SAADI AKADEEMIA

Free guide · Stress and the Nervous System

Guide to vagus nerve activation

How to shift the nervous system from threat mode into recovery — breathing, cold, voice and daily habits.

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BEFORE YOU START

How to Use This Guide

This guide explains what the vagus nerve is, why chronic stress keeps the body in “threat mode”, and how to train the nervous system's ability to calm down through simple daily exercises.

Important. This guide is educational material. It does not provide personalised medical advice or replace a medical consultation, diagnosis or treatment. If you have a chronic condition, take medication (especially medication that lowers blood sugar or blood pressure), are pregnant or are breastfeeding, discuss any changes to your diet or fasting with your GP or treating doctor beforehand.

The Academy’s Approach in Brief

Saadi Akadeemia focuses on lifestyle and health optimisation: we look not just at a single test result or symptom, but at how nutrition, blood sugar, sleep, light, stress, physical activity and the nervous system influence one another. Most everyday complaints — fatigue after meals, sugar cravings, poor sleep, abdominal fat, anxiety — are often different manifestations of the same metabolic imbalance.

Pillar	Why It Matters
Nutrition and Blood Sugar	Stable glucose and lower insulin = steadier energy, fewer cravings, healthier body weight.
Sleep and Light	Circadian rhythm regulates hormones, appetite and recovery. Blue light in the evening shifts this rhythm.
Stress and the Nervous System	Chronic stress raises cortisol and blood sugar; the vagus nerve helps the body calm down.
Physical Activity and Muscles	Muscle is the body’s largest “consumer” of glucose — every walk after a meal counts.
Awareness and Measurement	Tests and self-monitoring show whether the changes are really working.

PART 1

The vagus nerve — the body's calming nerve

The vagus nerve (nervus vagus) is the main nerve of the parasympathetic nervous system. It runs from the brainstem to the neck, heart, lungs and digestive organs. If the sympathetic nervous system is the “accelerator” (fight or flight), the vagus nerve is the “brake” — rest, digest, recover.

What the vagus nerve affects	How this manifests
Heart	Slowing of the pulse and heart rate variability (HRV)
Digestion	Secretion of stomach acid and enzymes, intestinal motility
Inflammation	Inhibition of inflammatory signals
Mood	A sense of safety, social connection, calming down
Metabolism	Information exchanged between the brain and gut about eating and satiety

What happens during chronic stress

When the body is constantly in threat mode, cortisol is high, blood sugar is higher, digestion is slower, sleep is lighter and inflammation is greater. You feel tired and anxious at the same time — as though “drained but wired”.

HRV — a mirror of the nervous system

Heart rate variability (HRV) shows how flexibly the heart adjusts the intervals between beats. In general, higher HRV reflects better recovery and stronger parasympathetic tone. Many smartwatches measure HRV — what matters is not a single number, but your own trend over time.

PART 2

Six ways to activate the vagus nerve

1 · Slow breathing with a prolonged exhalation

Breathe in through your nose for 4 s, then out for 6–8 s. A prolonged exhalation is one of the most direct signals to the vagus nerve. 5–10 minutes.

2 · Cold stimulus

Apply cold water to your face for 15–30 s, or finish your shower with 30–60 s of cool water. Start gently. If you have heart disease, discuss this with your doctor first.

3 · Voice: humming, singing, gargling

The vagus nerve innervates the muscles of the larynx and pharynx — humming or gargling for 1–2 min activates these areas.

4 · Movement and nature

A leisurely walk in nature, without your phone, reduces stress and also supports blood sugar balance.

5 · Gut and food

Fibre-rich vegetables, fermented foods and eating calmly (without a screen) support communication between the gut and brain. Overeating and eating quickly have the opposite effect.

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6 · Social contact and laughter

Safe social interaction, a hug, laughter — the human nervous system calms down in the company of others.

The link with metabolism: stress raises blood sugar even without food. That is why we address the nervous system and metabolism together at the Academy — if the nervous system does not calm down, even the best nutrition plan cannot work to its full potential.

Self-test: is your nervous system in threat mode?

Tick each statement that has generally applied to you over the past month.

- ☐ I feel tired and anxious at the same time
- ☐ I find it hard to “switch off” in the evening
- ☐ My digestion is slow, and bloating or constipation is frequent
- ☐ I often breathe shallowly or hold my breath
- ☐ My resting pulse has increased compared with before
- ☐ I get irritated easily by little things
- ☐ I have little time to spend in nature or with friends
- ☐ When on holiday, I feel better after just a couple of days

0–2: your nervous system recovers well. 3–5: add one exercise each day. 6+: stress is likely affecting your sleep, digestion and blood sugar — start with breathing exercises and explore the Academy's materials. If anxiety or low mood persists, be sure to seek help from a specialist.

