

Heart Rate Variability

Biohacker Report

REPORT CATEGORY —



Sample Client

Report date: 15 January 2026

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DISCLAIMER

This report does not diagnose this or any other health conditions. Please talk to a healthcare professional if this condition runs in your family, you think you might have this condition, or you have any concerns about your results.

Personal information

NAME

Sample Client

SEX AT BIRTH

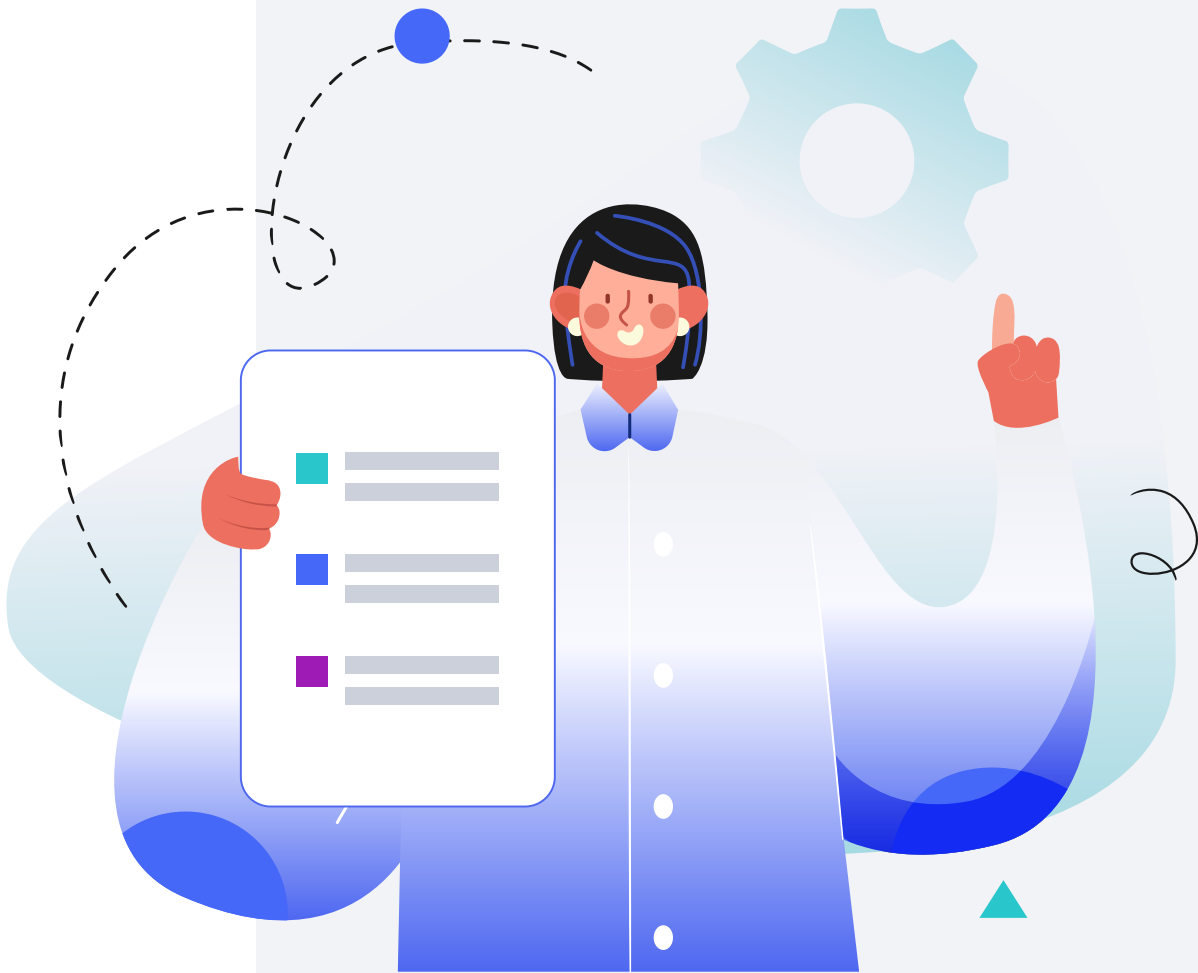
Male

HEIGHT

5ft 5" 165cm

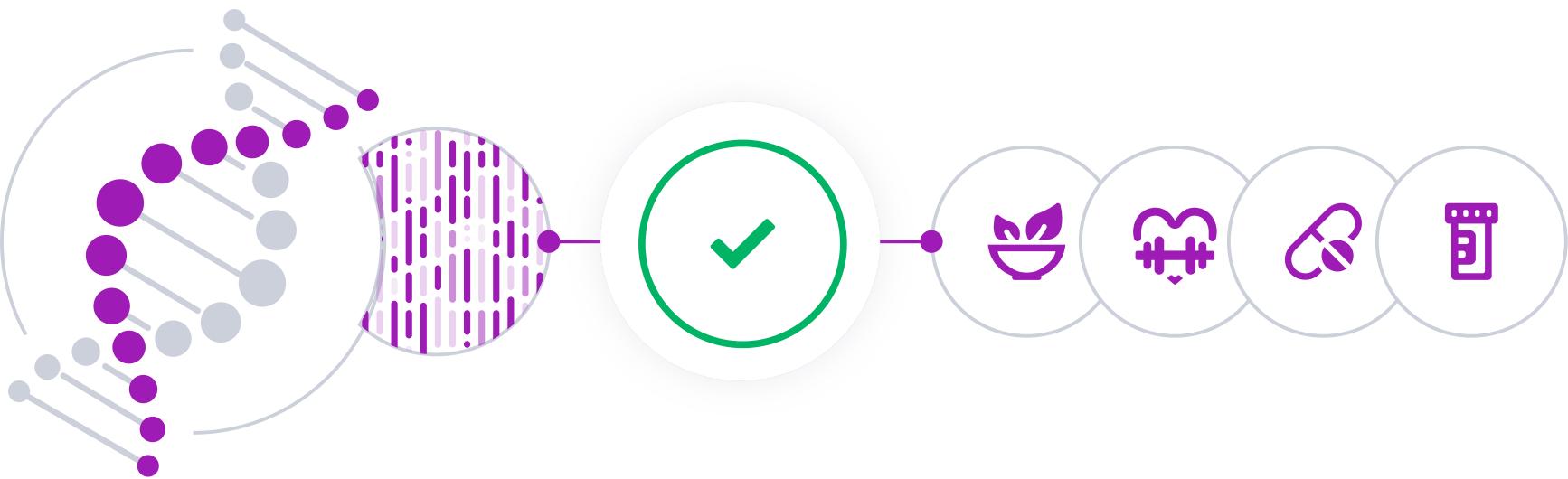
WEIGHT

137lb 62kg



How this works

Our Wellness Reports analyze how your DNA influences your health.
We then use this analysis to give you personalized risk estimates and recommendations.

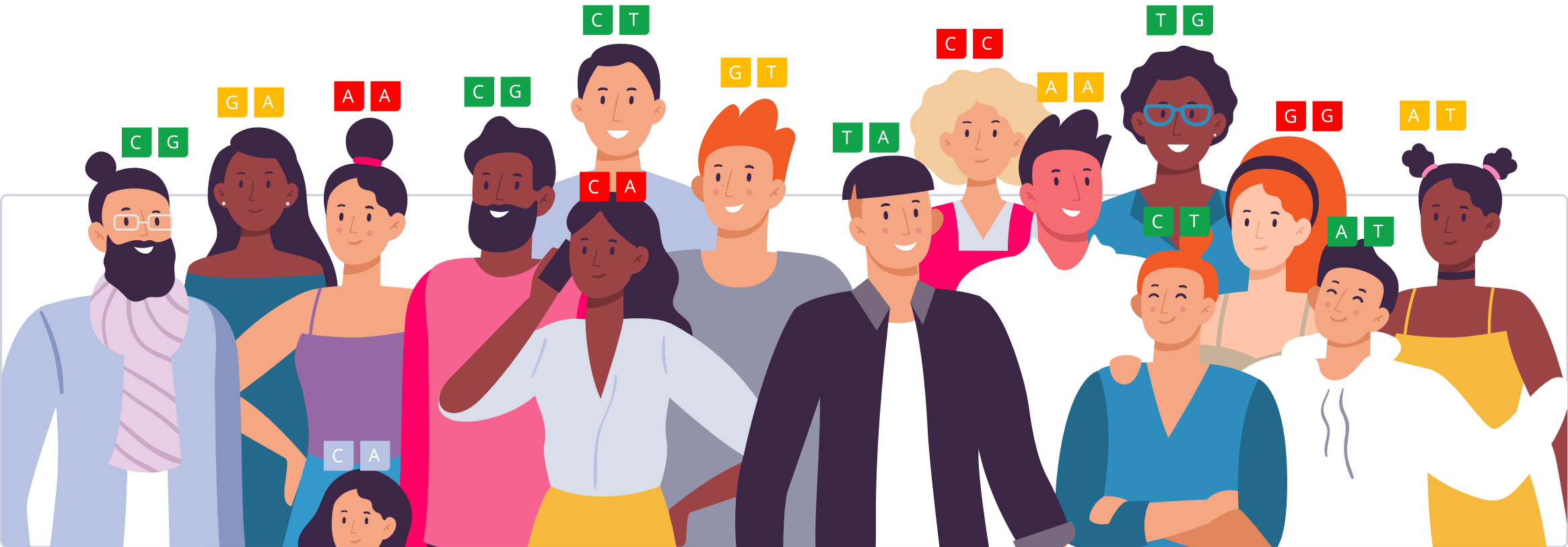


Similarly, our Trait Reports look at how your DNA influences your traits.



