

CLAIRE HALDEN

BIOHACKING, HONESTLY

WHAT WE TESTED AT HOME
FOR ENERGY, RECOVERY
AND FOCUS
(AND WHAT WE DROPPED)



THE KNOWLEDGE, SIMPLY COLLECTION

BIOHACKING, HONESTLY

*What We Tested at Home for Energy,
Recovery and Focus
(and What We Dropped)*

CLAIRE HALDEN

KNOWLEDGE, SIMPLY

Biohacking, Honestly

What We Tested at Home for Energy, Recovery and Focus (and What We Dropped)

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Knowledge, Simply collection

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PLEASE READ

BEFORE YOU START

ATTENTION: THIS BOOK IS NOT MEDICAL ADVICE

Nothing in this book is a recommendation. We describe what we did, with our doctors, in our circumstances. We do not suggest that you do the same.

Everything you decide to do is your choice and your responsibility. The author and the publisher accept no liability for any consequence, direct or indirect, of using the information in this book.

Never start, change or stop anything (a device, a supplement, a diet, a medication) without speaking to a qualified doctor who knows your health.

Several tools described here (cold water, heat, pressurised oxygen, brain stimulation, microneedling, supplements, fasting) can be dangerous for people with heart conditions, high or low blood pressure, epilepsy, diabetes, skin disorders, pregnancy or other medical conditions. Read every product manual and never use a device outside the manufacturer's instructions.

Every substance we used that requires a prescription was prescribed and supervised by our doctor, where the law allowed it at that time. The chapter on peptides is a history and a status report, not a guide: **we strongly advise against using those substances.**

We name the devices and products we use because readers ask. We have no affiliation with any brand and nobody paid us. Models, prices and rules change: check before you buy.

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WHY BIOHACKING AT HOME

Clarity, simplicity and real information.

There is a growing wave of interest in optimizing health, energy, focus and longevity: not through extreme interventions or medical tourism, but through smart, intentional actions you can take at home. Biohacking used to be the domain of scientists, elite athletes or Silicon Valley obsessives.

Today it is becoming something much more useful: a way for real people to take control of their biology without leaving their house.

Modern technology and knowledge have made it possible to access the benefits of cold therapy, red light, brainwave training, microneedling, supplements, meditation and more, without a team of doctors or a six-figure income.

You just need clarity, simplicity and real information.

WHAT THIS BOOK IS (AND ISN'T)

This book is not a medical guide. It is a personal journey through tools, technologies and strategies we have explored, tested and sometimes loved.

We are not doctors. We are passionate biohackers who have worked alongside medical professionals, tested dozens of devices, followed protocols, made mistakes and learned what works best at home, without a clinic or a white coat.

OUR APPROACH: PRACTICAL, TESTED, NON-MEDICAL

There are no long theories here. Like every title in the *Knowledge, Simply* collection, this book aims to be clear, direct and actionable. Each chapter follows the same path, so you always know where to look.

- 1 **Essence**
What it is, what it does and why it might be worth considering.
- 2 **What We Discovered**
Our real experience using it, often with help from trusted experts.
- 3 **What to Know First**
Warnings, possible side effects and who should avoid it, based on our experience and never a substitute for medical advice.
- 4 **What Actually Helped**
How we realistically use it at home and what made the difference.
- 5 **What Didn't Work**
Mistakes, disappointments and habits we stopped.
- 6 **What We Measured**
What we tracked with data and where we only have impressions.
- 7 **Is It Worth It?**
Our verdict for our situation, not a recommendation for yours.

When technical details change the result (a temperature, a wavelength, a pressure, a needle depth) the chapter adds sections on equipment, routines and research.

A WORD ON HONESTY

Many of our results are felt, not measured. We always tell you which is which. When research points in a different direction from our impression, we tell you that as well.

UNDERSTANDING ATP: THE BODY'S ENERGY CURRENCY



Throughout this book you will often see the acronym ATP. It stands for adenosine triphosphate: the molecule that powers nearly every process in the human body.

Think of ATP as the body's currency of energy. Just as money allows an economy to function, ATP allows your cells to perform work.

1 Movement

Every muscle contraction, from lifting weights to blinking your eyes, is fuelled by ATP.

2 Nerve signals

Your brain and nervous system use ATP to reset and power every impulse.

3 Repair and recovery

Building proteins, healing tissues and regenerating cells all require ATP.

4 Metabolism

ATP is the end product of the way your body turns food and oxygen into usable energy.

How it works

ATP is made of adenosine attached to three phosphate groups. The bonds between those phosphates store energy. When one bond is broken, ATP releases energy and becomes ADP (adenosine diphosphate). The cell then recharges ADP back into ATP inside the mitochondria, using nutrients (glucose, fatty acids, amino acids) and oxygen.

This cycle never stops. Your body turns over roughly its own weight in ATP every day just to keep you alive and functional.

In simple terms, ATP is the rechargeable battery of life. Almost every tool in this book affects, directly or indirectly, how efficiently your body produces, uses or recycles it:

- red light is absorbed by an enzyme inside the mitochondria;
- cold exposure pushes the body to build and activate heat-producing tissue;

- pressurised oxygen increases the oxygen available to the cells;
- NAD⁺ is a helper molecule in the chemistry of energy production;
- creatine helps the body regenerate ATP quickly during short efforts.

When ATP flows smoothly, the body performs at its best. When its production falters, fatigue, poor recovery and illness follow quickly.

HOW TO READ THIS BOOK

The book is organised in five parts.

1 **Technology**

Cold plunge, infrared sauna, red light, hyperbaric oxygen, brain devices, skin and scalp devices plus the wearables that measure it all.

2 **Nutrition**

Functional eating, supplements, hydration, peptides and cyclical protocols.

3 **Mind**

Intention, mantras, meditation, cognitive rewiring and self-regulation.

4 **Environment & Lifestyle**

Sleep, light, movement and the spaces you live in.

5 **Integration**

How to combine everything into a system that fits your life.

You can read in order or jump to the tool that interests you. If you want to spend nothing at first, start from Part IV: light, sleep and movement cost little and support everything else. If you want to invest, read the verdicts first and decide where your money works hardest.

This is biohacking without hype: practical insights from real people who have done the work, so you can decide what is worth your time, money and energy.

PART I

TECHNOLOGY

Tools that work from the outside in



Technology is the most visible side of biohacking. It is also the part that feels most futuristic: devices and machines designed to push your biology into states that would normally take years of training or very specific environments.

Here we talk about methods that act on the body from the outside in: cold, heat, light, oxygen, electrical and magnetic stimulation, radiofrequency and microneedling. There is nothing magical about them: they work through physics and physiology.

Some accelerate recovery. Some boost energy or focus. Others reduce inflammation, improve the skin or help you reach mental states that normally require deep practice. What they have in common is an external trigger (temperature, light, oxygen, waves, tiny needles) that sparks an internal change.

In this part you will find:

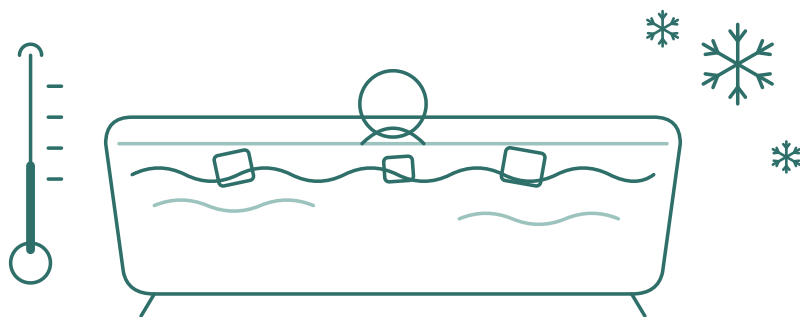
- cold exposure, from cold showers to dedicated plunge tubs;
- heat, with the infrared sauna;
- light, with red light panels and LED masks;
- oxygen and pressure, with home hyperbaric chambers;
- brain devices, from neurofeedback headbands to electrical and magnetic stimulation;
- skin and scalp devices: radiofrequency, microcurrent and microneedling;
- wearables and tests that tell you whether any of this is working.

Most of these tools can be used at home when used responsibly and, where needed, with medical advice. They are powerful but not risk-free, which is why every chapter covers not only what worked for us but also what to know first, what did not work and whether the investment is worth it.

Think of this part as your guide to the hardware of biohacking.

COLD PLUNGE

Cold exposure for energy, mood, recovery and resilience.



ESSENCE

Cold plunging means immersing the body up to the neck in cold water, typically between 5 and 12°C (41 to 54°F), for a short time. It is one of the simplest and most powerful biohacks: low-tech in appearance, high impact on body and mind.

The sudden drop in temperature activates the nervous system, changes circulation, reduces soreness and sharpens focus. It is at once a stressor and a reset that trains the body in resilience.

The reaction starts within seconds. Blood vessels in the skin tighten while breathing and heart rate jump (the cold shock response). Noradrenaline and dopamine rise sharply and stay elevated for some time after you get out: this is the clear, alert, good-mood feeling almost everyone describes. With repetition the body meets the shock with less alarm and learns to switch on brown fat, a tissue that burns energy to produce heat.

WHAT WE DISCOVERED

When we started, the first and most striking result was the immediate energy boost: a sharp clarity and alertness that lasted for hours. With time we noticed other changes.

