



Metabolic Harmony + for Health and Wellness



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SweetWater Health

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Here's What We'll Cover!

- What is Metabolic Harmony?
- The Purposeful Design of the Nervous System
- Importance of Vagal Tone
- How Vagal Tone Can be Enhanced or Diminished
- Food Sensitivities
- Measuring Metabolic Health Heart Rate Variability (HRV) and Food Testing
- 30 Day Metabolic Harmony + Challenge



What is Metabolic Harmony?

Metabolic harmony occurs when all your essential bodily systems are working together and running optimally.



When we are in Metabolic Harmony, we are able to respond (verses react) and recover from stressful situations.



The inability to recover from stress leads to:

Digestive problems

Anxiety and
Depression

Migraines

IBD/IBS

Poor Sleep



Physiologically, Metabolic Harmony means markers such as blood pressure, blood sugar/insulin, hormones, and nervous system are healthy and functioning together like a beautiful symphony!



Chaos or Harmony?

What is Metabolic Harmony?

Physiologic Chaos

“Sympathetic overdrive” causing the body’s inability to rebalance biomarkers after stressful events or performance.
Inflammatory response activation.

React rather than Respond

Anxiety and depression,
brain fog

Stress, restless sleep, weight gain,
digestive problems, irritable bowel

Metabolic Harmony

Balanced interaction and Synchronization of the body’s biomarkers like insulin/blood sugar, blood pressure, hormones and neurotransmitters

Respond rather than React

Improves energy, mood, and resilience

Key to restorative sleep, vitality, longevity, and healthy aging



Metabolic Harmony Measured



The Autonomic Nervous System is the information highway of your body. It transmits and receives all the signals from all the organs and makes sure communications are clear and efficient.



The Autonomic Nervous System has 2 branches:

Sympathetic or Fight or Flight Branch
Parasympathetic or Rest and Digest Branch



These two branches work together to keep you on track throughout your day and night.



A weak or poorly functioning Nervous System reduces resilience, leads to stress, restless sleep, weight gain and “metabolic chaos”.

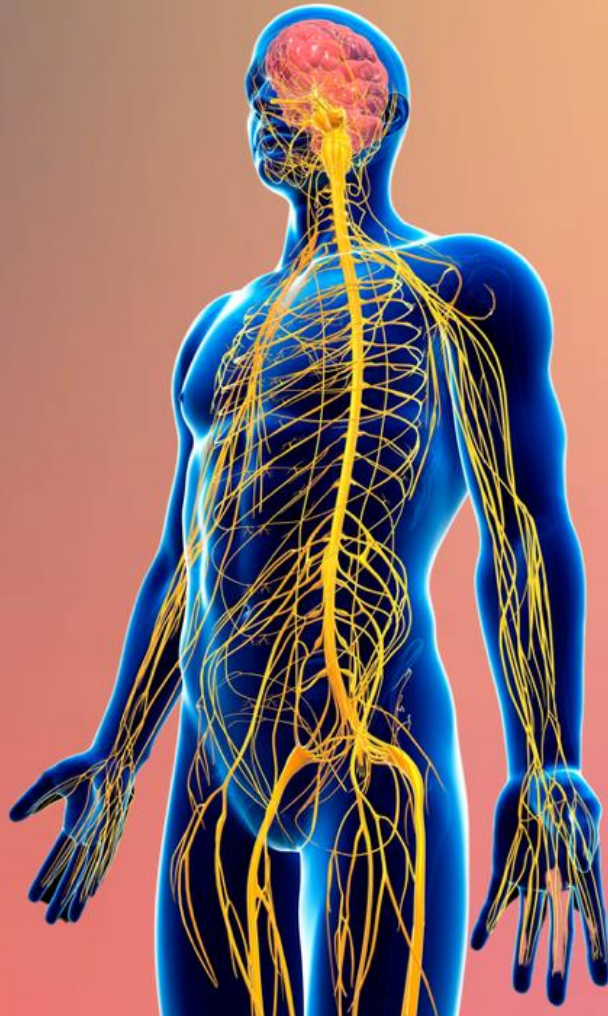


The Parasympathetic Branch has a major component called the **Vagus Nerve**.

The **Vagus Nerve** calms down your fear, fight or flight reactions.