Your DNA is like an instruction manual — it contains a lot of information.
You can think of it as a blueprint for your body.

Genetic variants are parts of DNA that differ from person to person. Some can make you more vulnerable to certain health issues, while others may influence traits such as eye color.



We use artificial intelligence and machine learning to analyze all this information.
We then summarize your results as a risk score or display it on a gauge.

In total, we analyze up to 83 million genetic variants.

When we give a risk score, the risk icon tells you if you are at a higher or lower risk compared to other people:



Genotype color info:

AA

You don't have any risk alleles

AA

You have 1 risk allele

AA

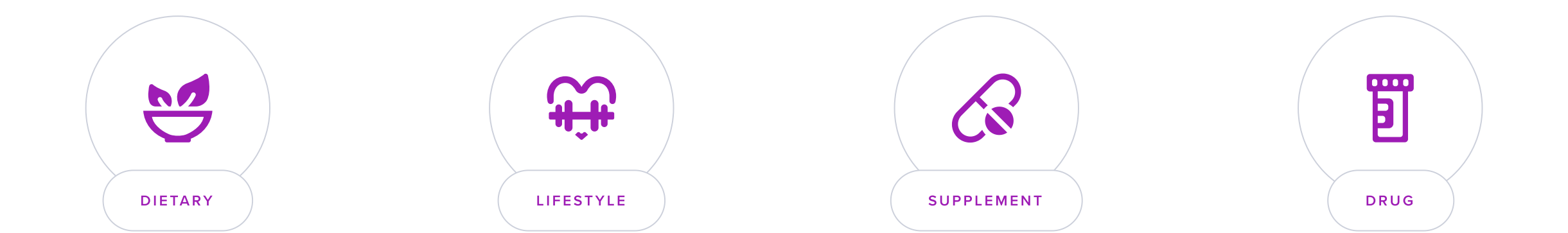
You have 2 risk alleles

Your risk is also displayed as a percentile. This will tell you how your risks compare to our sample population. The lower your percentile number, the lower your risk. The "50th percentile" would be an average risk.

Similarly, the gauge tells you your relative risk score compared to our sample population, or it indicates a specific trait or haplotype you are more likely to have based on your genetic variants.

When applicable, we also list top evidence-based recommendations that may help lower your risk. The focus is on recommendations that may be of benefit to you, based on your genetics.

Our recommendations come in four categories: lifestyle, diet, supplements and drugs.
The following icons tell you which category a recommendation falls into:



Our team of scientists also ranks each recommendation.
We rank based on impact and the strength of evidence in the medical literature.

Impact shows how strongly a recommendation will affect your health in a certain area.
Evidence is how much scientific support there is for the recommendation. Rankings are from 1 to 5 (low to high):



Impact

Impact scores range from 1-5. These scores reflect how much of an effect each recommendation can have. An impact score of 5 predicts the biggest effect.

When a recommendation affects something we can measure, we use those measurements to assign the impact score. For example, a recommendation that decreases cholesterol by 20% will have a higher impact score than one that decreases it by 5%.

Some recommendations affect things that we cannot directly measure, like stress or mood. For these, the impact score is based on how well they work relative to other recommendations and standard treatments. The best ones get the highest scores.

If there is a lot of research that shows a recommendation works especially well for your genotype, the impact score gets increased.

Recommendation Evidence

- 5 / 5
- Recommendations that are considered effective and generally recommended by experts and medical bodies.
-
- 4 / 5
- Recommendations that are considered likely effective and that have multiple independent meta-analyses and a great many studies supporting them.
-
- 3 / 5
- Recommendations that are considered possibly effective and have many studies supporting them
-
- 2 / 5
- Recommendations that have insufficient evidence, with two or several clinical trials supporting them, or many studies but with ambiguous results.
-
- 1 / 5
- Recommendations that have insufficient evidence, with a single clinical trial, or with many studies most of which didn't find support for the recommendation.
-
- 0 / 5
- No evidence in humans.

Genotype-specific Evidence

- High-quality
- Direct evidence that a recommendation helps more in people with your gene variant (many clinical trials, a few large clinical trials, or a meta-analysis).
-
- Medium-quality
- Direct evidence that a recommendation helps more in people with your gene variant (a few clinical trials or one large clinical trial).
-
- Low-quality
- Direct evidence that a recommendation helps more in people with your gene variant (a single clinical trial or more trials with inconsistent results).
-
- Indirect
- A recommendation may help more in people with your gene variant because it targets a specific gene or protein affected by your variant (e.g., MTHFR, dopamine).
-
- In theory
- A recommendation may help more in people with your gene variant because it targets a specific mechanism affected by your variant (e.g., inflammation, oxidative stress).

Some things to keep in mind:

- Genetics doesn’t play a considerable role in a condition or a trait.
- There is not enough research available to estimate a genetic predisposition.
- There are technical limitations to estimating or presenting a genetic predisposition.
- The topic is sensitive, and a genetic predisposition should only be estimated and presented by a healthcare professional.

Introduction

Heart rate variability (HRV) is the variation in time between heartbeats.

The heart doesn’t keep the same rhythm from one heartbeat to the next. Instead, the time between heartbeats is constantly changing. HRV is a measure of those changes [R].

The autonomic nervous system (ANS), especially the [vagus nerve](#), controls involuntary body functions, such as:

- Heartbeat
- Breathing
- Digestion

Hence, HRV reflects how well your vagus nerve is working. In a nutshell, the higher the HRV, the higher the vagus nerve activity [R, R].

HRV reflects your body’s ability to adapt to its environment. When your heart rate varies more, you are better prepared to handle changing activities and challenges [R].

Additionally, higher HRV is indicative of [R]:

- Feeling relaxed
- Greater aerobic fitness
- Better health
- Younger age

On the other hand, genetically higher HRV may play a role in the development of arrhythmia [R].

HRV can be measured with [R]:

- Electrocardiogram machines
- Home chest-monitors
- Wrist-worn fitness devices and trackers

The latter devices may not be as sensitive and accurate [R].

There are no official ranges for HRV, and it may not always be a reliable marker of health and fitness. With this in mind, you should take your results with a grain of salt [R, R, R, R].

Factors Influencing HRV

Key Takeaways:

- HRV reflects how adaptable our bodies are.
- People with higher HRV tend to be more relaxed, healthier, and in better shape.
- Up to **60%** of differences in people's HRV may be due to genetics.
- Besides genetics, our emotions, fitness level, physical and mental health, and age influence HRV.
- The relevance of HRV as a health indicator is still being studied.

The heart doesn't keep the same rhythm from one heartbeat to the next. Instead, the time between heartbeats is constantly changing. HRV is a measure of those changes [R].

Up to **60%** of differences in people's HRV may be due to genetics. Involved genes may also influence heart rate and blood pressure [R, R, R]. Genetically higher HRV may be causally associated with [R, R, R]:

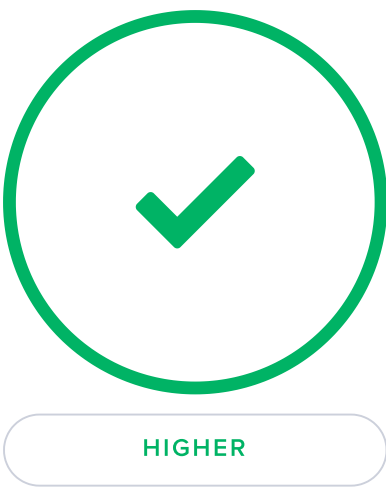
- Atrial fibrillation
- Heart attack
- High blood pressure (diastolic)

Many other internal and external factors influence HRV, including [R, R, R]:

- Emotions
- Personality
- Physical fitness
- Race
- Health condition

Factors linked to **lower HRV** include:

- Overtraining [R, R]
- Stress [R, R, R]
- Sleep disturbances [R, R, R]
- Alcohol consumption and smoking [R, R, R, R]



Predisposed to higher HRV based on 1,286 genetic variants we looked at

Your top variants that most likely impact your genetic predisposition:

GENE	SNP	GENOTYPE
SOX5	rs10842383	CC
NEO1	rs2680344	AA
TGM2	rs6123471	TT
SYT10	rs1351682	GA
CCDC141	rs13004438	TT
SYT10	rs7980799	AC
RBFOX1	rs4786125	AA
SYT10	rs1384598	TA
CAPS	rs12974440	GG
CAPS	rs12974991	GG
PPIL1	rs236349	AA
GNG11	rs4262	TT
RGS6	rs36423	GG
TMPRSS4	rs677652	CC
NDUFA11	rs12980262	GG
NEO1	rs1812835	CC
RGS6	rs2529471	AA
RGS6	rs2052015	CC
TFPI2	rs180238	TT
RGS6	rs4899412	CC

The number of "risk" variants in this table doesn't necessarily reflect your overall result.