1 **Recovery after workouts**

Cold narrows blood vessels and calms the inflammatory response in tired muscles. When you warm up again, blood flow returns stronger and brings oxygen and nutrients back to the tissues. For us this meant less soreness and, above all, energy back after a training session: you walk in tired and walk out ready for the rest of the day.

2 **Mood and stress tolerance**

The cold triggers a release of noradrenaline, dopamine and endorphins that lifts the mood. Over time we became less reactive to daily stress, as if the nervous system had been trained to stay calm under pressure.

3 **Mental resilience**

Each plunge forces you to face discomfort and stay composed. This carried over into real life: meetings, conflicts and unexpected problems felt more manageable because the mind was already used to controlled stress.

4 **The sauna-to-plunge moment**

Our favourite sequence is sauna first, then the plunge. The heat relaxes every muscle; the cold switches everything back on at once. The best word we have found for what follows is rebirth.

Consistency was the real game-changer.

A dedicated plunge at home, instead of a bathtub full of ice or a trip to a lake, is what turned the practice into part of daily life.

WHAT TO KNOW FIRST

Cold plunges are powerful but not risk-free.

1 Cardiovascular stress

Cold shock makes heart rate and blood pressure spike. This can be dangerous for people with heart or blood pressure conditions: medical clearance is essential.

2 Cold shock response

The first instinct is to gasp and hyperventilate. Without breathing control, panic may set in. Learning to slow your breathing is crucial.

3 Hypothermia

Staying in too long, or plunging at extreme temperatures, quickly becomes unsafe. For most people two to three minutes is plenty.

4 Alcohol

Alcohol blunts both the body's reaction to cold and your judgement of it. Never plunge after drinking.

5 Breath-holding methods

Breathing techniques that involve hyperventilation or long breath holds can cause fainting. Never practise them in or near water.

! ATTENTION

Never plunge alone. Consult a doctor before starting cold exposure, especially with heart, blood pressure or circulation problems. Get out at once if you feel numbness, confusion or shivering you cannot control.

WHAT ACTUALLY HELPED

The biggest difference came from keeping sessions short and consistent rather than chasing extremes.

1 Duration: two to three minutes

Most of the physiological response (vasoconstriction, hormone release, nervous system activation) happens in the first minutes.

Staying longer does not necessarily add benefits and raises the risk of hypothermia. Some people stay in for five to ten minutes or more; for us short, repeatable sessions gave better results and kept the practice sustainable.

2 Temperature: 10 to 12°C

Cold enough to trigger alertness, lower soreness and a better mood without becoming unsafe. Many people push towards 0 to 5°C to prove their toughness, but for us the extra benefit was small compared with the extra discomfort and risk.

3 Breathing: slow, long exhalations

Deliberately slowing the breath moves the nervous system from panic to control. This is what makes the plunge a mental training tool and not just a physical shock. We never followed a structured method such as Wim Hof: slow exhalations were enough for us.

4 Contrast: hot, then cold

Alternating sauna and plunge amplified recovery and mental clarity. Heat dilates the vessels and relaxes the muscles; cold constricts them. The switch creates a strong circulatory pump and a mental reset that we find deeper than either method alone. Many people use only the cold; for us the combination is the most complete protocol.

BUILDING A ROUTINE

Going straight into icy water for long sessions can backfire, physically and mentally. A gradual approach lets circulation, nervous system and mindset adapt step by step. This is the progression we followed, based on advice from the experts we consulted.

WEEKS	WHAT WE DID	WHY
1-2	Cold shower, 30 to 60 seconds at the end of a normal shower	Less intimidating than immersion. It trains the gasp reflex and introduces breath control.

3-4	Plunge at 15 to 18°C for one to two minutes	Full immersion without overwhelming stress. Enough to trigger circulation changes and the mood lift.
5-6	Lower to 12 to 14°C, extend to two to three minutes	The nervous system is used to the cold. Slightly colder and slightly longer builds tolerance.
7+	10 to 12°C, two to three minutes, three or four times a week	The best balance between safety and effect. From here, consistency matters more than going colder.

Following this structure, the shock turns into resilience instead of trauma. The practice evolves from a test of willpower into a sustainable daily tool.

BEFORE, DURING AND AFTER

What you do around the plunge makes it far more effective. This is our routine; others may prefer different habits.

Before

- **No heavy meal.** Digestion diverts blood to the stomach and makes the plunge feel heavier. We tried plunging fully fasted and after a light breakfast and noticed no real difference: what matters is avoiding a full stomach.
- **Hydrate, but not too much.** Good hydration prevents headaches and dizziness; a lot of water just before entering was uncomfortable for us.
- **A few calm breaths.** They reduce the initial shock and set the tone.

During

- **Slow breathing with long exhalations** keeps panic away.
- **Calm entry instead of jumping in.** Gradual immersion kept us more relaxed than a sudden plunge.

After

- **Natural rewarming.** Movement, light exercise or the sauna instead of a very hot shower, so the body learns to regulate itself.
- **A warm drink.** Tea or an herbal infusion restores comfort without loading digestion.
- **Wait before eating.** We wait at least 30 minutes to let circulation and core temperature settle.

TIMING

1 Morning

The biggest clarity and energy boost. The cold adds to the natural morning rise in cortisol, clears the mental fog and sets the tone for the day.

2 After training

The plunge gives the energy back and shortens the heavy feeling after a session. See the research note below if building muscle is your main goal.

3 Evening

Harder. The body resists cold more later in the day and a plunge close to bedtime sometimes made sleep more difficult because of the nervous system activation. In the evening we prefer the sauna.

Our sweet spot: mornings, early afternoons for a reset before the second half of the day, or right after training. Others find that evening plunges help them sleep: experiment and listen to your body.

WHAT DIDN'T WORK

- **Cold showers as a substitute.** They are a good starting point and we still use them when the plunge is not available, but they do not give the same result. Water in a tub surrounds the whole body evenly; under a shower you instinctively move out of the stream.
- **Going colder to feel tougher.** Near-freezing water added discomfort and risk with little extra benefit.

- **Fighting the cold with tension.** Jumping in and clenching every muscle made the experience harder and the calm afterwards shorter.
- **Evening plunges before bed.** Too stimulating for us.
- **Worrying about the perfect meal timing.** Fasted or after a light breakfast made no difference, so we stopped thinking about it.

WHAT WE MEASURED

Less than we should have. Our unit displays the water temperature, so we know we stay around 10 to 12°C. We aim for two to three minutes but never timed ourselves precisely. What we have are consistent impressions: energy after training, a clear head in the morning and the unmistakable reset after sauna and plunge.

IF YOU WANT DATA, LOG FOUR THINGS

Water temperature, minutes in the water, how you feel one hour later and, if you wear a tracker, your recovery score the next morning.

TYPES OF EQUIPMENT

TYPE	STRENGTHS	LIMITS	INDICATIVE COST
Bathtub with ice	Almost no upfront cost	Messy, inconsistent temperature, recurring cost of ice	Ice only
Inflatable tub	Portable, insulated, easy to set up	Water warms quickly, no filtration	\$100–500
Rigid tub without cooling	Holds the cold longer, sturdier	Still needs ice or cold water	\$500–1,500
Dedicated unit with chiller	Stable temperature, circulation, sanitation	Higher cost, permanent space	\$3,000–8,000

Price ranges are indicative and change quickly. We do not recommend home-made chest freezer conversions: they combine water and electricity in ways that can be unsafe.

What we looked at when choosing

- **Cooling:** active chiller or ice only.
- **Filtration and sanitation:** ozone or UV to keep the water clean.
- **Insulation:** better insulation means a more stable temperature.
- **Size and depth:** enough to submerge at least to the neck.
- **Materials:** inflatable (portable), composite or plastic (durable but basic), acrylic (premium).
- **Portability or permanence:** inflatables are temporary; dedicated units are fixed.

Special features: ionised or treated water

Some advanced systems add ionisation or oxygenation to keep the water fresher, reduce bacterial growth and improve the feel on the skin. In our experience the water felt cleaner and smoother, but temperature stability and filtration remain the priorities. Extras are nice to have, not essential.

Our device

We chose a dedicated tub with active cooling and filtration: the Plunge All-In. What mattered to us:

- cooling down to 1.7°C (35°F);
- ozone and UV sanitation;
- dual function: cold plunge and hot tub;
- durable acrylic build for indoor or outdoor use.

We are not affiliated with Plunge or any other brand. Stable temperature and clean water are what turned an occasional practice into a daily habit.

WHAT RESEARCH SAYS

- **Alertness and mood** are the best-documented effects: the rise in noradrenaline and dopamine after immersion is large and lasts beyond the session.
- **How much is enough.** A 2021 Danish study of winter swimmers is often quoted for its simple numbers: the winter swimmers it followed averaged about 11 minutes of cold and 57 minutes of sauna per week, spread over two or three days. It describes what they did, not a proven minimum.
- **Cold after weights.** Several studies suggest that regular cold immersion right after strength training can reduce muscle and strength gains over the following months. If building muscle is your priority, leave a few hours between the weights and the cold.
- **Immunity, metabolism and longevity:** the evidence is promising but still mixed. What is well established today is the effect on energy and mood.

IS IT WORTH IT?