Autonomic Nervous System



The Orchestra

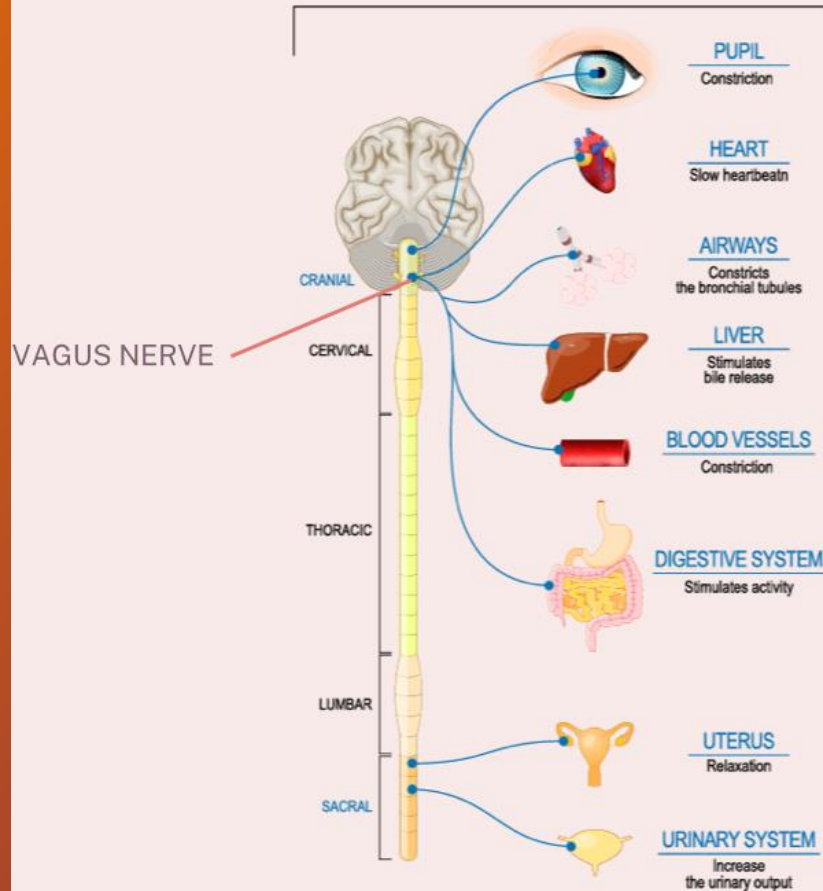
The Autonomic Nervous system (ANS) transmits and receives signals between the brain and the body's organ systems.

- 2 Branches of the ANS are designed to work together for optimal performance:
 - Sympathetic Branch - "Fight or Flight"
 - Parasympathetic Branch - "Rest and Digest"
- Directing body functions that you don't have to think about
 - Digestion
 - Heart rate
 - Breathing
 - Pupil response
 - Alertness
- When working well together, the two branches create Metabolic Harmony