- Air pollution [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#)
- Some drugs (e.g., antidepressants) [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#)
- Anxiety and depression [\[R\]](#), [\[R\]](#)
- Many health conditions (e.g., diabetes and thyroid disorders) [\[R\]](#), [\[R\]](#), [\[R\]](#)
- Inflammation and obesity [\[R\]](#), [\[R\]](#), [\[R\]](#)
- Aging [\[R\]](#)

Thankfully, there are a number of ways to increase HRV. One thing to keep in mind is that you should focus on improving your physical health, mental health, and fitness in general. HRV is just a marker that will reflect those changes.

Your Recommendations

Your recommendations are prioritized according to the likelihood of it having an impact for you based on your genetics, along with the amount of scientific evidence supporting the recommendation.

You’ll likely find common healthy recommendations at the top of the list because they are often the most impactful and most researched.

DOSAGE		DOSAGE			
1	Aerobic Exercise (Cardio)	1 hour	2	Exercise At Least One Hour a Day	1 hour
3	Avoid Air Pollution		4	Biofeedback	
5	HRV Biofeedback	10 minutes	6	Sleep for 7+ Hours	
7	Relaxation Techniques	30 minutes	8	Strength Training	1 hour
9	Breathing Techniques	10 minutes	10	Omega-3 (Fish Oil)	500 mg
11	Deep Breathing	5 minutes	12	Tai Chi	1 hour
13	Nerve Stimulation	30 minutes	14	Autogenic Training	10 minutes
15	Progressive Muscle Relaxation	10 minutes	16	Alternate Nostril Breathing	10 minutes
17	Choose Healthy Fats		18	Yoga	30 minutes
19	Mindfulness	30 minutes	20	Acupuncture	1 hour
21	Binaural Beats	30 minutes	22	Tryptophan	500 mg
23	Maintain a Regular Meal Schedule		24	Mediterranean Diet	
25	L-Citrulline	3 g	26	Yoga Nidra	30 minutes
27	Taurine	500 mg	28	Watermelon	
29	Limit Saturated Fat		30	Almonds	
31	Saffron	20 mg	32	Diaphragmatic Breathing	10 minutes

33	Alpha-GPC Choline	300 mg	34	Amaranth	
35	Lemon Balm	500 mg	36	Magnesium	350 mg
37	Pistachios		38	Bhastrika Yoga (Bellows Breathing)	5 minutes
39	Sheetali Pranayama Breathing	10 minutes			

1



Aerobic Exercise (Cardio)

IMPACT

5 / 5

EVIDENCE

5 / 5

How to implement

Engage in at least 150 minutes of moderate-intensity aerobic exercise or 75 minutes of vigorous-intensity activity each week. Distribute this time over at least 3 days per week, avoiding consecutive days of vigorous exercise to allow for recovery.

TYPICAL STARTING DOSE

1 hour

Description

Engaging in regular aerobic exercise, such as running, swimming, or cycling, offers numerous health benefits, including improved cardiovascular fitness, weight management, and mood enhancement. It supports overall physical and mental well-being while reducing the risk of chronic diseases.

Cardio, short for cardiovascular exercise, is any type of physical activity that temporarily increases your heart rate. Examples include **running, cycling, swimming, and brisk walking**.

Regular cardio exercise has many benefits for your overall health. It can help lower your risk of heart disease and diabetes, support weight loss, and improve your mood and energy levels. To get the most out of cardio, try to do it for at **least 30 minutes, 3-5 times a week**.

Interval training is a type of cardio that combines periods of high-intensity training with brief rest periods.

How it helps

Regular exercise is associated with a higher HRV [\[R, R\]](#).

Different exercise types may help increase HRV. Among them, aerobic exercise may offer the greatest benefit and strength training the smallest one [\[R, R\]](#)

People that may benefit the most from exercise are those are [\[R, R, R, R\]](#):

- Young
- Sedentary

HRV may increase the most by exercising at least 3x/week for at least 12 weeks [\[R, R, R\]](#).

2

Exercise At Least One Hour a Day

IMPACT

4 / 5

EVIDENCE

5 / 5

How to implement

Dedicate a minimum of 60 minutes to moderate-intensity activities such as brisk walking, swimming, or cycling. Do this most days of the week, aiming for at least 5 days to optimize benefits.

TYPICAL STARTING DOSE

1 hour

Description

[Exercise](#) can do wonders for your health. It can help you lose weight, improve your heart health, boost your mood, and more [\[R\]](#).

There are many ways you can be active. You can walk, run, swim, dance, or play team sports. **Everything counts, and it's never too late to start!**

Try to get at least **60 minutes of moderate physical activity on most days**, including walking. **Getting a mix of cardio (min 150 min/day) and strength training (min 2 times a week) may be optimal.**

How it helps

Regular exercise is associated with a higher HRV [\[R, R\]](#).

Different exercise types may help increase HRV, including [\[R, R, R, R\]](#):

- Aerobic exercise
- High-intensity interval training (HIIT)
- Medium-intensity interval training (MIIT)
- Strength training

Aerobic exercise may offer the greatest benefit and strength training the smallest one [\[R, R\]](#)

People that may benefit the most from exercise are those who are [\[R, R, R, R\]](#):

- Young
- Sedentary

HRV may increase the most by exercising at least 3x/week for at least 12 weeks [\[R, R, R\]](#).

3



Avoid Air Pollution

IMPACT

4 / 5

EVIDENCE

5 / 5

How to implement

Stay indoors on days when air quality indexes (AQI) indicate high pollution levels, which are often reported by weather services or government environmental agencies. **Install air purifiers** in your home, especially in bedrooms, to reduce indoor pollutants. Limit outdoor exercise when air pollution warnings are issued, opting for indoor activities instead.

Description

Avoiding air pollution by reducing exposure to pollutants in the environment is essential for respiratory and overall health. It can help lower the risk of respiratory diseases, cardiovascular conditions, and other health issues associated with poor air quality.

While city life is convenient in a lot of ways, it comes with some health hazards. Cars, factories, and other sources increase air [pollution](#) ^[R].

Air pollution plays a role in [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Lung disease
- Heart disease
- Diabetes
- Asthma
- Skin conditions

How it helps

Exposure to air pollutants is associated with decreased HRV [\[R\]](#).

Air pollution may decrease HRV by altering the activity of the autonomic nervous system. The longer the exposure, the more HRV may decrease. Studied air pollutants include [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Particulate matter
- Ozone
- Polycyclic aromatic
- Carbon monoxide
- Carbon disulfide
- Diesel exhaust

Tips for lowering exposure to air pollution include [\[R\]](#), [\[R\]](#):

- Monitoring air pollution levels regularly
- Avoiding outdoor exercise when pollution levels are high
- Cleaning and maintaining air filtration systems
- Not burning wood or trash
- Using protective respiratory equipment at work, if needed

Omega-3 fatty acids (2,000 mg/day for 5 months) may also prevent HRV from falling due to air pollution [\[R\]](#).

 PERSONALIZED TO YOUR GENES

Exposure to air pollution may decrease HRV more in people with your [IL6](#) gene variant [\[R\]](#).

YOUR GENETIC VARIANTS			
GENE	SNP	GENOTYPE	EVIDENCE
IL6	rs1800795	GG	

4



Biofeedback

IMPACT

4 / 5

EVIDENCE

4 / 5

How to implement

Attend biofeedback sessions once or twice a week for about 8 to 10 weeks. During these sessions, a therapist will guide you through exercises to control different body functions, such as heart rate or muscle tension, using monitors that provide feedback on your physiological state. Practice the techniques learned during sessions at home daily to improve symptoms and manage your condition.

Description

Biofeedback is a type of therapy that teaches people how to control certain body functions, such as heart rate, blood pressure, and muscle tension. It can be used to treat a variety of conditions, including stress, anxiety, and chronic pain.

Biofeedback is a kind of “**brain training**” in which sensors are attached to your body. They detect information like your heart rate, temperature, and breathing rate. By seeing this information, you may be better able to control these functions [\[R\]](#), [\[R\]](#).