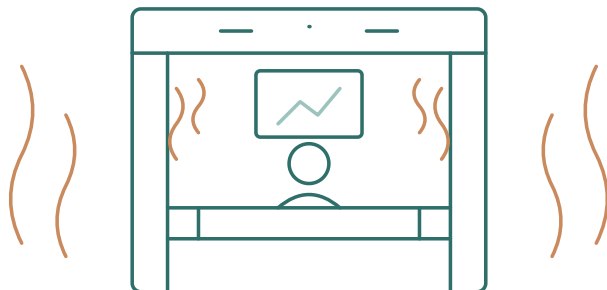
Yes, if you want a biohack that delivers strong physical and mental benefits with a simple practice. For beginners, cold showers and inflatable tubs are a good way to test the waters. For long-term use, a dedicated unit with cooling and filtration makes the habit realistic and enjoyable.

Cold plunging is uncomfortable at first and transformative with practice. For us, sauna followed by the plunge is one of the best moments of the day.

NEXT · Chapter 2: from cold to heat. The infrared sauna, the evening habit that improves our sleep.

INFRARED SAUNA

Heat therapy for recovery, relaxation, sleep and skin.



ESSENCE

Heat has been used for centuries to cleanse, relax and rejuvenate the body. Traditional saunas rely on very high air temperatures. Infrared saunas work differently: they use specific wavelengths (near, mid and far infrared) to warm the body directly, not just the air around you.

The result is a deep, penetrating warmth that stimulates circulation, supports muscle recovery and helps with relaxation and sleep. Because the air stays at a moderate temperature while the body heats up, infrared cabins are often more comfortable for longer sessions than a conventional sauna.

WHAT WE DISCOVERED

Our first experiments with heat were in traditional saunas: effective, but not practical for daily use at home. When we moved to infrared, the experience changed completely.

1 **Better recovery after training**

Infrared heat reaches deeper into muscle tissue than hot air. Circulation improved, soreness after workouts was lower and flexibility came back faster when stretching.

2 **Relaxation and mental clarity**

Evening sessions slowed the heart rate, released tension and quieted mental chatter. Unlike a traditional sauna, where the air can feel oppressive, infrared heat made it easy to relax.

3 **Sleep**

This is the benefit we value most. On days with an evening session, sleep came faster and felt deeper. The gentle rise and fall of body temperature seems to tell the body that it is time to rest, much like the natural rhythm after sunset.

4 **Skin**

Regular use improved skin tone and texture. Sweating opened the pores without the harsh dryness of very high heat and left the skin smoother.

5 **Comfort you can actually use**

Our cabin has a screen and music; we can also bring a phone. It sounds like a detail, but it is the reason we use it so often: twenty or thirty minutes pass easily.

Usability made the biggest difference.

At 45 to 60°C instead of 80 to 100°C it is easier to stay in, breathe comfortably and use the sauna regularly. That consistency is what changed the results.

INFRARED OR FINNISH?

We use both and they are genuinely different experiences. The traditional Finnish sauna feels more natural, probably because it is what most of us grew up with: hot air, wood, the ritual of water on the

stones. The infrared cabin is better for us in many ways: lower air temperature, easier breathing, longer sessions and the comfort of screen, music and phone. For daily use at home, infrared wins.

One detail matters when you read the research. The strongest long-term data on heat and health come from large Finnish studies on traditional saunas, where frequent use was associated with better cardiovascular outcomes. Studies on infrared cabins are smaller and shorter, but they point in the same direction for relaxation, recovery and comfort.

WHAT TO KNOW FIRST

Infrared saunas are generally considered safe, but they are not for everyone.

1 **Dehydration**

Infrared heat makes you sweat more than you might expect, even at lower temperatures. Without enough water before and after, headaches, dizziness or fatigue follow. We always keep a bottle of water inside the cabin.

2 **Overheating**

Comfort can be misleading. Staying too long, especially beyond 40 minutes, can push the body into exhaustion instead of recovery. For us, 20 to 30 minutes is the right length.

3 **Circulatory stress**

Heat raises the heart rate and dilates blood vessels. This is fine for healthy people, but anyone with heart conditions, blood pressure problems or who is pregnant should speak to a doctor first.

4 **Alcohol**

Never combine sauna and alcohol.

UNDERSTANDING INFRARED SPECTRUMS

Not all infrared saunas are the same. The key difference is the spectrum they emit.

SPECTRUM	WHERE IT ACTS	MAIN USE
Near infrared (NIR)	Skin surface	Skin rejuvenation, collagen, small wounds
Mid infrared (MIR)	Soft tissue	Circulation, muscle and joint comfort
Far infrared (FIR)	Deepest heating effect	Raising core temperature, sweating, relaxation

Many saunas use only far infrared, which is excellent for heat therapy but limited if you also want effects on skin and circulation. That is why we chose a full-spectrum sauna that delivers NIR, MIR and FIR together: the experience feels more complete.

A note on detox. Sweating feels cleansing and is often sold as a way to eliminate toxins. Research shows that the amount of toxins leaving the body through sweat is small; liver and kidneys do most of that work. We enjoy the sweat for how it makes us feel, not as a detox treatment.

LOW EMF EMISSIONS

A detail often overlooked is the level of electromagnetic fields (EMF) produced by the heaters and wiring. Every electrical device emits some EMF, but not all saunas are built to the same standard. Well-designed cabins use shielding and careful wiring to keep emissions near background levels; some cheaper models heat well but expose you to high fields exactly where you sit.

Our suggestion: check the EMF rating before buying and look for "low" or "ultra-low" EMF models, ideally under 3 mG at the seating position. The Sunlighten mPulse we use is built with ultra-low EMF and ELF emissions, which gives us peace of mind during long sessions. We think this feature is worth paying for: the point of biohacking is to reduce stress on the body, not to add hidden new ones.

COST AND EQUIPMENT

TYPE	PROS	CONS
Infrared blankets	Affordable, easy to store	Uneven heat, lying down, no sauna atmosphere
Entry-level far-infrared cabins	Real sitting space, even sweating, cleaner air	Far infrared only
Full-spectrum cabins	NIR, MIR and FIR together, smart controls, low EMF	Higher cost, dedicated space

After testing smaller and simpler solutions, we chose a Sunlighten mPulse full-spectrum cabin. The experience is more balanced and, above all, easier to keep up over time.

OUR ROUTINE AND PRACTICAL TIPS

- 1 Duration**
Twenty to thirty minutes. Under fifteen minutes did not trigger deep sweating; beyond 35 to 40 minutes we sometimes came out drained instead of recharged. The goal is stimulation, not exhaustion.
- 2 Frequency**
Three or four sessions a week gave clear results. Daily sessions were possible, but the returns diminished and sometimes we felt tired.
- 3 Before**
An empty stomach or a light meal: digestion and heat do not mix well. We drink some water beforehand without overdoing it.
- 4 After**
We let the body cool down gradually. When we add the cold plunge, it always comes after the sauna. That sequence is our favourite moment of the day (Chapter 1).

Aftercare

- **Drink.** Water with electrolytes (a pinch of sea salt or a ready mix) works better for us than plain water. Sometimes a herbal tea (ginger or chamomile). No coffee or alcohol right after.
- **Eat.** We wait 30 to 40 minutes, then choose something light: fruit, or a simple protein if it is meal time. Heavy meals after the sauna leave us sluggish.
- **Skin.** A lukewarm shower, then a light moisturiser or aloe gel. This is also the moment when our skin devices work best (Chapter 6).

TIMING

1 Morning

Occasionally, but for us it is too relaxing to start the day.

2 Afternoon

A good reset that clears mental fog for the second half of the day without affecting sleep.

3 Evening

Our favourite time and the one we recommend. A session of 20 to 30 minutes slows us down and leads into deeper sleep, provided we avoid stimulants and heavy meals.

Before or after a workout?

- **Before:** we avoid it. The heat relaxes the muscles and we start training already drained.
- **After:** much better. Circulation improves, soreness drops and the sauna feels like an extension of recovery.
- **Rest days:** in the evening, as part of relaxation and recovery.

WHAT DIDN'T WORK

- **Sessions that were too long.** Beyond 40 minutes we lost the benefit.
- **Daily use for weeks.** Diminishing returns and some fatigue.
- **Sauna before training.** Less strength and energy.

- **Morning sessions.** Pleasant, but they slowed down the start of the day.
- **Sauna and red light back to back.** We tried the panel right before and right after the sauna. We did not notice any benefit beyond what each gives on its own, so we stopped planning them together.

There are also things we have not tried yet. We have never used the sauna to recover after a long flight. We have also never done structured meditation sessions inside the cabin.

WHAT WE MEASURED

We did not keep a formal log for the sauna. The clearest signal is the one we feel: on evenings with a session we fall asleep faster and wake up more rested. If you wear a sleep tracker, the simplest test is to compare two weeks of evenings with and without sauna.

IS IT WORTH IT?

