure, personal login site where you can access your SweetBeatLife session data as well as the SweetWater Health community.
 - The online tools allow you to track your SweetBeatLife sessions and data.
 - o Download session data to plug into other HRV tracking software
 - The SweetWater Health Partners give you a wide variety of tools and education to improve your SweetBeatLife sessions over time.
 - Coming Soon! The SweetYou section provides:

- An HRV chart for athletes to plan rest and recovery workouts.
- A Heart Rate Recovery chart to track your fitness levels.
- SweetBeat Life vital signs charts by activity, day of week and time of day.

What Does SweetBeatLife Tell Me?

- SweetBeatLife can let you know when you are at ease and in the zone of productivity.
- SweetBeatLife can tell you when you are stressed, even if you don't know it.
- SweetBeatLife can let you know if you are truly balanced during yoga, qigong or meditation.
- SweetBeatLife can tell you when to train hard and when to rest.

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 "SweetBeatLife"?

• If you want to listen to music while you SweetBeatLife, start your music and then launch SweetBeatLife. The music will continue to play during your 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/ihm/e-newsletter/publica-tion/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. SweetBeatLife sees this as a stress state.
- Rest assured that if you are meditating and SweetBeatLife 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 Stats Screen ("Stats" button on the EKG Monitor)?

• You can view the stats screen by selecting the stats button below the EKG animation and can toggle between various screens by repeatedly pressing that button. If you have a Vital Connect Patch, additional metrics will be displayed

138	36	3.8
LF	HF	LF/HF
14	43	109
rMSSD	HRV	Heart Rate
27 br/min	0.579	590 cal
Respiration	RR	« Energy »
92 °F	11067	0.1 g
« Skin Tem	Steps	Activity
	01:40:17	Graph

Press Start to begin a new session

- You may tap the Skin Temp view to toggle between degrees F and degrees C.
- Respiration = How many breaths/minute
- RR = Current time between heart beats
- Energy = Total Calories Burned during this session
- You may tap the "Energy" view to toggle between total calories and calories/hour
- Skin Temp = Surface temperature of your skin
- Steps = Number of steps taken during this session
- Activity = Current activity measured in gravity "G's".
- Stats Screen (Push "Stats" button) shows details of HRV LF, HF, rMSSD, RR intervals, etc.

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 SweetBeatLife's control.

How can I use SweetBeatLife to improve my Fitness Training?

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

What is the Average HRV for Age?

• The following is a rough chart of Average HRV for Age.

Age Range	HRV
10 - 20	76
20 - 30	73
30 - 40	69
40 - 50	65
50 - 60	62
60 - 70	58
70 - 80	55
80 - 90	51
90 - 100	48
100 and over	0.0

How does SweetBeatLife calculate HRV?

- SweetBeatLife measures the RR intervals (the time between heartbeats) then calculates the HRV parasympathetic parameter rMSSD. We then run a scaling algorithm on rMSSD to create an HRV value. Typical values will be in the range of 0-100. rMSSD is the square root of the mean squared difference of successive RRs. Elite athletes will experience very high rMSSD scores compared to others.
- If you want to see the raw numbers, look at the "Stats" Screen also known as the "Geek" Screen on the flip side of the EKG screen. To see the Geek Screen, press the "Stats" button in lower right corner of the window where the animated EKG appears. You will see the summary numbers from your last session.