Biofeedback is used to help with [\[R\]](#), [\[R\]](#):

- Gut problems
- Chronic pain
- Migraines
- Insomnia
- Attention

[Neurofeedback](#) is a form of biofeedback that measures brain activity in real time [\[R\]](#).

How it helps

Biofeedback training may help increase HRV. Most studies used HRV-biofeedback, which involves slow breathing [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#).

Biofeedback may help by stimulating the autonomic nervous system (ANS), which controls the heartbeat [\[R\]](#).

5



HRV Biofeedback

IMPACT

4 / 5

EVIDENCE

4 / 5

How to implement

Practice HRV biofeedback sessions for 10-20 minutes daily, ideally with the guidance of a trained professional or using a reliable app that measures your heart rate variability. Focus on controlled breathing techniques during these sessions to improve your HRV over time.

TYPICAL STARTING DOSE

10 minutes

Description

Heart rate variability (HRV) biofeedback is a technique that helps individuals manage stress and improve their overall well-being by training them to regulate their heart rate variability. It can enhance emotional resilience and reduce the impact of stress on the body.

How it helps

By providing real-time feedback on heart rate variability, biofeedback can help individuals learn to control and improve their HRV.

Biofeedback training may help increase HRV. Most studies used **HRV-biofeedback**, which involves slow breathing [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#).

Biofeedback may help by stimulating the autonomic nervous system (ANS), which controls the heartbeat [\[R\]](#).

6



Sleep for 7+ Hours

IMPACT

4 / 5

EVIDENCE

3 / 5

How to implement

Ensure you allocate enough time in your schedule to achieve a minimum of 7 hours of sleep each night. This might involve going to bed earlier or adjusting your evening routine to promote relaxation and make it easier to fall asleep.

Description

Optimizing sleep involves adopting healthy sleep habits and creating a sleep-conducive environment to ensure restorative and sufficient sleep duration. It supports cognitive function, mood stability, and overall physical health. Most experts recommend getting **at least 7 hours of good-quality sleep each night**.

[Sleep](#) supports your body and mind [\[R\]](#) [\[R\]](#). More precisely, sleep helps:

- Support brain health [\[R\]](#) [\[R\]](#)
- Maintain a healthy weight and appetite [\[R\]](#) [\[R\]](#) [\[R\]](#)
- Regulate blood pressure [\[R\]](#) [\[R\]](#)
- Balance blood sugar [\[R\]](#) [\[R\]](#)

Ways to sleep better include [\[R\]](#):

- Reducing your bright light exposure (screen time) in the evenings
- Sticking to a regular sleep schedule
- Avoiding hunger or large meals before bed
- Avoiding nicotine, caffeine, and alcohol before bed
- Maintaining a sleep area that’s cool, dark, and quiet

How it helps

Optimizing sleep can help increase your HRV, or Heart Rate Variability, because good sleep helps regulate the balance between your body's fight-or-flight and rest-and-digest nervous systems, enabling better recovery and reducing stress on the heart.

Acute stress is associated with decreased parasympathetic modulation and increased sympathetic balance during sleep, potentially leading to disturbed sleep [\[R\]](#).

Low sleep quality in children leads to an unhealthier heart rate variability pattern (sympathetic over parasympathetic dominance) [\[R\]](#).

Many other studies have confirmed the link between sleep quality and HRV [\[R\]](#) [\[R\]](#) [\[R\]](#).

7



Relaxation Techniques

IMPACT

3 / 5

EVIDENCE

5 / 5

How to implement

Incorporate relaxation techniques such as deep breathing exercises, meditation, or yoga into your daily routine. Spend at least 15-30 minutes each day practicing one of these techniques, preferably in a quiet, comfortable space without interruptions.

TYPICAL STARTING DOSE

30 minutes

Description

Relaxation techniques encompass various methods like deep breathing, yoga, meditation, and progressive muscle relaxation, aimed at reducing stress and promoting mental and physical relaxation. Practicing these techniques regularly can help manage stress, improve mental clarity, and enhance overall emotional well-being.

We all get stressed from time to time.

[Stress](#) can help you deal with a challenge or avoid danger. However, **it’s not healthy to be stressed for a long time** [\[R\]](#), [\[R\]](#).

Relaxation techniques such as [yoga](#) and [meditation](#) can relieve stress in different ways. Most of them focus on breathing and help you get rid of negative thoughts and emotions [\[R\]](#).

People use relaxation techniques to improve conditions like [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Anxiety
- Depression
- Chronic pain

Progressive muscle relaxation is another relaxation technique. In this technique, you focus on tensing and relaxing different parts of your body. It is common to start with the toes and slowly work your way up to the neck and head [\[R\]](#), [\[R\]](#).

Autogenic training is a relaxation technique that a person may carry out on their own. It uses exercises that take the mind’s attention to bodily sensations such as warmth and heaviness [\[R\]](#), [\[R\]](#).

How it helps

Stress may reduce HRV. Studied stressful situations or events include [\[R\]](#):

- Public speaking [\[R\]](#), [\[R\]](#), [\[R\]](#)
- Office work [\[R\]](#)
- Mental stress [\[R\]](#), [\[R\]](#)
- Fire simulation [\[R\]](#)
- Social stress [\[R\]](#)
- Surgeries [\[R\]](#)
- Discrimination [\[R\]](#)

In line with these, the following relaxation techniques may increase HRV, including [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Slow breathing [\[R\]](#).
- Mindfulness [\[R\]](#)
- Yoga [\[R\]](#), [\[R\]](#), [\[R\]](#)

However, not all studies found an effect of mindfulness or yoga on HRV [\[R\]](#), [\[R\]](#).

8

Strength Training

IMPACT3 / 5

EVIDENCE4 / 5

How to implement

Engage in strength training exercises, such as weight lifting or bodyweight exercises, for 60 minutes per session, 2 to 3 times per week. Ensure you work all major muscle groups and rest each muscle group for at least 48 hours before exercising it again.

TYPICAL STARTING DOSE

1 hour

Description

Strength training, also called resistance or *anaerobic* training, contracts the muscles against an external resistance for short periods of time. This helps gain muscle strength, tone, and mass. This can include activities like weight lifting, pushups, and crunches.

Strength training, also known as resistance training, is a type of physical exercise that uses resistance to build strength, anaerobic endurance, and size [R]. Some of the most common strength training methods include [R]:

- Weight lifting
- Bodyweight exercises like push-ups, pull-ups, squats, and lunges.
- Resistance bands
- Plyometrics or explosive force exercises

The benefits of strength training are numerous, and include [R]:

- Increased muscle strength
- Improved bone health
- Reduced risk of injury
- Improved balance and coordination
- Enhanced mood
- Boost metabolism

Consult with a doctor before starting any new exercise program, especially if you have any health conditions.

How it helps

Regular exercise is associated with a higher HRV [R, R].

Different exercise types may help increase HRV, including [R, R, R, R]:

- Aerobic exercise
- High-intensity interval training (HIIT)
- Medium-intensity interval training (MIIT)
- Strength training

Aerobic exercise may offer the greatest benefit and strength training the smallest one [R, R]

People that may benefit the most from exercise are those who are [R, R, R, R]:

- Young
- Sedentary

HRV may increase the most by exercising at least 3x/week for at least 12 weeks [R, R, R].

9



Breathing Techniques

IMPACT

3 / 5

EVIDENCE

3 / 5

How to implement

Practice deep breathing exercises for 10 minutes daily, preferably in a quiet space where you won't be disturbed. Sit or lie down in a comfortable position, slowly inhale through your nose, allowing your chest and lower belly to rise, hold the breath for a moment, and then exhale slowly through your mouth or nose. This can be done at any time of day to reduce stress and improve focus.

TYPICAL STARTING DOSE

10 minutes

Description

Breath awareness and specific breathing techniques, such as deep breathing or mindfulness-based practices, can help reduce stress, improve focus, and enhance overall mental well-being. These techniques are valuable tools for managing anxiety and promoting relaxation.

Most breathing techniques involve taking slow and even breaths. Their main goal is to prevent rapid breathing (**hyperventilation**) [\[R\]](#).

Breathing techniques tend to help with [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Stress
- Anxiety
- Sleep problems
- Asthma

One example is the **Buteyko breathing technique**. It's often used by people with asthma or other conditions that affect the lungs [\[R\]](#).

Another example is **yogic breathing**. [Yoga](#) is a practice that combines breathing techniques with exercise and meditation [\[R\]](#), [\[R\]](#).

How it helps

Breathing techniques, like deep and slow breathing, can trigger our body's relaxation response, regaining balance in the autonomic nervous system. This helps improve heart rate variability, reducing the risk of heart disease.

Breathing exercises may help increase HRV [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#).

Slow breathing increases HRV according to a large [meta-analysis of 223 studies](#) [\[R\]](#).

10



Omega-3 (Fish Oil)

IMPACT3 / 5

EVIDENCE3 / 5

How to implement

Take 1-2 g of omega-3 (fish oil) supplement daily, preferably with a meal to enhance absorption.