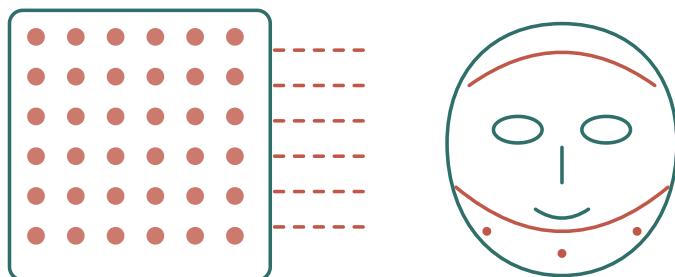
Yes, if you value recovery, relaxation and better sleep. The benefits show up quickly with consistent use.

For beginners or tight budgets, blankets or basic far-infrared cabins give a taste. For the full experience (skin, circulation, recovery, relaxation) a full-spectrum cabin with low EMF is the most complete solution and one of the best investments in home biohacking. For us, the evening session is not negotiable.

NEXT · Chapter 3: red light therapy, from the panel on the wall to the mask on the face.

RED LIGHT THERAPY

Light that supports skin, mitochondria and recovery.



ESSENCE

Red light therapy (RLT) uses specific wavelengths of visible red light (about 600 to 700 nm) and near-infrared light (about 800 to 1000 nm) to stimulate the body at a cellular level. The science behind it is called photobiomodulation.

1 Why it penetrates

Red light reaches a few millimetres into the skin; near infrared goes deeper, into muscle and connective tissue. These wavelengths are not absorbed immediately at the surface (as UV is) and travel further before dispersing.

2 Why it is considered safe

Unlike ultraviolet light, which damages DNA and ages the skin, red and near-infrared light are non-ionising: they do not have enough energy to break molecular bonds. Instead of harming cells, they send them a signal.

3 How it supports energy

Inside the mitochondria an enzyme called cytochrome c oxidase absorbs red and near-infrared light. This makes energy production

more efficient and increases ATP (see the Introduction). More ATP means more capacity for repair, protein building and defence against oxidative stress.

4 How it supports repair

With more energy available, fibroblasts (the cells that make collagen and elastin) become more active. In muscles and joints, recovery after strain speeds up.

5 How it reduces inflammation

Photobiomodulation lowers pro-inflammatory signals and raises anti-inflammatory ones: less swelling, less pain, faster recovery.

RLT does not force the body to do anything unnatural. It gives cells an extra input of energy and the right signals to work more efficiently.

WHAT WE DISCOVERED

We were not expecting dramatic results overnight. What we found was a series of subtle, steady changes that became impossible to ignore over the weeks.

1 Skin

This is where we see the most. At first the difference was just a healthier glow after a session; after a few weeks, less redness, a more even tone, faster healing of small irritations and firmer skin. It may be partly suggestion, but to us the effect is remarkable. It feels structural rather than cosmetic, as if the skin works better from the inside.

2 Back and recovery

We placed the panel on sore muscles after workouts. The effect was not immediate relief, but the next day soreness was consistently lighter. We liked it so much that we added a panel dedicated to the back. For us it helps a lot.

3 Energy and focus

Morning sessions give a clean sense of wake-up energy, without the jitters of caffeine. Honestly, we have not noticed a big

difference between morning sessions and sessions at other times of day: regularity mattered more than the clock.

4 **Mood**

On darker winter days, regular sessions left us less tired and less prone to low mood. Research on light and mood mostly concerns bright light therapy, so we treat this as our personal impression.

What struck us most was not one dramatic effect but the accumulation of small improvements: clearer skin, better recovery, steadier mood, cleaner energy.

WHAT TO KNOW FIRST

1 **Eyes**

Staring into a strong panel is not a good idea. We always wear protective goggles, for body sessions as well as face sessions. It is the simplest rule in this book and we never skip it.

2 **Skin sensitivity**

Early sessions may bring gentle warmth or mild redness that fades quickly. Start with short sessions and let the skin adapt.

3 **Consistency over intensity**

Pushing for the maximum dose did not work: long daily sessions only stressed the skin. Moderate use several times a week gave the best results.

4 **Distance**

Very close exposure felt too hot and too intense. For us 15 to 30 cm is right.

5 **Medication and conditions**

Some medicines make the skin more sensitive to light. If you take photosensitising drugs, have a skin condition or a history of skin cancer, ask your doctor first.

TECHNICAL ELEMENTS

Wavelengths

- **Red (about 600 to 700 nm):** acts mainly on the surface. Collagen and elastin, skin rejuvenation, small wounds.
- **Near infrared (about 800 to 1000 nm):** deeper. Muscles, joints, recovery.
- Devices that combine both felt more complete to us: red for the skin, near infrared for recovery.

Intensity (irradiance, mW/cm²)

- At treatment distance, 20 to 60 mW/cm² worked best for home use.
- Below 15 mW/cm² we felt almost nothing.
- Above 100 mW/cm² the skin sometimes became uncomfortably hot.
- Our rule: strong enough to feel warmth, never burning.

Coverage

DEVICE	BEST FOR	LIMIT
Handheld	Face, joints, scars	Small area per session
LED face mask	Daily facial routine, hands free	Face only
Mid-size panel	Torso, legs, back; mood and recovery	Needs a fixed spot
Full-body system	Whole-body sessions	Space and cost

OUR DEVICES

PlatinumLED BIOMAX 900

The panel we used most consistently for years. Its seven-wavelength spectrum combines blue (480 nm), red (630 and 660 nm) and near infrared (810, 830, 850 and 1060 nm), not only the classic 660 and 850

nm. We appreciated the stable irradiance at 20 to 30 cm, the low EMF design and coverage large enough for the torso or legs. It became our daily tool for energy, recovery and skin.

PlatinumLED BIOMAX PRO Ultra

Our current main panel, now installed at home and exceptional. Compared with the 900 it delivers about 50% more light energy, which means shorter sessions. It also adds what the 900 lacked: control over each of the seven wavelengths individually. With the touchscreen, the remote or the app we can run:

- red only, for collagen and skin;
- near infrared only, for muscles and joints;
- blue only, for surface treatments such as blemishes;
- any combination, or one of the preset programmes (deep tissue, anti-ageing, skin repair, workout, sleep support).

The PRO panels also connect side by side without gaps, so two or more can cover the whole body. They offer a pulsed mode as well; the manufacturer itself says pulsing has no proven advantage; we use continuous light.

Back panel

A smaller panel used only for the back. Having it ready, without moving the main panel, is what made back sessions a habit.

TheraFace Mask Glo

An LED face mask that we wear for the facial routine. The advantage is practical: hands free, even coverage and no need to stand in front of a panel. It has become one of the devices we would not give up. Masks are less powerful than large panels, so the results come from regular use.

We are not affiliated with PlatinumLED, Therabody or any other company. What convinced us were the technical qualities (spectrum, stable power, low EMF, control) not the brand.

OUR ROUTINE AND PRACTICAL TIPS

1 **Body session**

Ten minutes at 20 to 30 cm, face, chest and torso, often in the morning.

2 **After training**

Ten to fifteen minutes on sore areas: legs, back, shoulders.

3 **Face**

Five to eight minutes with the panel or a session with the mask, on clean skin, followed by a light moisturiser.

4 **Frequency**

Three to five sessions a week. More did not add much; skipping a week did not erase progress.

We do not do all three routines on the same day. Usually we choose one or two, which is what keeps the practice sustainable. Linking each session to an existing habit (waking up, training, evening skincare) is what made it stick.

Before

- **Clean skin.** No make-up, sunscreen or heavy creams, which can block the light; no retinol or acids, which can react and irritate.
- **Water** in the morning, or a shake if we train afterwards.
- **A quick shower after training**, then the panel.

After

- **Hydration:** water or electrolytes.
- **Light moisturiser or aloe gel** after facial sessions. No exfoliants, acids or retinol right after: the skin feels more sensitive.
- **Minimal evening routine:** just hydration.

WHAT DIDN'T WORK

- **Long daily sessions.** Stressed skin, no extra benefit.
- **Very short distance.** Too hot.

- **Cheap low-power devices.** Almost no effect.
- **Stacking with the sauna.** No added benefit for us (Chapter 2).
- **Chasing the perfect time of day.** Morning or later, we noticed no real difference.

WHAT WE MEASURED

Only what the mirror shows: tone, redness, firmness. If you want a fair comparison, take photos in the same light every two weeks and look at them after two or three months. Memory is a poor judge of slow changes.

IS IT WORTH IT?

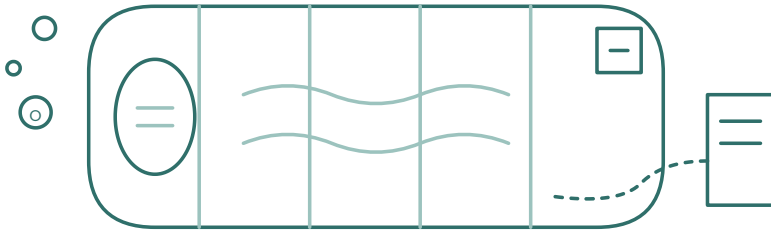
For us, absolutely yes. Red light is one of the most accessible and versatile tools: safe when used sensibly, easy and effective for skin, recovery and mood.

For skin, a handheld device or a good mask is enough. For recovery and whole-body effects, mid-size or large panels are far more efficient. The value is not in one spectacular session but in what happens over weeks and months.

NEXT · Chapter 4: oxygen under pressure. The hyperbaric chamber, our favourite daytime tool.

HYPERBARIC OXYGEN

Oxygen under pressure for recovery, clarity and resilience.