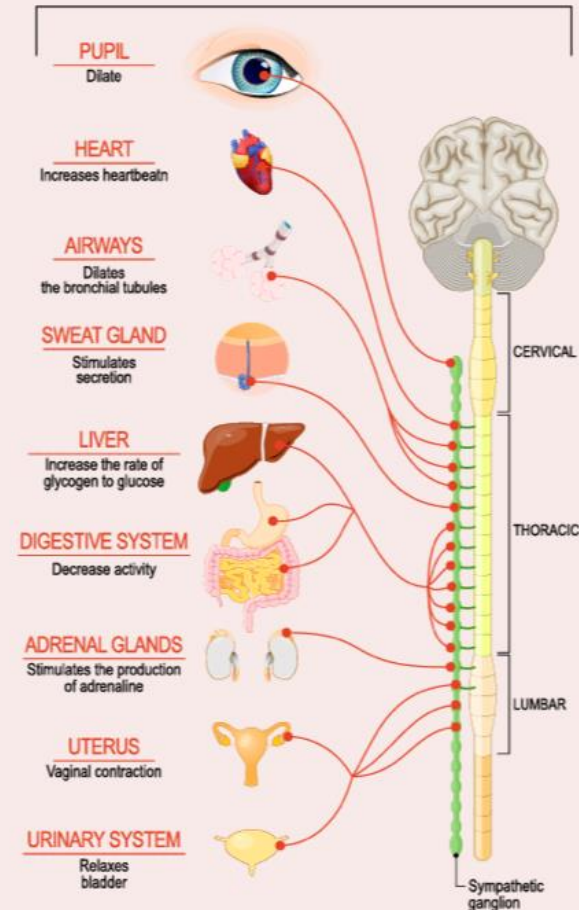


2 Branches of the Autonomic Nervous System

Parasympathetic



Sympathetic





Vagal Tone Essentials

- Vagus Nerve is Latin for “The Wandering Nerve” and is attached to most organs
- The health of the Vagus Nerve is referred to as Vagal Tone and is directly responsible for:
 - Heart Rate
 - Blood Pressure
- It also regulates essential metabolic functions:
 - Insulin/Blood Sugar
 - Lipids
 - Inflammation
 - Hormones
 - Appetite Control
- Vagal tone is tied to the Microbiome via signaling of these essential bodily functions



Vagal Tone In Daily Life

Vagal Tone

- A measure of stress vulnerability in humans
- Reflects activity and health of the vagus nerve

Some Causes of Low Vagal Tone

- Chronic stress
- Unresolved trauma
- Disease or illness
- Poor sleep
- Physical injury

Impact of LOW Vagal Tone

Moodiness

Irritability

Gut issues

Pain

Anxiety

Brain Fog

Worse Sleep

High Blood Pressure

Can vagal tone be measured?



Your Heart Does Not Beat Like a Metronome ~ HRV

Heart Rate Variability (HRV) to Measure Vagal Tone



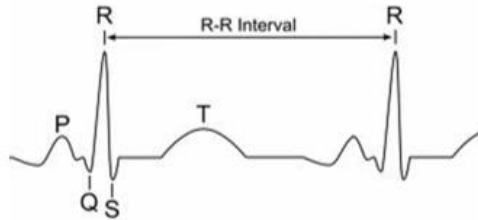
“The Tempo”



What Is HRV?

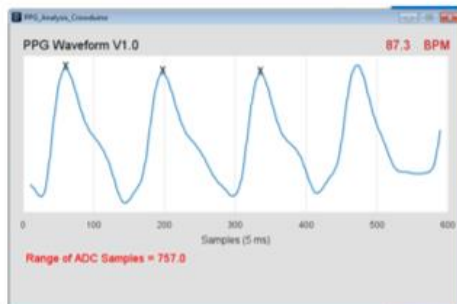
Heart Rate Variability (HRV) to Measure Vagal Tone

- HRV calculations are performed on the R-R interval time series.



(R-R is the time between beats)

- **Accurate HRV** requires “single lead ECG accuracy”



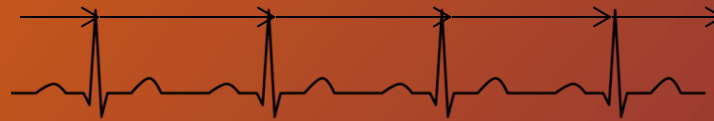
*(Single lead ECG measures **electrical** signals generated by the heart)*

- A problem with common consumer products is that they use optical sensors. These sensors make it difficult to detect exact beat times required for accurate HRV