TYPICAL STARTING DOSE

500 mg

Description

Omega-3 fatty acids are essential fats found in fatty fish like salmon, flaxseeds, and walnuts. They are known for their potential cardiovascular and brain health benefits, including reducing the risk of heart disease and supporting cognitive function.

[Omega-3 fatty acids](#) are some of the healthiest fats we can eat. They help lower inflammation and protect the heart, brain, and eyes. Our bodies produce less omega-3s than we need for optimal health, so it's important to get enough through food or supplements [\[R\]](#), [\[R\]](#), [\[R\]](#).

There are three major types of omega-3s: ALA, EPA, and DHA [\[R\]](#), [\[R\]](#).

Fatty fish are rich in EPA and DHA. They include [\[R\]](#):

- Salmon
- Tuna
- Herring
- Sardines

For optimal protection, try to get at least **two servings of fatty fish per week**. Fish oil supplements are available for those who don't eat fish regularly [\[R\]](#).

How it helps

Fish oil (1,300-3,400 mg/day for 2-3 months) may improve HRV by increasing the activity of the vagus nerve [\[R\]](#).

Omega-3 fatty acids (2,000 mg/day for 5 months) may also prevent HRV from falling due to air pollution [\[R\]](#).

Please note: *Omega-3s can interact with blood thinners (like aspirin, Plavix, Coumadin). Consult your doctor before taking omega-3s* [\[R\]](#).

11



Deep Breathing

IMPACT

3 / 5

EVIDENCE

2 / 5

How to implement

Practice deep breathing exercises for 5-10 minutes at least twice a day, ideally in the morning and before bed. Sit or lie down in a comfortable position, slowly inhale through your nose, allowing your chest and lower belly to rise, hold the breath for a moment, and then exhale slowly through your mouth or nose.

TYPICAL STARTING DOSE

5 minutes

Description

Deep breathing techniques, such as diaphragmatic or abdominal breathing, can promote relaxation, reduce stress, and improve lung capacity. Regular deep breathing exercises can contribute to overall mental and physical well-being by reducing tension and increasing oxygen supply to the body.

How it helps

Slow breathing increases HRV according to a large [meta-analysis of 223 studies](#) [R].

A study in 18 healthy subjects found that one month of daily deep breathing exercise (6 breaths/min) significantly reduced respiratory rate, mean arterial pressure, and enhanced heart rate variability, suggesting its positive impact on cardiac function without affecting the sympathovagal balance [R].

In a pilot randomized trial of 18 healthy males exposed to work-related stress, short-duration biofeedback-induced deep breathing induced a short-term carry-over effect during both the following rest period and laboratory-induced stress suggesting maintained HF vagal modulation [R].

Deep breathing exercises can enhance HRV by engaging the vagus nerve, which regulates the heart rate.

12



Tai Chi

IMPACT

2 / 5

EVIDENCE

3 / 5

How to implement

Practice Tai Chi for 30 to 60 minutes at least twice a week. Choose a quiet, spacious area and follow along with a qualified instructor, either in person at a class or through an online video tutorial, to ensure proper technique and maximum benefit.

TYPICAL STARTING DOSE

1 hour

Description

Tai Chi is a traditional Chinese mind-body practice involving slow, flowing movements and deep breathing. It is known for its potential to reduce stress, improve balance, and enhance overall physical and mental well-being.

Tai chi involves gentle movements and breathing to strengthen and relax the mind and body. Practicing tai chi may help [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Manage pain
- Improve fitness
- Increase well-being
- Improve sleep and mood

How it helps

Tai Chi's gentle movements combined with breath control can increase heart rate variability.

According to 2 meta-analyses, tai chi improves heart rate variability parameters and reduces perceived stress [\[R\]](#), [\[R\]](#).

13



Nerve Stimulation

IMPACT2 / 5

EVIDENCE3 / 5

How to implement

Nerve stimulation can be implemented by daily sessions of 15-30 minutes using a device specifically designed for this purpose. These devices often use electrical currents to stimulate nerves through the skin, which can be adjusted in intensity according to comfort. It's important to consult a healthcare provider for guidance on the specific type of nerve stimulation that may be most beneficial for your condition.

TYPICAL STARTING DOSE

30 minutes

Description

Nerve stimulation techniques involve the use of electrical impulses, like transcutaneous electrical nerve stimulation (TENS) or other methods to activate nerves, potentially providing relief from chronic pain, improving muscle function, and aiding in physical therapy.

Health professionals can stimulate your nerves using different strategies [\[R\]](#).

Many strategies use magnetic fields or electric currents. Examples include [\[R\]](#), [\[R\]](#), [\[R\]](#):

- [Transcutaneous electrical nerve stimulation](#) (TENS)
- Transcranial direct current stimulation (tDCS)
- Transcranial magnetic stimulation (TMS)
- Transcutaneous auricular vagus nerve stimulation (taVNS)

Nerve stimulation may improve [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Cognition
- Mood
- Pain
- Seizures
- Tinnitus

How it helps

Nerve stimulation may increase HRV. Some studied modalities include [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#):

- tDCS
- TMS
- tPCS

14



Autogenic Training

IMPACT2 / 5

EVIDENCE2 / 5

How to implement

Practice autogenic training for 10-15 minutes daily, ideally in a quiet, comfortable space where you won't be disturbed. Sit or lie down in a comfortable position, close your eyes, and focus on calming your mind and body through self-suggested affirmations. Repeat this routine daily for at least 2-3 months to observe beneficial effects on stress reduction and relaxation.

TYPICAL STARTING DOSE

10 minutes

Description

Autogenic training is a relaxation technique that involves self-suggestion and progressive muscle relaxation to promote relaxation, reduce stress, and alleviate symptoms of anxiety and tension.

Autogenic training is a relaxation technique that a person may carry out on their own [\[R\]](#), [\[R\]](#).

Autogenic training uses 6 exercises that take the mind’s attention to bodily sensations such as warmth and heaviness. The exercises involve guided imagery and verbal cues (e.g. "My arm is very heavy") to [\[R\]](#), [\[R\]](#):

- Relax the body
- Quiet and calm the mind
- Increase energy

How it helps

Autogenic training may help increase HRV in healthy people and those with mental and heart health issues [\[R\]](#), [\[R\]](#), [\[R\]](#).

One study found no improvements in HRV after autogenic training in healthy nursing students [\[R\]](#).

15



Progressive Muscle Relaxation

IMPACT

2 / 5

EVIDENCE

2 / 5

How to implement

Set aside at least 10-15 minutes daily in a quiet, comfortable spot where you won't be disturbed. Start by tensing the muscles in your feet for 5 seconds, then relax for 30 seconds, and progressively work your way up through the major muscle groups of your body, tensing then relaxing each for 5 and 30 seconds respectively.

TYPICAL STARTING DOSE

10 minutes

Description

Progressive Muscle Relaxation is a relaxation technique involving the systematic tensing and releasing of muscle groups to reduce muscle tension, stress, and anxiety. Regular practice can lead to improved physical and mental relaxation.

Progressive muscle relaxation is a relaxation technique focused on releasing muscle tension. In this technique, you focus on tensing and relaxing different parts of your body, one after the other, to relieve stress [R](#), [R](#)].

It is common to start with the toes and slowly work your way up to the neck and head. Try to focus on a single muscle group at a time (for example, the calf muscles). Tense these muscles for 5-10 seconds, then relax for 20-30 seconds before moving on to the next muscle group [R](#), [R](#)].

How it helps

This technique systematically relaxes muscles, which can help reduce stress and improve HRV.

Studies have found a potential of progressive muscle relaxation to increase HRV in people with [R](#), [R](#), [R](#)]:

- High stress levels
- Asthma
- Heart disease

16



Alternate Nostril Breathing

IMPACT

2 / 5

EVIDENCE

2 / 5

How to implement

Sit comfortably with your back straight. Close your right nostril with your right thumb and inhale slowly through the left nostril. Close the left nostril with your fingers, then exhale slowly through the right nostril. Keeping the left nostril closed, inhale through the right nostril. Then, close the right nostril and exhale through the left. This completes one cycle. Repeat the cycle for 5 to 10 minutes, once or twice daily.

TYPICAL STARTING DOSE

10 minutes

Description

Alternate nostril breathing is a yoga breathing technique that involves inhaling and exhaling through one nostril at a time while blocking the other. It is believed to promote relaxation, balance energy, and improve focus and mental clarity.

How it helps

In 6 non-placebo-controlled trials of 327 healthy volunteers, practicing alternate nostril breathing (10-15 min) as a single session or daily for 4-8 weeks lowered blood pressure and heart rate while increasing HRV [\[R, R, R, R, R, R\]](#).

Alternate nostril breathing may help by calming your nervous system and reducing stress levels.