ESSENCE

Hyperbaric oxygen therapy (HBOT) means breathing concentrated oxygen inside a pressurised chamber. The higher pressure allows the lungs to take in more oxygen than they can at normal atmospheric pressure.

1 How oxygen normally travels

At sea level almost all the oxygen we carry is bound to haemoglobin in red blood cells. Once haemoglobin is saturated, which happens with normal breathing, there is very little reserve.

2 What changes under pressure

Under pressure, oxygen also dissolves directly into the plasma (the liquid part of blood) and into other body fluids. The total amount of oxygen available rises, independently of red blood cells.

3 Why it matters

Dissolved oxygen reaches areas that red blood cells serve poorly: tissues with weak circulation, strained muscles, inflamed areas. Mitochondria need oxygen to produce ATP, so repair and recovery have more fuel.

4 **The result**

More efficient metabolism, fibroblasts that rebuild tissue faster, lower inflammation and quicker recovery from physical or mental stress.

Clinical HBOT, used in hospitals for serious wounds, infections or decompression sickness, works at 2.0 to 3.0 ATA under strict supervision. Home chambers use mild pressure, typically 1.3 to 1.5 ATA. They are not a medical treatment. In the United States the FDA has cleared soft, zippered chambers only for altitude sickness, has not cleared them for use with oxygen concentrators and recommends HBOT under the care of a doctor, in an accredited facility.

WHAT WE DISCOVERED

The changes were not dramatic after one session. With consistency, they became clear.

1 **Recovery and energy**

After demanding workouts, an hour in the chamber meant less soreness the next day and faster return of endurance.

2 **Mental clarity**

We often come out with sharper focus and a calm mind. The brain is about 2% of body weight but uses around 20% of the body's oxygen, which may explain why the effect is so noticeable.

3 **Daytime is the best time**

This is the biggest change since we started. Sessions during the day are exceptional: clarity and energy for the hours that follow. In the evening, however, the chamber tends to energise us and we sleep worse. Today HBOT is a daytime tool for us, never the last thing before bed.

4 **Skin**

Small cuts and irritations heal faster with regular use; the complexion also looks fresher. Fibroblasts need a lot of oxygen to produce collagen, which fits what we see.

5 Overall resilience

Over weeks we felt less worn down by training, work and travel. HBOT does not give a rush like the cold plunge. It builds a quiet, steady layer of resilience.

Not one wow moment. A collection of steady improvements.

WHAT TO KNOW FIRST

1 Ear pressure

As the chamber inflates you feel the same pressure in the ears as on a plane. For us it is only a matter of equalising at the start (swallowing or gently clearing the ears); after that, nothing. People with sinus or ear problems may find it uncomfortable.

2 Session length

Sixty minutes is our standard. Under 45 minutes felt too light; beyond 90 minutes we sometimes came out tired.

3 Oxygen delivery

Some mild chambers use compressed air only (21% oxygen). Others, like ours, add an oxygen concentrator connected to a mask, which delivers oxygen at around 90 to 95% purity. Breathing enriched oxygen under pressure makes the effect much stronger; it also raises the fire risk. The FDA has not cleared soft chambers for use with oxygen concentrators.

4 Not for everyone

People with untreated lung problems, chronic ear or sinus problems, uncontrolled blood pressure or claustrophobia should not use HBOT without medical guidance. We spoke to our doctor before starting.

5 Evening sessions

If you are sensitive to stimulation, keep the chamber away from bedtime.

! ATTENTION: FIRE SAFETY

Oxygen-rich environments increase fire risk. The FDA calls for continuous supervision for the whole session, strict fire prevention, cotton clothing and full compliance with the manufacturer's list of prohibited items. Hyperbaric safety standards allow no electronic device inside the chamber unless it is certified for hyperbaric use; whether it is charging or running on battery makes no difference. No lighters, hand warmers, oils or flammable products. Follow the manual and never use a chamber alone.

TECHNICAL ELEMENTS

Pressure levels

LEVEL	PRESSURE	USE
Sea level	1.0 ATA	Normal breathing
Mild HBOT	1.3–1.5 ATA	Home chambers: recovery, resilience
Clinical HBOT	2.0–3.0 ATA	Hospitals, under medical supervision

We stay at 1.3 ATA: strong enough to feel, at the lowest end of the range our chamber allows.

Oxygen concentration

- **Compressed air only (21%):** the benefit comes from pressure alone. It works, but modestly.
- **Oxygen concentrator (90 to 95%):** this is what made the difference for us. Recovery and clarity improved clearly compared with air-only sessions.
- **Oxygen tanks:** typical of hospitals, not practical or advisable at home.

OUR DEVICE: OLIVE 34" SOFT CHAMBER

1 Setup

A 34-inch soft chamber by Olive Electronic Technology, mounted on a sturdy base, with an air compressor and an oxygen concentrator built into the system. It works in a pressure range of 1.3 to 1.5 ATA; we mostly stay at the lower end. Oxygen reaches us through a mask.

2 Controls

Real-time display of chamber pressure and oxygen concentration, a large viewing window that lets in natural light and a wireless remote. We never run a session without someone else at home and within reach of the chamber.

3 Routine

Three or four sessions a week, about 60 minutes each, during the day.

4 Experience

Without oxygen the benefits were present but mild. With the concentrator, recovery and clarity improved noticeably: that was the turning point that made HBOT permanent for us.

5 Results

Less soreness after workouts, clearer focus during the day and faster healing of small skin irritations. Cumulative and steady rather than dramatic.

We are not affiliated with Olive or any other manufacturer.

OUR ROUTINE AND PRACTICAL TIPS

Timing

- **Morning or early afternoon:** our standard. Clarity and energy for the rest of the day.
- **After training:** useful after intense sessions for recovery.

- **Evening:** we avoid it. It gives energy exactly when we want to wind down.

Before

- A light stomach: a heavy meal is uncomfortable under pressure.
- A glass of water or electrolytes.
- After training, a shower first.

During

- The first minutes are for equalising.
- Then the hour is ours: we read on paper. It is one of the few completely undisturbed hours of our day.

After

- Water again.
- A light moisturiser or aloe gel if the mask has dried the skin a little.

WHAT DIDN'T WORK

- **Evening sessions.** We used to think they helped sleep. In practice they energise us and we now keep the chamber to daytime.
- **Air without oxygen.** Pleasant, but the difference was modest.
- **Very long sessions.** Beyond 90 minutes we came out tired.
- **Occasional use.** One session now and then gives little. The benefit is in regularity.

WHAT WE MEASURED

Our evidence is mostly experience: clearer days, lighter soreness and worse sleep when we used the chamber late. That last observation is the most useful one, because it changed our routine.

IS IT WORTH IT?

For us, yes. HBOT is one of the most valuable tools we own: quiet, steady and cumulative. Over time it gave us faster recovery, clearer focus and healthier skin.

For beginners, a few sessions at a wellness centre are a good test before investing. We use a home chamber with an oxygen concentrator; this chapter describes it as our experience. It is not a set-up we suggest you replicate: the route regulators recommend is a doctor and an accredited facility. Clinical chambers at 2.0 to 3.0 ATA belong to hospitals. If we had to keep only one device, it might be this one.

NEXT · Chapter 5: from the body to the brain. Devices that read and nudge brain activity.

BRAIN DEVICES

Electrical and magnetic tools for focus, calm and sleep.



ESSENCE

Electrical and magnetic brain devices are designed to modulate brain activity from the outside. They use currents, pulses, magnetic fields, light or sound to stimulate or calm neural circuits. The brain is an electrochemical organ: neurons communicate through electrical impulses that can be influenced by external energy.

There are two categories to understand.

1 Stimulators (transmitters only)

They deliver currents, pulses or rhythms but do not record brain activity. This group includes tDCS (a very weak direct current through electrodes on the scalp), PEMF (pulsed electromagnetic fields) and brainwave entrainment (rhythmic light or sound).

2 Transceivers (read and respond)

They read brain activity through EEG sensors and respond in real time. Neurofeedback headbands such as Muse measure your state and give feedback through sound. Sens.ai goes a step further and combines EEG reading with light stimulation.

This distinction explains why some devices feel general (always the same stimulation) while others feel personal (adapting to what your brain is doing). Both categories exist in versions designed for home use.

TECHNICAL ELEMENTS: HOW THEY WORK

Neurons communicate through small electrical impulses generated by the movement of ions (sodium, potassium, calcium) across their membranes. Weak currents or magnetic fields do not force neurons to fire; they change how likely they are to fire.

1 **tDCS**

A current of 1 to 2 mA flows between two electrodes. Neurons under the positive electrode become slightly more excitable, those under the negative one slightly less. The effect is subtle and needs repeated sessions. Research results are mixed. Correct electrode placement matters.

2 **PEMF**

Low-frequency magnetic pulses pass through tissue and influence ion channels and local circulation. The effect is more about general relaxation and recovery than precise brain targeting.

3 **Brainwave entrainment**

The brain tends to synchronise with rhythmic stimuli. Alpha rhythms (8 to 12 Hz) are linked to calm, beta (12 to 30 Hz) to focus, theta (4 to 8 Hz) to meditation, delta (0.5 to 4 Hz) to deep sleep. It works as a nudge, not a command.