HRV Calculations



RR Intervals



0.978516
0.982422
1.06641
1.06738
0.974609
1.05273

HRV Calculations



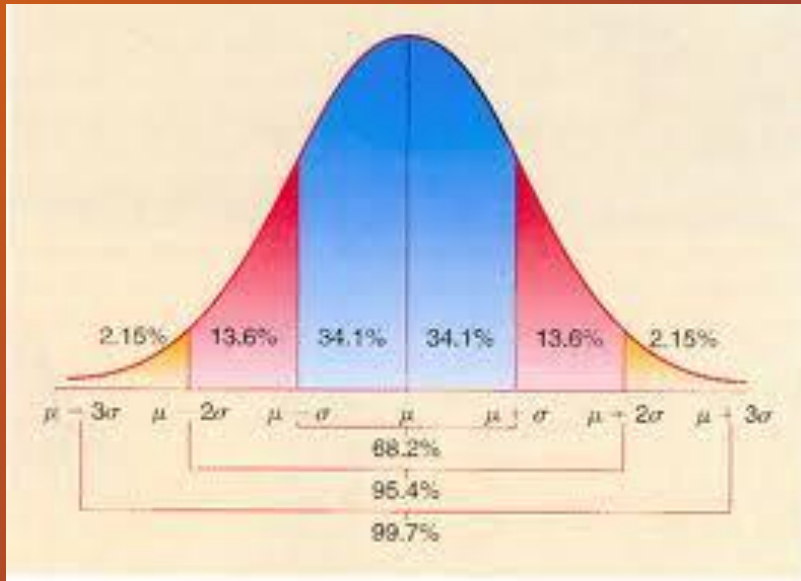
Statistical Frequency Non-Linear



HRV Statistical Analysis of RRs

- Standard Deviation – SDNN = General adaptability

- Root Mean Square of Successive Differences - RMSSD = Vagal Tone

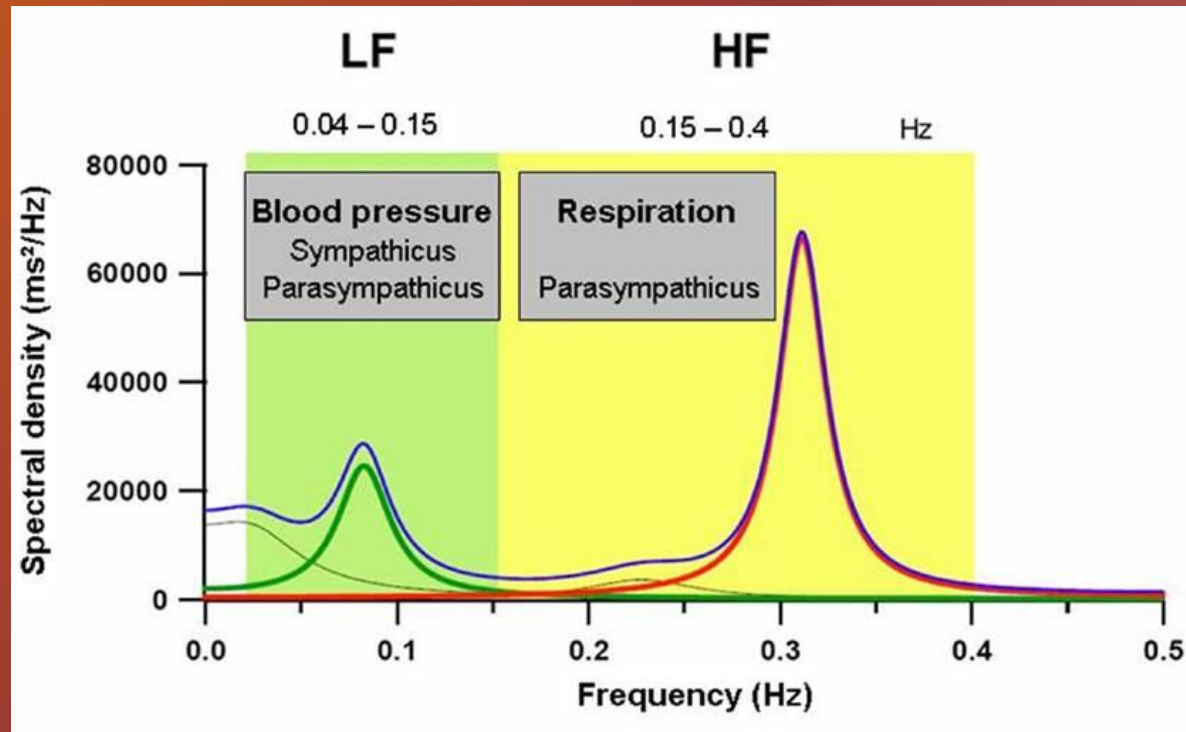


$$RMSSD = \sqrt{\frac{1}{N-1} \sum_{i=1}^N (RR_{i+1} - RR_i)^2}$$



HRV Frequency Analysis of RRs

- Low Frequency – LF = Sympathetic
- High Frequency – HF = Parasympathetic





rMSSD - HRV Value = Vagal Tone

- So, by measuring your HRV, you get a measurement of your Vagal Tone!
- RMSSD = Vagal Tone

$$RMSSD = \sqrt{\frac{1}{N-1} \sum_{i=1}^N (RR_{i+1} - RR_i)^2}$$



Vagal Tone Inhibitors

Poor Sleep



Alcohol Consumption



Bad Food &
Couch Potato
Lifestyle



Stress!