14-day vagus nerve training plan

Days	Focus	What to do
1–3	Breathing	Practise breathing for 5 min in the morning and evening (4 s in, 6–8 s out).
4–6	Cold	Add cold water to your face or finish your shower with 30 s of cool water.
7–9	Voice	Hum or sing for 1–2 min a day, for example in the car.
10–12	Eating	Eat at least one meal a day calmly, without a screen.
13–14	Nature	Take a 20–30 min walk in nature; compare how you feel with the first day.

PRACTICAL WORKSHEET

Your 5-minute daily routine

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When	Exercise	Duration
In the morning	Cold water on your face and 1 min of slow breathing by a window	2 min
Before a meal	3 deep breaths with a long exhalation — helping digestion get ready	30 s
After lunch	A leisurely walk without your phone	10 min
During moments of stress	Physiological sigh: two short inhalations through the nose, one long exhalation through the mouth; repeat 3 times	1 min
In the evening	Humming or quiet singing, followed by 4–6 breathing	3 min

Track for a week

Daytime	Exercises completed	Stress 1–5	Sleep 1–5	Digestion 1–5
Mon				
Tue				
Wed				
Thu				
Fri				
Sat				
Sun				

Tip: link an exercise to an existing habit — breathing after brushing your teeth, humming in the car. That way, you do not have to remember it separately.

PART 4

A closer look at the nervous system

The autonomic nervous system works independently of our conscious awareness. The sympathetic branch prepares the body for action (heart rate and blood pressure rise, digestion slows), while the parasympathetic branch—whose main nerve is the vagus nerve—helps us calm down, digest and recover. A healthy nervous system is not always calm; rather, it can switch quickly between states.

Organ	What the vagus nerve does
Heart	Slows heart rate and increases heart rate variability (HRV).
Lungs	Helps regulate breathing; slow exhalation activates the vagus nerve.
Digestive tract	Promotes the secretion of digestive juices and intestinal movement.
Immune system	The cholinergic anti-inflammatory pathway limits excessive inflammation.
Brain	Carries signals from the body to the brain—most vagus nerve fibres carry information from the body to the brain.

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HRV—what it shows and how to measure it

HRV, or heart rate variability, indicates how flexibly the heart adjusts the time between beats. In studies, higher HRV is associated with better recovery and stress resilience. HRV is influenced by sleep, alcohol, illness, exercise and age. Measure it on waking in the morning, in the same position, and track the trend over weeks rather than focusing on a single day.

HRV is individual—compare yourself with yourself. There is no scientific consensus on optimal values—these are based on individual studies. Laboratory reference values apply, and a doctor interprets the result.

The gut–brain axis

The gut and brain communicate through nerves, hormones and the immune system. In animal studies, the vagus nerve is part of the mechanism through which gut bacteria may influence behaviour. Evidence in humans is still emerging, but a varied, fibre-rich diet is beneficial for the gut regardless.

PART 5

A collection of exercises

Exercise	How to do it	When
Resonance breathing	About 6 breaths per minute: inhale for 4–5 s, exhale for 5–6 s. In studies, this increases HRV.	In the morning, before sleep
Physiological sigh	Take two consecutive breaths in through the nose, then exhale slowly through the mouth. 2–3 times.	During acute stress
Box breathing	Inhale for 4 s, hold for 4 s, exhale for 4 s, hold for 4 s.	Before a performance or presentation
Humming, singing	Make a long “mmm” sound as you exhale; sing in a choir or in the car.	At any time
Gargling	Gargle with water for 30–60 s.	When brushing your teeth
Cold water on the face	Cool water or a cold compress on the forehead and around the eyes for 15–30 s.	During anxiety
Progressive relaxation	Tense a muscle group for 5 s, then relax for 10 s – working from your feet to your head.	In bed in the evening
Gentle walking	Rhythmic walking in nature, breathing through your nose.	In the middle of the day

If you have heart disease, an arrhythmia, high blood pressure or a tendency to faint, discuss cold-exposure and breath-holding exercises with your doctor before trying them.

Electrical vagus nerve stimulation

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In medicine, a vagus nerve stimulator is used, for example, for severe epilepsy and depression when prescribed by a doctor. Evidence for home devices that stimulate through the ear is still limited. Breathing, physical activity and sleep are free and supported by a broad evidence base.

We discuss stress and recovery in the Academy webinars: saadiacademy.ee/veebinarid

PART 6

Everyday environment

Area	What adds strain	What helps
Sleep	Irregular routines, screens in bed	Consistent wake-up time, a dark room
Food	Eating in a hurry, ultra-processed food	Eating slowly, fibre, fermented foods
Physical activity	Prolonged sitting, doing only very intense exercise	Daily walking, moderate exercise, rest days
Information environment	Constant notifications, news feeds at night	Set times for checking your phone
Relationships	Loneliness, ongoing conflicts	Loved ones, shared activities, a hug
Alcohol	Evening alcohol consumption lowers nighttime HRV	Alcohol-free evenings

Three levels of stress

- Acute stress (minutes): physiological sigh, cold water, walking.
- Daily strain (hours): breaks every 60–90 minutes, lunch outdoors, breathing exercises before a meeting.
- Long-term stress (weeks): sleep, physical activity, relationships, adjusting your workload; a psychologist or doctor if needed.