4 **Neurofeedback (Muse, Sens.ai)**

The device reads your brainwaves and responds. With Muse, the soundscape turns stormy when the mind wanders and calm when it settles. With Sens.ai, gentle light pulses help bring the brain back to the target state. The brain learns by direct reinforcement and, with practice, reaches those states more easily even without the device.

IN SHORT

These devices do not force the brain; they shift probabilities and nudge rhythms. They make familiar states (focus, calm, creativity, sleep) easier to reach. They are not treatments and they do not replace healthy habits: they amplify what you practise.

WHAT WE DISCOVERED

1 **Muse**

Our entry point and a device we have used with real continuity. It does not force a state; it makes you aware of when you are distracted or tense. With practice, that awareness carried over into steadier meditation and focus.

2 **Sens.ai**

We have tried all the programmes (focus, calm, sleep and the others) and all of them seem to work for us. In focus mode we settle into deep work faster; in calm mode relaxation and meditation become easier. Over weeks, the most important effect was flexibility: switching between on and off states became smoother.

3 **PEMF mat**

For a long time we used it in the evening: lying on it after a long day brought calm and physical relaxation. Today the mat is used mostly by our dogs, who seem to enjoy it as much as we did.

4 **Audio entrainment**

Useful for relaxation and before sleep. It does not knock you out, but it makes the transition smoother.

Our path went from simple transmitters (PEMF and audio, general nudges) to feedback devices (Muse, which trains awareness) and then to closed-loop systems (Sens.ai, which reads and corrects). At each step the mechanism became more sophisticated. So did the results.

WHAT TO KNOW FIRST

1 **Electrical stimulation is not for everyone**

People with epilepsy, a history of seizures, implanted devices (pacemakers, cochlear implants), metal in the head or who are pregnant should avoid tDCS and similar devices unless a doctor approves.

2 **Skin and placement**

Poorly placed or dry electrodes can irritate or even burn the skin. Follow the instructions and never exceed the stated current or duration.

3 **Flashing light**

Light-based stimulation can trigger seizures in people with photosensitive epilepsy.

4 **Expectations**

Results are subtle and depend on regular use. A few sessions change little.

OUR ROUTINE AND PRACTICAL TIPS

- **Muse:** short sessions, 10 to 20 minutes, often as the start of a meditation.
- **Sens.ai:** focus programmes before deep work, calm programmes in the afternoon or evening.
- **Audio entrainment:** before sleep, with headphones, at low volume.
- **Consistency:** a few times a week is better than long, rare sessions.

WHAT DIDN'T WORK

We have not abandoned any of these devices: each still has a place. What did not work was expecting instant results. The first sessions with any neurofeedback device can feel like nothing is happening; the change becomes visible only after weeks.

We have never used tDCS ourselves. We describe it because it is widely sold for home use and readers ask about it, not because we can vouch for it.

WHAT WE MEASURED

Neurofeedback devices measure themselves: Muse and Sens.ai record every session. The progress in calm or focus time is visible in the app. That is the only data we follow here.

IS IT WORTH IT?

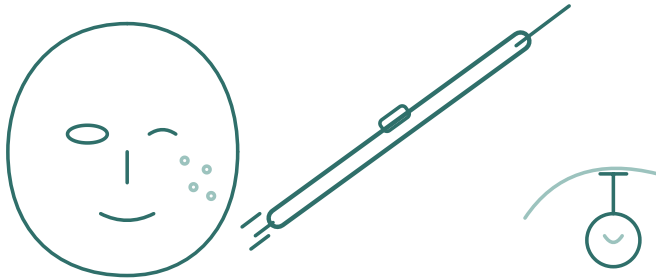
For us, yes, especially neurofeedback. Muse is an affordable way to learn what calm and focus feel like from the inside. Sens.ai is a bigger investment that pays off if you use it regularly.

PEMF and audio entrainment are pleasant supports for relaxation. Electrical stimulation such as tDCS is the category where we would be most careful: evidence is mixed and correct use matters.

NEXT · Chapter 6: skin and scalp. Radiofrequency, microcurrent and microneedling.

SKIN & SCALP DEVICES

Radiofrequency, microcurrent and microneedling at home.



ESSENCE

This chapter covers three technologies that act directly on skin and scalp: radiofrequency (RF), microcurrent and microneedling. They do not replace professional treatments, but used consistently they create targeted responses in the tissue that support quality, tone and density over time.

Radiofrequency

RF devices deliver electromagnetic waves (typically 0.3 to 10 MHz) that pass through the surface of the skin and create controlled heat in the dermis. When collagen fibres are gently warmed to around 40 to 45°C they contract, giving an immediate tightening effect. The mild thermal stress also stimulates fibroblasts to produce new collagen and elastin over the following weeks. The result is not an instant lift but gradual remodelling.

Microcurrent

Microcurrent uses extremely weak currents, in the microampere range, that resemble the body's own bioelectric signals. They gently activate facial muscles without the strong contractions of gym EMS, improve circulation and lymphatic drainage and reduce puffiness. A much-quoted laboratory study from 1982 on animal skin reported a several-fold increase in ATP with microcurrent; human data are far more limited.

Microneedling

A pen moves a cartridge of very fine needles in and out of the skin at high speed, creating thousands of controlled micro-channels. The skin reads them as small injuries and responds with a repair process that produces new collagen and elastin. The channels also let serums penetrate far better than on intact skin. On the scalp, microneedling is used to support hair density; studies suggest it works best combined with a topical treatment.

IN SIMPLE TERMS

RF works through heat and rebuilds the scaffolding of the skin. Microcurrent works through bioelectricity and tones the muscles underneath. Microneedling works through controlled micro-injury and triggers the skin's own repair.

WHAT WE DISCOVERED

1 Firmness and elasticity (RF)

After several weeks, fine lines looked softer and the skin had more bounce. Not artificial: healthier skin that works better.

2 Natural lift and tone (microcurrent)

The jawline and cheeks looked subtly more defined, with less puffiness after each session. Over time the improvement held longer: more like a rested version of ourselves than a filler.

3 Circulation and glow (both)

Right after sessions the skin looked brighter.

4 **Microneedling: the standout**

The Dr. Pen is one of the devices we value most, on the face and on the scalp. We use cartridges with 36 and 24 needles and the nano cartridge for more frequent, very superficial sessions. The results are excellent in every area we have treated: texture, firmness and, on the scalp, the look of the hair.

5 **Consistency**

One session makes the skin feel fresher; structural changes appear only with weeks of regular use.

WHAT TO KNOW FIRST

1 **Heat (RF)**

Gentle warmth is enough. More heat did not mean more results, only more redness.

2 **Sensitive areas**

Around the eyes we use shorter sessions and lower settings.

3 **Conductive gel**

RF and microcurrent need a water-based gel or serum. Without it the treatment is uncomfortable and less effective.

4 **Needle depth**

The deeper the needle, the stronger the response and the greater the risk. When we go to 1 to 1.25 mm and insist on an area, the skin turns red; for us the redness fades quickly and that is the level where we feel the treatment really works. Depths above 0.5 mm belong to professional settings. The FDA has not authorised any microneedling device for home use. What we describe here is our experience, not an instruction.

5 **Hygiene**

Sterile, single-use cartridges only. Never reuse or share them. Clean the skin and the pen before every session.

6 **When not to needle**

Active acne, infections, cold sores, open wounds, eczema or psoriasis in the area, a tendency to keloid scars, isotretinoin

treatment in recent months, blood-thinning medication or pregnancy: ask a dermatologist first.

7 What goes on the skin after needling

The FDA states that microneedling devices are not approved for delivering cosmetics, serums, vitamins or drugs into the skin. Anything applied to freshly needled skin penetrates much further than usual and can cause irritation, infection or granulomas. We describe the serums we use; this is not a recommendation to do the same. Sunscreen during the day is essential.

8 Limits

None of these tools replaces dermatology or surgery.

! ATTENTION: MICRONEEDLING

Needle depths above 0.5 mm belong to professional settings. What we describe is our experience, not an instruction. Sterile single-use cartridges, a clean pen and a dermatologist's opinion come first; if in doubt, do not needle.

TECHNICAL ELEMENTS

	RADIOFREQUENCY	MICROCURRENT	MICRONEEDLING
Energy	Electromagnetic waves, 0.3–10 MHz	Current in the µA range	Mechanical micro-injury
Target	Dermis, collagen	Muscles, circulation	Collagen, product absorption, hair follicles
Feeling	Gentle warmth	Faint tingle	Pressure, redness at depth
Rhythm	2–3 times a week	2–3 times a week	Deeper sessions spaced weeks apart; nano more often

Depths used in professional practice (for reference only)

DEPTH	TYPICAL USE
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Nano	Surface, product absorption, frequent use
0.25–0.5 mm	Texture, glow, scalp
0.5–1.0 mm	Fine lines, firmness
Above 1.0 mm	Scars and deeper remodelling, usually in professional settings

What makes a good device

- **Stability:** even heat for RF, steady current for microcurrent, constant speed and precise depth control for a pen.
- **Control:** several levels to find the right intensity.
- **Build quality:** smooth applicators, sealed cartridges, materials that feel safe on the skin.
- **An effect you can feel:** not extreme, but present. If nothing happens, the device is probably not doing its job.