Food Sensitivities and Vagal Tone

- Imbalances in vagal tone can contribute to food sensitivities.
 - Reduced vagal tone may impair the body's ability to regulate inflammation and immune responses, potentially worsening food allergies.
- Conversely, the gut microbiome influences the Vagal Tone
 - Eating foods that one is sensitive to effects Microbiome and Vagal Tone
- Food Sensitivities can cause a histamine response disrupting the Parasympathetic Nervous System, which leads to increased heart rate, inflammation, digestion problems and more
- In summary, food sensitivities can indirectly impact vagal and vice versa.
 - It's important to know about any food sensitivities in order to preserve vagal tone and Metabolic Harmony!



Vagal Tone Enhancers



Yoga, Qi Gong



Good Food



Restorative Sleep



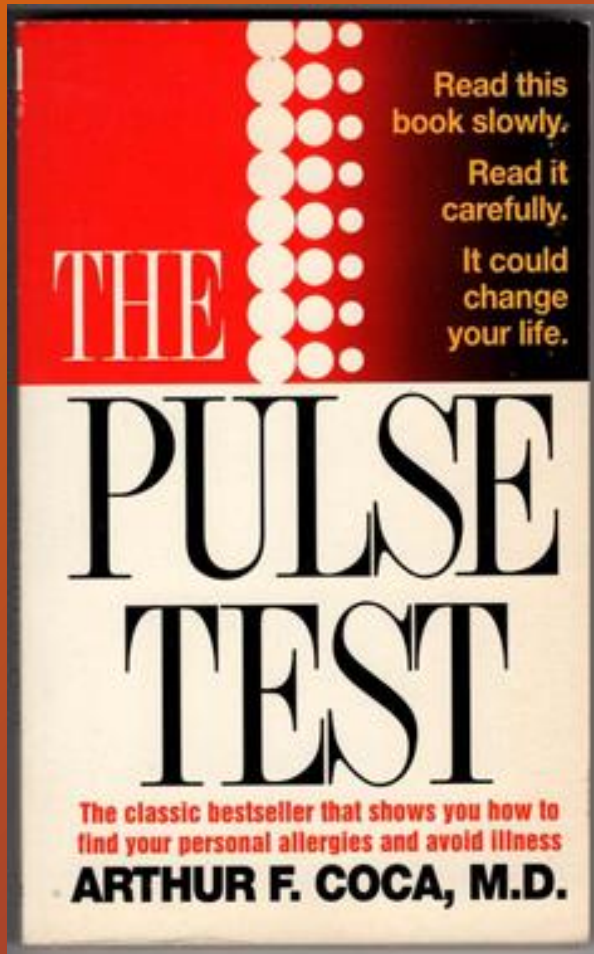
Meditation and
Breathing Exercises



High Intensity
Interval Training



Food Testing - Coca Pulse Test



Cardiovascular changes during peanut-induced allergic reactions in human subjects

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Abstract

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Background

Food allergy is the most common cause of anaphylaxis. Changes in posture during acute reactions can trigger fatal outcomes, but the impact of allergic reactions on the cardiovascular system in nonfatal reactions remains poorly understood.

Objective

Our aim was to systematically evaluate changes in cardiovascular function during acute allergic reactions to peanut.



Food & Metabolic Harmony

The Suspicious 7



Shellfish

Tree Nuts



Eggs



Peanuts



Milk/Dairy



Bread/Gluten

Soy





Example of Food & Vagal Tone





Improving Vagal Tone with VNS



It turns out you can strengthen your Vagus Nerve using a technique called Vagus Nerve Stimulation, or VNS.