17



Choose Healthy Fats

IMPACT2 / 5

EVIDENCE2 / 5

How to implement

Incorporate sources of unsaturated fats such as olive oil, avocados, nuts, seeds, and fatty fish into your daily diet. Aim for at least two servings of fatty fish per week and use olive oil for cooking and salad dressings. Replace saturated fats found in red meat, butter, and processed foods with these healthier options whenever possible.

Description

Choosing healthy fats, such as those found in avocados, nuts, and fatty fish, can support cardiovascular health, reduce inflammation, and promote overall well-being. A diet balanced in healthy fats can help manage cholesterol levels and reduce the risk of heart disease.

Based on their structure, the fats in our diet can be broadly divided into *saturated* and *unsaturated* fat. Trans fat is a type of unsaturated fat [\[R, R, R\]](#).

In large amounts, trans fat and saturated fat may have a negative impact on your heart and reproductive health. Processed foods and animal products like red meat and dairy are rich in these fats [\[R, R, R, R, R\]](#).

Some types of unsaturated fat can protect your heart and support fertility. **Experts say you should add more unsaturated fats to your diet.** Some good sources include [\[R, R, R\]](#):

- Nuts
- Seeds
- Fish

Unsaturated fats include polyunsaturated fats or PUFAs (omega-3 and omega-6) and monounsaturated fats or MUFAs [\[R, R\]](#).

How it helps

Saturated fat intake is associated with lower HRV. In contrast, eating fatty fish (3x/week for at least 3 months) may reduce HRV. Fatty fish is rich in healthy unsaturated fats [\[R, R, R, R, R\]](#).

18



Yoga

IMPACT

2 / 5

EVIDENCE

2 / 5

How to implement

Practice yoga for at least 20 to 30 minutes a day, most days of the week. Choose a style that matches your fitness level and goals, and consider attending a class or using online resources to guide your practice.

TYPICAL STARTING DOSE

30 minutes

Description

Yoga is a mind-body practice that combines physical postures, breathing exercises, and meditation. It enhances flexibility, strength, and mental well-being and is used for stress reduction, relaxation, and overall health improvement.

[Yoga](#) combines breathing, stretching, and relaxation techniques. Practicing yoga may help [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Reduce [stress](#)
- Improve fitness
- Lower blood pressure and heart rate
- Manage pain

How it helps

Yoga has been shown to improve HRV, a marker of autonomic nervous system balance. Studies reveal that yoga enhances parasympathetic activity, thereby increasing HRV. However, the evidence is mixed [\[R\]](#), [\[R\]](#), [\[R\]](#).

19



Mindfulness

IMPACT

2 / 5

EVIDENCE

2 / 5

How to implement

Set aside 5-10 minutes each day to practice mindfulness meditation. Find a quiet place, assume a comfortable seated position, close your eyes, focus on your breathing, and observe your thoughts and sensations without judgment.

TYPICAL STARTING DOSE

30 minutes

Description

Mindfulness involves paying focused and non-judgmental attention to the present moment. It can reduce stress, improve emotional regulation, and enhance overall mental clarity and well-being.

Mindfulness is the practice of being aware of the present moment. When practicing mindfulness, a person acknowledges their thoughts, feelings, and sensations without any judgment [R].

Mindfulness and other types of [meditation](#) may improve [R]:

- Weight and anxiety
- Low mood
- Sleep disturbances
- Pain
- High blood pressure

How it helps

Stress may reduce HRV. Studied stressful situations or events include [R]:

- Public speaking [R, R, R]
- Office work [R]
- Mental stress [R, R]
- Fire simulation [R]
- Social stress [R]
- Surgeries [R]
- Discrimination [R]

In line with these, the following relaxation techniques may increase HRV, including [R, R, R, R, R]:

- Slow breathing [R].
- Mindfulness [R]
- Yoga [R, R, R]

However, not all studies found an effect of mindfulness or yoga on HRV [R, R].

20



Acupuncture

IMPACT

2 / 5

EVIDENCE

2 / 5

How to implement

Visit a licensed acupuncturist for a session, typically lasting between 30 to 60 minutes, once or twice a week. Depending on your specific condition, a course of treatment might range from a few weeks to several months.

TYPICAL STARTING DOSE

1 hour

Description

Acupuncture is a part of traditional Chinese medicine. It involves inserting thin needles at specific points on the body. People use it to relieve pain and allergies, as well as reduce nausea and improve sleep.

[Acupuncture](#) is a part of traditional Chinese medicine. It involves **inserting thin needles at specific points on the body**. People use it to [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Relieve pain
- Improve sleep quality
- Relieve allergies
- Reduce nausea

How it helps

Acupuncture may stimulate the vagus nerve and the parasympathetic nervous system, resulting in improved heart rate variability.

Acupuncture at specific points like Hegu (LI 4) and Neiguan (PC6) may increase both low-frequency (LF) and high-frequency (HF) power in HRV, indicating improved autonomic regulation [\[R\]](#).

Similarly, electrical acupuncture at the BL15 acupoint may increase the normalized high-frequency power component of HRV, suggesting a calming effect on the heart [\[R\]](#).

In patients with stable ischemic heart disease, traditional acupuncture has been associated with higher markers of parasympathetic tone, further supporting its beneficial effects on HRV [\[R\]](#).

Acupuncture at HT7 may increase various components of HRV, likely through parasympathetic activation [\[R\]](#).

However, a systematic review from 2010 emphasized **weak and mixed evidence** for the effects of acupuncture on HRV [\[R\]](#).

21



Binaural Beats

IMPACT

2 / 5

EVIDENCE

2 / 5

How to implement

Listen to binaural beats through headphones for 30 minutes to 2 hours daily. Choose frequencies that match your goal, such as relaxation or focus, and ensure a quiet, comfortable environment for the best experience.

TYPICAL STARTING DOSE

30 minutes

Description

Binaural beats are audio recordings that use specific sound frequencies to create a perception of a beating or pulsing sound in the brain. Some people use binaural beats for relaxation, meditation, and potential cognitive benefits.

Binaural beats are an auditory illusion perceived by the brain when two slightly different frequencies of sound are played into each ear (*bi* – two, *aural*– ear). When wearing earphones that are playing slightly different notes in each ear, our brain perceives the volume to pulse (oscillate) at a fixed rate. This is called a ‘beat.’

People use binaural beats to improve cognition, mood, and anxiety [R, R, R, R, R].

How it helps

Binaural beats in the Alpha or Theta frequencies can aid in relaxation and stress reduction, potentially improving heart rate variability by reducing its stress-induced fluctuations.

Binaural beats embedded in music increased parasympathetic activity during naps compared to silence [R].

Theta-frequency binaural beats embedded in music decreased sympathetic responses and increased parasympathetic responses in military service members with post-deployment stress [R].

Binaural electrostimulation at 25 Hz significantly increased the total power of HRV compared to 1 Hz, suggesting frequency-specific effects on HRV [R].

A study assessed theta binaural beats' (TBB) effect on stress. Results showed that TBB increased parasympathetic activity during stress [R].

Listening to theta-frequency binaural beats post-exercise increased parasympathetic activation and sympathetic withdrawal, although **no significant differences in HRV** were observed by the end of the relaxation period [R].

22



Tryptophan

IMPACT1 / 5

EVIDENCE2 / 5

How to implement

Take 500 mg of tryptophan supplement daily. This dosage can be taken all at once, preferably before bedtime to support sleep, or as directed by a healthcare professional.

TYPICAL STARTING DOSE

500 mg

Description

Tryptophan is an essential amino acid found in various protein-rich foods. It serves as a precursor for serotonin, a neurotransmitter that plays a role in mood regulation. Tryptophan is used in dietary supplements to potentially support mood and sleep disorders, although its effectiveness can vary among individuals.

[Tryptophan](#) is an amino acid. Your body uses it to make proteins and some hormones. **Humans can’t make tryptophan, so we need to get it from protein-rich foods** [\[R, R\]](#).

Your body uses tryptophan to make [serotonin](#) and [melatonin](#). **These brain chemicals are important for mood and sleep** [\[R, R\]](#).

An average adult needs at least **250-425 mg** of tryptophan per day, which is the amount you can get from [\[R\]](#):

- A pound of turkey or chicken
- Two cups of milk
- An ounce of canned tuna
- Two cups of oatmeal

Other foods high in tryptophan include **cheddar cheese, peanuts, pumpkin seeds, and seafood**. Most people get enough tryptophan from their diets, but supplements are also available [\[R, R\]](#).

How it helps

Tryptophan is a precursor to serotonin, a neurotransmitter that helps regulate heart rate by modulating the activity of the body's natural pacemaker, the sinoatrial node. By contributing to serotonin production, tryptophan could potentially support more regular, rhythmic heartbeats, possibly benefiting Heart Rate Variability.