OUR DEVICES

Yaman Photo PLUS Prestige PRO (M30)

A Japanese device that combines RF, EMS and microcurrent, ion cleansing and infusion, LED light (red and orange for vitality, blue for blemishes) and a COOL mode that calms the skin.

- **CLEAN** (2 to 3 times a week, about 3 minutes): RF and ions to cleanse and prepare the skin.
- **NEO DYHP** (about 5 minutes): our favourite for lift and serum infusion.
- **EYE** (about 3 minutes, up to 5 times a week): the delicate area around the eyes.
- **COOL** (daily): calms redness and closes the routine.

With two or three sessions a week the skin became more elastic and plump, with less puffiness and more definition. What convinced us, compared with cheaper tools, was stability: even heat and a current you can feel but never unpleasant.

Dr. Pen M8

Our microneedling pen, used on the face and the scalp with cartridges of 36 and 24 needles and the nano cartridge. After needling we apply serums (the Niod and The Ordinary ranges on the face, a copper peptide serum on the scalp), with the caveat on product delivery explained above. GHK-Cu is a common cosmetic ingredient; the evidence for hair is still mostly from laboratory studies, but it fits well into our scalp routine.

We are not affiliated with Yaman, Dr. Pen, Niod, The Ordinary or any other brand.

STACKING WITH OTHER TOOLS

1 **Sauna first**

We tried the Yaman both before and after the sauna. After is better: the skin is warm and more receptive. RF before the sauna left the skin red and sensitive.

2 **Red light**

Before RF or microcurrent it prepares the skin; after, a short session (5 to 10 minutes) works as a calming step.

3 **HBOT**

Separate practices. HBOT during the day, skin devices in the evening.

4 **Cold plunge**

Not right before RF: the skin feels tight and less responsive. A plunge in the morning and skin care in the evening work well.

5 **Yaman and Dr. Pen**

Never in the same week. We alternate them, so the skin always has time to recover from microneedling before any heat or current.

OUR ROUTINE

- **Yaman:** two or three evenings a week, ideally after the sauna.

- **Dr. Pen, nano cartridge:** frequent, very light sessions with serums.
- **Dr. Pen, deeper sessions:** spaced out, never in a Yaman week.
- **After every session:** gentle hydration only (moisturiser, aloe, hyaluronic acid) and sunscreen the next day.

WHAT DIDN'T WORK

- **Cheap devices.** RF that heats unevenly, microcurrent you cannot feel: little beyond the ritual.
- **More heat.** Only more redness.
- **RF before the sauna.** Irritated skin.
- **Combination devices of poor quality.** Worse than two separate good tools.
- **Strong actives after treatment.** Irritation. Hydration is enough.

WHAT WE MEASURED

Photos. Face and scalp, same light, same angle, every two or three weeks. For microneedling on the scalp in particular, photos are the only reliable way to judge progress: hair changes too slowly for the mirror.

IS IT WORTH IT?

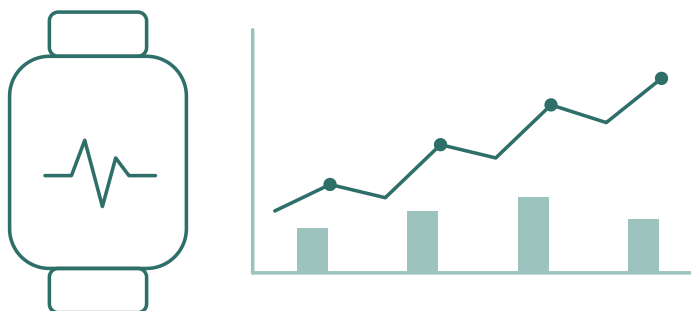
For us, yes. These are the most visible and motivating tools in our routine: here we actually see the change.

RF strengthens the scaffolding of the skin, microcurrent keeps the muscles toned and microneedling triggers the deepest renewal. The Dr. Pen in particular is one of the devices we would never give up. None of them works miracles overnight; with consistency, quality devices and sensible hygiene they give firmer skin, a fresher tone and a more rested look.

NEXT · Chapter 7: how to know whether any of this is working. Wearables, tests and feedback.

MEASURING WHAT MATTERS

Wearables, tests and feedback loops.



ESSENCE

Biohacking often fails when people copy someone else's routine. Genetics, age, sex, lifestyle and stress all change how a body responds. Some people thrive on fasting; others crash. Some recover quickly from heat; others need more water and minerals. There is no universal protocol, only yours.

Without some form of measurement, personalisation is just guessing. Wearables, blood tests and simple notes create feedback loops that show what is working and what is not.

WHAT WE DISCOVERED

1 Whoop

Exceptional for us. It tracks sleep, strain and recovery. The effect is subtle: you start chasing a better score and, without noticing, you

adjust your habits (earlier nights, fewer late meals, more recovery after hard days).

2 Alcohol shows up

Whether we drink in the evening or during the day, we feel it the next day. Age probably plays a part.

3 Blood tests change decisions

Our vitamin D improved clearly once we corrected it on the basis of a blood test. Testing prevents blind supplementation (Chapter 9).

4 Glucose monitors

We have worn a continuous glucose monitor (CGM). It is interesting to see how meals and stress move blood sugar in real time; in our case, no food gave a real surprise.

WHAT TO KNOW FIRST

1 Wearables estimate, they do not diagnose

Sleep stages and recovery scores are calculated from indirect signals. Use them for trends, not as medical data.

2 Over-tracking

Too much data creates stress. Follow only the numbers that lead to a decision.

3 Copying others

What works for someone online may not work for your biology.

4 Intuition still counts

Mood, energy and clarity are data too.

TECHNICAL ELEMENTS

HRV in two lines

Heart rate variability (HRV) is the small variation in time between one heartbeat and the next. Higher values usually mean a rested, adaptable nervous system; lower values often mean stress, poor sleep, illness or

alcohol. Recovery scores such as Whoop's are built largely on HRV, resting heart rate and sleep, so if you follow the score you are already following your HRV.

TOOL	WHAT IT SHOWS	HOW WE USE IT
Recovery trackers (Whoop, Oura)	HRV, resting heart rate, sleep, strain	Every day, as a guide
CGM	Blood sugar response to meals and stress	In short cycles
Blood tests	Vitamin D, magnesium, iron, hormones, inflammation, lipids	Periodically, with a doctor
Neurofeedback apps	Calm and focus over time	With Muse and Sens.ai (Chapter 5)
Photos and notes	Skin, hair, energy, mood	Every few weeks

The feedback loop

- 1 **Track**
Establish a baseline: sleep, recovery, labs.
- 2 **Change one thing**
A food, a supplement, a device, a timing.
- 3 **Measure**
Objective data and how you feel.
- 4 **Decide**
Keep, adjust or drop.

OUR ONLY STRICT RULE

Never change more than one thing at a time. If you start three new habits together, you will never know which one worked.

OUR ROUTINE

- **Whoop:** worn continuously. We look at recovery and sleep, not at every graph.
- **CGM:** in cycles of a couple of weeks, not all year round.

- **Blood tests:** periodically, especially before changing supplements.
- **Data and feelings together:** if the numbers look fine but we feel off, we look further.

WHAT DIDN'T WORK (AND WHAT WE WOULD CHANGE)

Measuring also shows the habits we have not fixed yet. We share them because they are real.

- **Caffeine at any hour.** Coffee late in the day, sometimes a pre-workout at ten in the evening before the gym. We know it does not help sleep and we are working on it.
- **The phone in the bedroom.** Still there.
- **Tracking for its own sake.** Early on we looked at too many numbers. Recovery and sleep are enough.

IS IT WORTH IT?

Yes. Measurement turns a collection of experiments into a system tuned to your body: fewer wasted efforts, fewer risks from blind supplementation and more confidence in your own choices.

The key is balance: enough feedback to guide decisions, not so much that life becomes a spreadsheet.

PART II

NUTRITION

Fuelling the body from the inside out



If technology works from the outside in, nutrition does the opposite: it works from the inside out. Every bite, every sip, every supplement sends signals to the body. Those signals can support energy, repair and resilience, or weigh us down with fatigue and inflammation.

When we began treating food as information instead of just calories, everything shifted. Meals stopped being only fuel or pleasure and became part of our toolkit. Recovery felt faster, focus clearer and our baseline energy more stable.

This part is not about diets, restrictions or miracle foods. It is about simple, consistent choices that support:

- 1 **Performance**
Steady energy and focus throughout the day.
- 2 **Resilience**
Faster recovery from stress, training or illness.
- 3 **Longevity**
Lower inflammation and healthier cells over the long term.

Technology gave us tools we can hold in our hands. Nutrition gives us tools we can put on our plate. Both matter, but nutrition builds the foundation.

In the following chapters:

- **Functional eating:** choosing foods that improve how we feel and perform.
- **Smart supplementation:** concentrated support when food is not enough, including NAD+.
- **Hydration and electrolytes:** the most overlooked base of recovery and energy.
- **Peptides:** what they are, how they were used and why everything is on hold.
- **Cyclical nutrition:** fasting, carb cycling and keto as flexible tools.

FUNCTIONAL EATING

Food choices that support energy, clarity and hormonal balance.