The Dr Saadi Club covers one topic each month, with a protocol and a live broadcast: saadiacademy.ee/klubi

WORKSHEET

21-day exercise calendar

Week	Mon	Tue	Wed	Thu	Fri	Sat	Sun
1	☐	☐	☐	☐	☐	☐	☐
2	☐	☐	☐	☐	☐	☐	☐
3	☐	☐	☐	☐	☐	☐	☐

Mark each day when you complete at least 5 minutes of exercises. Three weeks is enough for a habit to begin forming.

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Dayti me	Morning pulse	HRV (if you measure it)	Tension (0–3)	Sleep (0–3)
1.				
2.				
3.				
4.				
5.				
6.				
7.				

QUESTIONS

Frequently asked questions

Question	Answer
How quickly do the exercises work?	Slow breathing may have a calming effect within a few minutes. More lasting improvements in recovery develop over weeks of consistent practice.
Do I have to measure HRV?	No. How you feel, your sleep and your morning pulse are also useful indicators. HRV is an additional tool for those who enjoy tracking measurements.
Is cold water suitable for everyone?	No. If you have cardiovascular disease, discuss cold exposure exercises with your doctor first, and always start gently.
Are exercises enough for anxiety?	Exercises can help, but if you have persistent anxiety, panic attacks or low mood, consult a doctor or psychologist.
What should I do if I forget the exercises?	Link an exercise to an existing habit: brushing your teeth, making coffee or getting into the car. A short daily practice is better than a long session every now and then.
Can children do the exercises?	Yes, especially breathing and humming in a playful way. Consult a paediatrician about children's health concerns.

WHAT NEXT

Your next step in the Academy

This guide gave you an initial overview. The vagus nerve connects stress, sleep, digestion and blood sugar. The biggest change comes when you understand the whole picture and can ask for explanations. The Academy offers several levels for this — choose the one that suits you right now.

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Step	What it is	Where to find it
1. Free materials	Other guides in the same series: blood sugar, sleep, the vagus nerve, inflammation, laboratory tests, insulin resistance.	/tasuta-materjalid
2. Free videos	Brief explanations of the most important topics — a good place to start.	/tasuta-videod
3. Webinars	Live sessions and recordings on a single topic, with questions and answers.	/veebinarid
4. Courses	A structured, multi-week learning programme, including the core course “Ainevahetuse Kood”.	/kursused
5. Dr Saadi Club	Monthly materials, live sessions, an archive and a community. Members receive discounts on webinars and courses.	/klubi
6. Book	“Veresuhkru ohtlikud saladused” (published by Varrak) — the whole subject in one book.	varrak.ee

All addresses begin with: saadiacademy.ee — for example, saadiacademy.ee/klubi.

Which option is right for you? If you simply want to get started — free videos. If you have one specific question — a webinar. If you want to improve your metabolic health step by step — a course. If you want ongoing support and new materials every month — the club.

What the Academy does not do

The Academy is an educational platform. We do not diagnose conditions, prescribe treatment or provide personalised medical advice online. We do, however, help you understand your body, test results and options, so you can have more meaningful discussions with your doctor and make informed everyday decisions.

ABOUT THE AUTHOR

Dr Sergey Saadi and Saadi Akadeemia

Dr Sergey Saadi is a doctor who has been practising since 2010 and focuses on metabolism, blood sugar, insulin resistance and the effects of lifestyle on health. He is the author of “Veresuhkru ohtlikud saladused” (published by Varrak) and the founder of Saadi Akadeemia. The Academy aims to make evidence-based knowledge understandable and usable in everyday life.

Topics we cover at the Academy

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Topic	What you will learn
Blood sugar and insulin	How metabolism really works and how to interpret it through test results
Low-carbohydrate nutrition and keto	How to find the right level for you and make the transition safely
Fasting and time-restricted eating	For whom, how and when these approaches are suitable — and when they are not
Sleep, light and circadian rhythm	Blue light, morning light, evening routines
Stress and the vagus nerve	Training the nervous system’s ability to calm down
Inflammation and testing	What to measure, how to understand the results and discuss them with your doctor

Questions and contact

Write to us: kursused@synage.ee. We will reply as soon as possible and in the language of your message (Estonian, Russian or English). All materials and news: saadiacademy.ee.

All purchases come with a 14-day right of withdrawal, and purchased recordings remain accessible for at least one year.

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