Tryptophan Depletion and HRV:

- High-dose acute tryptophan depletion decreases HRV, particularly in individuals with a history of suicidal ideation or impulsivity [\[R\]](#).
- Tryptophan depletion is associated with changes in HRV, with lower cholesterol levels potentially playing a role in the deactivation of parasympathetic and activation of sympathetic functions [\[R\]](#).

Tryptophan Supplementation and HRV:

- Low doses of tryptophan-rich egg protein hydrolysate (EPH) improve HRV parameters related to parasympathetic activation, suggesting a positive impact on autonomic function [\[R\]](#).

How to implement

Description

- Balance the internal clock
- Maintain a healthy body weight
- Support healthy cholesterol levels
- Prevent migraines

How it helps

In shift workers, the timing of breakfast and the ratio of energy intake at dinner to total energy intake are correlated with the circadian variation in HRV [R].

24



Mediterranean Diet

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Incorporate a variety of primarily plant-based foods, such as fruits, vegetables, whole grains, nuts, and legumes, into every meal. Choose healthy fats, like olive oil, over saturated fats and consume fish and poultry at least twice a week. Limit red meat to a few times a month and include a moderate amount of dairy products. Opt for water and red wine in moderation as your beverages.

Description

The [Mediterranean diet](#) is based on the traditional cuisine from the Mediterranean regions. It moderates the intake of red meat and dairy, while being rich in fruits and vegetables, whole grains, and healthy fats ([olive oil](#)).

The [Mediterranean diet](#) focuses on traditional cuisine from the Mediterranean regions. It’s rich in [\[R\]](#):

- [Olive oil](#)
- Fruits and vegetables
- Whole grains
- Nuts and seeds
- Fish

This type of diet may **reduce inflammation and protect the brain and heart** [\[R, R, R, R\]](#).

Limited intake of animal products, saturated fat, and refined sugar likely contribute to the health benefits of the Mediterranean diet [\[R\]](#).

How it helps

A study of 276 men associated a Mediterranean dietary pattern with an increased HRV [\[R\]](#).

25



L-Citrulline

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take 1.5 to 5 grams of L-citrulline supplements per day, orally, with or without food. This dosage can be taken all at once or divided into two to three smaller doses throughout the day. It's generally recommended to start at the lower end of the dosage range and adjust based on your body's response.

TYPICAL STARTING DOSE

3 g

Description

L-citrulline is an amino acid that may help improve blood flow and reduce muscle soreness, making it a popular supplement for athletes and individuals with certain cardiovascular conditions. Its potential to enhance nitric oxide production supports vascular health and overall circulation.

[Citrulline](#) is an amino acid (protein building block). Citrulline can be found in foods like [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Watermelon
- Pumpkins
- Cucumber
- Bitter melon

The body uses L-citrulline to produce nitric oxide, a compound that helps widen blood vessels. It is important for heart and sexual health [\[R\]](#), [\[R\]](#), [\[R\]](#).

L-citrulline is commonly used as supplement to support [\[R\]](#):

- Blood vessel health
- Muscle health
- Metabolic health
- Sexual health

How it helps

In a placebo-controlled trial of 23 postmenopausal women, supplementation with L-citrulline (6 g/day) for 8 weeks improved HRV by decreasing nLF (sympathetic activity) and LnLF/LnHF (sympathovagal balance) while increasing nHF (vagal tone) [\[R\]](#).

26



Yoga Nidra

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Practice Yoga Nidra for 30-45 minutes per session. Choose a quiet, comfortable place where you won't be disturbed. Aim to do this 3-5 times a week, preferably in the evening before bed to help improve sleep quality and reduce stress.

TYPICAL STARTING DOSE

30 minutes

Description

Yoga nidra is a guided meditation and relaxation practice that originates from yoga traditions. It is used for reducing stress, improving sleep quality, and promoting mental relaxation, often involving deep introspection and heightened awareness.

How it helps

In a non-placebo-controlled trial of 20 volunteers, practicing yoga nidra, both alone and preceded by Hatha yoga, improved HRV [\[R\]](#).

Yoga Nidra may help by inducing deep relaxation, which in turn reduces stress and anxiety levels that can negatively impact heart rhythm.

27



Taurine

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take 1-4 g of taurine supplement daily, divided into two or three doses with meals for optimal absorption. It can be taken continuously, with periodic evaluations of its effects and benefits.

TYPICAL STARTING DOSE

500 mg

Description

Taurine is an amino acid found in various foods and often used in energy drinks and supplements. It plays a role in neurological and cardiovascular health and can help support energy metabolism.

[Taurine](#) is the most abundant free amino acid in humans. It's not essential, which means we can produce it. We can also get it from protein-rich foods, such as [\[R\]](#):

- Seafood
- Meat
- Dairy

Taurine is a popular additive in energy drinks and can also be taken as a supplement [\[R\]](#).

Taurine plays an important role in [\[R\]](#), [\[R\]](#):

- Bile production
- Calcium metabolism

It is also well-known for its antioxidant and anti-inflammatory properties [\[R\]](#).

How it helps

Taurine may aid cardiovascular function and support a healthy heart rate variability by its antioxidant effects and its ability to modulate the sympathetic nervous system.

In one study, taurine and meldonium complex significantly increased heart rate variability parameters in people with diabetes [\[R\]](#).

Lower values of taurine/alanine in patients with postinfarction cardiosclerosis and diabetes may be linked to impaired HRV [\[R\]](#).

28



Watermelon

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Incorporate fresh watermelon into your diet, aiming to consume about 1-2 cups of cubed watermelon daily, either as a snack or part of your meals. It is best consumed fresh to maximize its hydrating effects and nutritional benefits.

Description

Watermelon is a refreshing fruit known for its high water content and being a good source of vitamins A and C. It is used to help stay hydrated and may support skin health due to its antioxidant properties.

How it helps

Watermelon is high in potassium which helps regulate heartbeats, improving heart rate variability. Furthermore, it contains an amino acid called L-citrulline that can help improve blood flow, further supporting heart health.

A study in 18 healthy adults found that daily watermelon juice intake for 2 weeks improved heart rate variability during an oral glucose challenge, maintaining certain heart metrics compared to a placebo, without affecting resting energy expenditure or substrate oxidation [\[R\]](#).

29



Limit Saturated Fat

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Reduce your intake of saturated fats by choosing lean cuts of meat, opting for low-fat or fat-free dairy products, and using cooking oils high in unsaturated fats (like olive or canola oil) instead of butter or lard. Aim to keep saturated fat to less than 10% of your total daily calories. For someone consuming 2000 calories a day, this means 20 grams or less of saturated fat per day.

Description

Limiting saturated fat intake is crucial for managing cholesterol levels and reducing the risk of heart disease. Choosing lean protein sources and incorporating unsaturated fats into the diet supports cardiovascular health and overall well-being.

How it helps

Limiting saturated fat in the diet can reduce cardiovascular risks and helps in maintaining a healthy heart rate variability.

Saturated fat intake may be associated with lower HRV, according to one study [\[R\]](#).

30



Almonds

IMPACT1 / 5

EVIDENCE1 / 5

How to implement

Incorporate a handful of almonds (about 23 kernels) into your daily diet. You can eat them as a snack, add them to your breakfast cereals or yogurt, or include them in salads and other dishes. Do this consistently for ongoing health benefits.

Description

Almonds are a good source of omega-6s, protein and vitamins, making for a great snack food. A 1-ounce serving provides 3700 mg of omega-6.

Almonds are nutritious tree nuts that originate from the *Prunus dulcis* tree. They are packed with essential nutrients, including healthy fats, fiber, vitamin E, and magnesium, which collectively contribute to heart health, support weight management, and may help regulate blood sugar levels.

How it helps

Almonds are a rich source of heart-healthy monounsaturated fats and magnesium, both of which are key nutrients that can help to regulate and improve heart rate variability. Consuming almonds regularly may help to improve heart health by modulating heart rhythm and reducing the risk of heart diseases.

In a 6-week trial, individuals at risk of CVD consumed whole almonds as snacks or isocaloric controls (20% of daily energy). Almond snacking may reduce CVD risk by improving heart rate variability during mental stress [\[R\]](#).

31



Saffron

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take 20 mg of saffron supplement daily. This can be taken at any time of the day, with or without food.

TYPICAL STARTING DOSE

20 mg

Description

Saffron is a spice derived from the stigma of the saffron crocus flower, and is native to the Mediterranean and Asia. Its main compounds include crocin, picrocrocin, and safranal, which may contribute to its antioxidant properties and potential mood-enhancing effects.

[Saffron](#) is a yellow spice praised for its color, taste, and potential health benefits [\[R\]](#).

Saffron is rich in antioxidants such as *crocin*. Researchers are looking into its potential benefits for [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Gut conditions
- Heart health
- Mental health

How it helps

In a placebo-controlled trial of 62 recreationally active adults, supplementation with saffron extract (28 mg/day) for 6 weeks improved HRV and enjoyment associated with exercise [\[R\]](#).