VNS uses electrical impulses to stimulate the Vagus Nerve and has been clinically proven to treat:

Anxiety and Depression
Seizures
IBD/IBS –GI pain
Cluster Headaches/Migraines



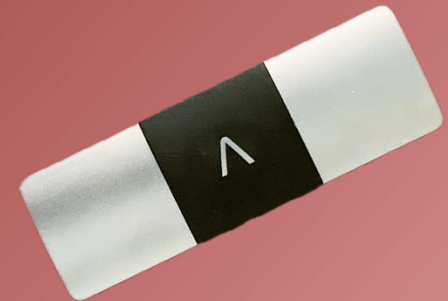
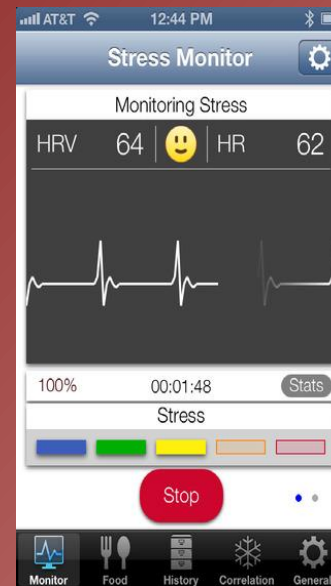
A strong Vagal Tone helps combat stress by “putting the breaks” on the Fight or Flight response, resulting in:

Better Sleep
More Resilience
Reduced anxiety
Better digestion



Strengthen & Measure Your Vagal Tone

- You can strengthen your Vagal Tone and measure the results in the comfort of your own home!
 - SweetWater Health's SweetBeatHRV iOS App
 - Handheld or Chest Strap Heart Rate Monitor
 - Food Effect Watch/FoodEffect Pulse iOS App
 - Neuvana Xen Vagus Nerve Stimulator

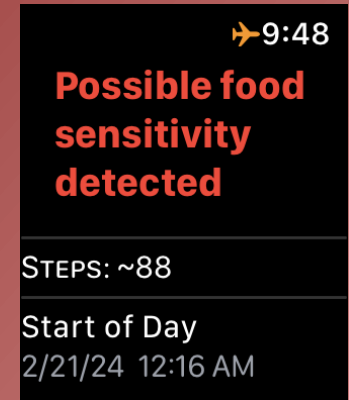
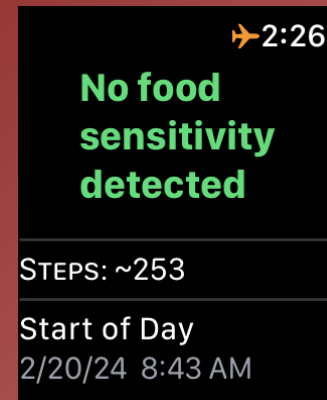
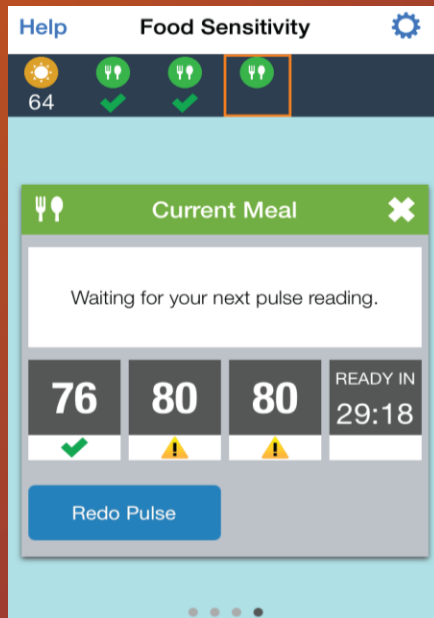




Food Sensitivity Testing

- Food Effect Pulse
 - Log Foods
 - Learn Sensitivities
 - Insights Provide

- Food Effect Watch
 - Simplest Way
 - Requires Manual logging





Metabolic Harmony + Free 30 Day Challenge

- Sign up for the FREE 30 Day Metabolic Harmony + Challenge
- Measure your Vagal Tone and practice techniques to improve and strengthen your Nervous System
- Sign up for our Mailing List and be entered to win a Polar H9 Heart Rate Monitor
- Weekly coaching and Q&A Zoom calls
- June 10 - July 1 2025
- Equipment Needed
 - iPhone/iPad/iPod Touch
 - Heart Rate Monitor
 - SweetBeatHRV App





Website/Apps Quick Links



SweetWaterHRV.com



SweetBeatHRV Appstore



Website/Apps Quick Links



FoodEffect Watch



DailyBeatHRV



Questions

Thank You!

WWW.SweetWaterHRV.com