32



Diaphragmatic Breathing

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Practice diaphragmatic breathing for 10-15 minutes per day. Sit or lie down in a comfortable position, place one hand on your chest and the other on your belly. Breathe in slowly through your nose, ensuring your belly moves out more than your chest. Exhale slowly through your mouth or nose, consciously relaxing the belly. Repeat this process, focusing on the movement of your belly rather than your chest.

TYPICAL STARTING DOSE

10 minutes

Description

Diaphragmatic breathing, also known as deep breathing, can help reduce stress and anxiety by activating the body's relaxation response. It promotes better oxygen exchange, reduces muscle tension, and supports overall mental and physical well-being.

How it helps

Diaphragmatic breathing aids in maximizing oxygen intake and reducing stress, which then optimizes heart rate variability. It slows the heartbeat, lowers blood pressure, and promotes better blood flow, improving the overall health of your heart.

In a non-placebo-controlled trial of 30 healthy men, diaphragmatic breathing improved HRV [\[R\]](#).

33



Alpha-GPC Choline

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take 300-600 mg of Alpha-GPC choline supplement daily, preferably in the morning or early afternoon to avoid interference with sleep. It can be taken with or without food. Continue this supplementation for at least 4-6 weeks to assess its effectiveness.

TYPICAL STARTING DOSE

300 mg

Description

Alpha-GPC (L-alpha glycerylphosphorylcholine) is a natural compound that can be found in small amounts in various foods, including soy, and is also produced in the body. It is a choline-containing compound that may support cognitive function and memory.

How it helps

In a study of 12 overweight or obese women, A-GPC (1000 mg) aided in quicker recovery of heart rate variability (HRV) and blood pressure after strenuous exercise, potentially improving cardiac autonomic function. Resting HRV levels (both time and frequency domains) increased, with faster recovery of HRV and blood pressure compared to the placebo session, except for LF/HF ratio [\[R\]](#).

34



Amaranth

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Incorporate amaranth into your diet by adding it to your daily meals. You can use amaranth grains as a substitute for rice in dishes, add them to your morning porridge, or use amaranth flour in your baking recipes. Aim to include amaranth 2-3 times per week to reap its benefits.

Description

Amaranth is a nutritious, gluten-free grain-like seed that has been a staple in the diets of various cultures for centuries. It is rich in protein, fiber, vitamins, and minerals like calcium and iron. Amaranth is used to promote heart health, support digestion, and provide sustained energy.

How it helps

In a non-placebo-controlled trial of 24 athletes and 36 type 2 diabetes patients, supplementation with amaranth oil increased HRV [\[R\]](#).

Amaranth is rich in magnesium and potassium, minerals crucial for maintaining heart rhythm and lowering blood pressure.

35



Lemon Balm

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take a 500 mg lemon balm supplement daily. This dosage can be consumed at once or divided into smaller doses throughout the day, according to personal preference or the guidance of a healthcare provider.

TYPICAL STARTING DOSE

500 mg

Description

Lemon balm is an herb known for its calming and soothing properties. It is often used in herbal teas and aromatherapy to reduce stress and anxiety, promote relaxation, and improve sleep quality.

[Lemon balm](#) (*Melissa officinalis*) is an herb used in gardening and traditional medicine. **It's rich in antioxidants and relaxing components** [\[R\]](#), [\[R\]](#).

People use lemon balm as a tea or supplement to [\[R\]](#), [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Relieve anxiety
- Improve sleep quality
- Reduce stress

How it helps

In a 12-week randomized trial with 60 patients having PVCs, one group drank lemon balm tea twice daily and received lifestyle advice, while the control group only received lifestyle advice. The lemon balm group showed lower triglycerides, total cholesterol, and fasting blood sugar levels, as well as reduced premature ventricular beats and heart rate [\[R\]](#).

36



Magnesium

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Take up to 350 mg of magnesium daily as a supplement, preferably with a meal to enhance absorption.

TYPICAL STARTING DOSE

350 mg

Description

Magnesium is an essential mineral involved in various bodily functions, including muscle contractions, nerve signaling, and bone health. Maintaining adequate magnesium levels through diet or supplements can support overall well-being and reduce the risk of magnesium deficiency-related health issues.

[Magnesium](#) is an essential mineral. Your body needs it for [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Muscle, nerve, and bone function
- Blood sugar and blood pressure control
- DNA and protein production
- Strong immunity

Women need **310-320 mg** of magnesium per day, while men need **400-420 mg** [\[R\]](#).

Foods rich in magnesium include **nuts, seeds, and leafy greens**. Magnesium is also available as a supplement [\[R\]](#).

How it helps

Magnesium plays a critical role in heart muscle function and the electrical activity of the heart, which can affect heart rate variability.

Several studies have shown that magnesium supplementation may increase HRV in healthy people and those with heart failure [\[R\]](#), [\[R\]](#).

However, intravenous magnesium failed to improve HRV in 2 studies including people with heart failure and heart attack [\[R\]](#), [\[R\]](#).

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Pistachios

IMPACT

1 / 5

EVIDENCE

1 / 5

How to implement

Incorporate a handful of pistachios (about 1-2 ounces) into your daily diet. You can add them to your breakfast cereals, salads, or simply snack on them throughout the day. Do this regularly for ongoing heart health benefits and to aid in maintaining a balanced diet.

Description

Pistachios are a type of nut native to Asia but grown extensively in the Mediterranean. They are packed with healthy fats, fiber, protein, and various vitamins and minerals, like vitamins C, B6, and E, as well as potassium, copper, and iron. They are also rich in antioxidant and anti-inflammatory compounds, which can help lower cholesterol levels and support weight management.

The pistachio (*Pistacia vera L*), known as **the “green nut”**, is a nut native to Asia but widely cultivated in the Mediterranean. Pistachios have **low fat content** and high levels of [\[R\]](#), [\[R\]](#), [\[R\]](#):

- Unsaturated fats
- Vitamins (C, B6, E, K, thiamin)
- Minerals (Potassium, copper, iron, and magnesium)

Pistachios also have a high **antioxidant and anti-inflammatory** effect [\[R\]](#).

How it helps

Pistachios are rich in antioxidants, healthy fats, and fiber, which can help regulate your heart rate variability by improving cardiovascular health. Consuming them regularly could lower your risk of heart disease, balance your heart rhythms, and enhance your body's overall ability to respond to stress.

In a non-placebo-controlled trial of 30 adults with type 2 diabetes, eating a moderate-fat diet with pistachios (20% total energy) for 4 weeks improved HRV [\[R\]](#).

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Bhastrika Yoga (Bellows Breathing)

IMPACT

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EVIDENCE

1 / 5

How to implement

Sit in a comfortable position with your back straight. Inhale deeply through your nostrils, filling your lungs with air, then exhale forcefully through the nostrils, emptying the lungs completely. Do this for 2 minutes initially, gradually increasing to 5 or 10 minutes daily, preferably in the morning on an empty stomach.

TYPICAL STARTING DOSE

5 minutes

Description

Bhastrika yoga, also known as "bellows breath," is a pranayama (breathing) technique in yoga. It involves forceful inhalation and exhalation and is believed to increase vitality, clear the mind, and improve respiratory health when practiced mindfully as part of a yoga routine.

How it helps

In a non-placebo-controlled trial of 96 healthy volunteers, practicing bhastrika and anulom vilom pranayam for 6 weeks improved HRV [\[R\]](#).

Bhastrika yoga can stimulate the autonomic nervous system, which controls bodily functions like your heart rate.

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Sheetali Pranayama Breathing

IMPACT

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EVIDENCE

1 / 5

How to implement

Sit in a comfortable seated position every morning in a cool, quiet space. Extend your tongue out and roll the sides upward to form a tube. Inhale deeply through the mouth, filling your lungs with air, then close the mouth and exhale slowly through the nose. Practice this for 5 to 10 minutes daily.

TYPICAL STARTING DOSE

10 minutes

Description

Sheetali pranayama is a yogic breathing exercise that involves inhaling through a rolled tongue or pursed lips to create a cooling effect in the body. It is used in yoga practice to reduce stress, calm the mind, and cool the body's temperature.

How it helps

In a non-placebo-controlled trial of 46 healthy volunteers, practicing Sheetali/Sheetkari pranayama increased HRV at least as effectively as deep breathing. Sheetali pranayama practiced for 3 months significantly improved HRV in a non-placebo-controlled trial of 100 hypertensive patients [\[R\]](#), [\[R\]](#).

Sheetali pranayama breathing may help by stimulating the vagus nerve, which controls heart rate.

Next Steps

Remember, your genes only tell one important part of your health story!

Now that you've seen your DNA-based results for this health topic, let's take a look at other contributing factors.

Your lab results

Your lab results are impacted by the combined effect of your genes, environment and lifestyle.

Lab tests will give you the best picture of your current health status, while your genes provide insight into your health predispositions and which recommendations are best for you.