ESSENCE

Functional eating means looking at food not just as calories or pleasure but as information that gives instructions to the body. Every meal, depending on how it is composed, gives our cells a set of biochemical instructions. Nutrients are not passive: once digested, they trigger hormones, enzymes and molecular switches.

A meal can tell the body to produce energy, reduce inflammation and repair tissue; a poorly built one can tell it to store fat, trigger stress responses and slow down. What matters is not only what we eat but how the body responds to the whole composition of the meal.

1 Proteins

Broken down into amino acids, they act as raw material and as signals. They activate pathways such as mTOR, telling the body to repair tissue, build muscle and produce enzymes and hormones. For us, meals richer in quality protein meant faster recovery and less fatigue. Complete proteins (meat, fish, eggs, dairy) provide all essential amino acids; plant proteins need to be combined.

2 **Fats**

Dietary fats shape hormones and cell membranes. Omega-3s calm inflammatory processes, while too much omega-6 pushes the opposite way. Healthy fats (fish, nuts, seeds, olive oil, avocado) support balance; saturated fats in moderation play structural and hormonal roles; industrial trans fats and hydrogenated oils send the wrong instructions.

3 **Carbohydrates**

They become glucose and drive insulin. Refined carbs (sweets, white bread, sodas) say "store quickly" and cause energy swings. Complex carbs (whole grains, vegetables, legumes, oats, sweet potatoes) say "fuel gradually". Switching from fast to slow carbs transformed our energy: no more crashes in the middle of the day.

4 **Micronutrients and phytochemicals**

The fine-tuning instructions. Polyphenols from berries, cocoa and green tea strengthen antioxidant defences; omega-3s lower inflammatory messengers; probiotics and prebiotics reshape the gut microbiome, which influences immunity and even serotonin; vitamins and minerals are the cofactors without which enzymes cannot work. Colourful vegetables, fruit, herbs and fermented foods keep this system on track.

Functional eating is not a diet. It is a way of choosing
and combining foods.

WHAT WE DISCOVERED

1 **Energy stability**

We used to start the day with quick carbs: pastries, bread, sweet coffee. A burst of energy, then heaviness two hours later. With protein and fat breakfasts (eggs, nuts, protein shakes, Greek yoghurt with seeds) the instruction changed from "spike and crash" to "steady fuel". With carbs at breakfast, hunger comes back almost immediately; with protein and fat it does not.

2 Mental clarity

Foods rich in omega-3s (salmon, sardines, walnuts) and polyphenols (berries, extra virgin olive oil, dark chocolate) gave us sharper focus and a better mood. On days with these foods, concentration lasted longer.

3 Inflammation and recovery

After hard workouts, replacing heavy processed meals with turmeric, ginger, leafy greens and oily fish made soreness fade faster. We also felt less background fatigue during busy weeks.

4 Gut health

Fermented foods (kefir, sauerkraut, kombucha) made digestion lighter and reduced bloating. When the gut felt good, energy and mood improved too.

5 Timing and structure

Heavy, carb-rich dinners slowed our sleep, while lighter meals let us rest better. At lunch, protein, slow carbs and vegetables gave energy that lasted into the afternoon.

We did not change everything at once. First breakfasts, then anti-inflammatory foods, then fermented products; only later did we combine nutrition with technology. Step by step, we could see which foods removed the midday crash, which choices improved sleep and how food and tools worked together instead of confusing the picture.

A final observation

Once we had been through this ourselves, it became easy to see why so many people struggle with low energy, poor digestion and restless sleep. We are not talking about the stress of work or life, which is part of everyone's reality, but about the parts that are easy to adjust: what you eat, when you eat and how you balance the basics. What used to look like a maze of contradictions now has a clear key. The solutions are often simpler than we imagined.

KNOW YOURSELF: ΓΝΩΘΙ ΣΕΑΥΤΟΝ

The ancient Greeks placed enormous importance on a simple principle: *gnōthi seautón*, know yourself. Inscribed at the temple of Apollo in Delphi and later embraced by Socrates, it meant the constant practice of paying attention to who we are, what we need and where our limits lie.

Applied to health, it is timeless. Knowing yourself means recognising the signals of your body: which meals give you energy and which drain you, but also when the body asks for rest, when it is fighting an infection or when a small imbalance appears long before it becomes an illness. Said aloud it sounds obvious; in practice most of us ignore these signals until it is too late.

For us, functional eating is one expression of this ancient truth. By observing, remembering and interpreting the body's signals, we build a personal code that guides not only what we eat but how we live.

TECHNICAL ELEMENTS: FOOD AS INFORMATION

A pathway is a chain of biochemical reactions: one molecule triggers another, like falling dominoes, until a clear biological effect appears (repair, growth, fat storage, inflammation). Different nutrients switch on different circuits, which is why the same calories can lead to very different outcomes.

1 **mTOR, the growth and repair switch**

Amino acids from protein activate it: "repair, rebuild, grow". We saw it most clearly after workouts.

2 **AMPK, the energy sensor**

Switched on when fuel is low (after exercise, with lighter meals or longer gaps between meals): "save energy, burn fat, clean up". Green tea and polyphenol-rich plants support it.

3 **Insulin and IGF-1, storage and growth**

Fast carbs trigger a strong insulin release; slow carbs a gradual one. Oatmeal in the morning gave us hours of smooth energy; white bread led to a crash before lunch.

4 Nrf2 and NF-κB, defence and inflammation

Polyphenols activate Nrf2 and cellular defences. Sugar and poor fats overstimulate NF-κB; turmeric, ginger and omega-3s calm it.

A plate of salmon and greens activates repair, efficiency and defence. A plate of processed fast food pushes insulin and inflammation: store, inflame, slow down.

NUTRIENT	PATHWAY	INSTRUCTION	EVERYDAY EXAMPLE
Proteins (meat, fish, eggs, legumes)	mTOR (growth and repair switch)	Repair, rebuild, regenerate	Salmon or eggs after training: faster recovery, less soreness
Energy stress (light meals, exercise, polyphenols)	AMPK (energy sensor)	Burn fat, recycle damaged components	Green tea or a longer gap between meals: a lighter feeling
Carbohydrates (bread, pasta, oats, sweet potatoes)	Insulin / IGF-1	Store or fuel, depending on type and timing	Oats in the morning: steady energy. Pizza at night: restless sleep
Micronutrients (berries, olive oil, cocoa, turmeric)	Nrf2 (defence switch)	Boost antioxidant defences	Blueberries or green tea: cleaner energy, better recovery
Processed food (fried food, excess sugar, poor fats)	NF-κB (inflammation switch)	Stay inflamed, slow recovery	Processed snacks: heaviness, sluggishness, stiff joints

FUNCTIONAL FOODS AND HOW THEY WORK

Nutrients often work in synergy: one makes another more absorbable, or they activate complementary pathways. These are the categories that helped us most.

Anti-inflammatory foods

Curcumin (turmeric), gingerols (ginger) and polyphenols (olive oil, green tea) calm NF- κ B and reduce background inflammation, soreness and stress.

- **Turmeric with black pepper:** piperine can raise curcumin absorption dramatically (up to twentyfold in a well-known study).
- **Extra virgin olive oil:** our daily fat. We choose extra virgin, not simply virgin, because it comes from the first mechanical pressing without heat or chemicals and keeps the highest content of polyphenols and antioxidants. Refined seed oils (sunflower, corn) are high in omega-6 and oxidise more easily. Avocado oil is our occasional alternative.
- **Olive oil with leafy greens:** fat improves absorption of fat-soluble vitamins such as vitamin K.
- **Green tea with lemon:** vitamin C helps stabilise the catechins.

What we noticed: smoother joints after training, lighter digestion, steadier afternoon focus.

Gut-friendly foods

Fermented foods (kefir, yoghurt, sauerkraut, kimchi) provide probiotics; garlic, onions and bananas provide prebiotic fibre that feeds them.

- **Kefir with berries:** probiotics and polyphenols together.
- **Sauerkraut with meat or fish:** easier digestion of protein.
- **Garlic and onions in cooked dishes:** everyday prebiotics.

What we noticed: less bloating, more regular digestion and a surprisingly steadier mood in stressful weeks.

Brain-boosting foods

Omega-3s from fatty fish and walnuts become part of neuron membranes and reduce inflammation in the brain; polyphenols in blueberries and dark chocolate protect neurons from oxidative stress.

- **Fatty fish with extra virgin olive oil:** omega-3s plus the polyphenols and monounsaturated fats of the oil.
- **Walnuts with dark chocolate:** healthy fats and flavonoids.
- **Blueberries with Greek yoghurt:** antioxidants and probiotics for the gut-brain axis.

What we noticed: clearer focus, better resilience under pressure, less brain fog.

Recovery foods

After exercise or stress the body needs protein to rebuild, greens for minerals and antioxidants, slow carbs to refill muscle glycogen and berries to calm oxidative stress.

- **Eggs with spinach:** protein, iron and antioxidants.
- **Sweet potatoes with extra virgin olive oil:** slow carbs plus fat for vitamin A absorption.
- **Berries in a protein shake:** recovery fuel and antioxidants in one glass.

What we noticed: faster bounce-back, less stiffness, no heavy crash meals.

NUTRIENT SYNERGIES WORTH REMEMBERING

- **Vitamin D** is fat-soluble: we always take it with a meal that contains fat. This is one of the reasons our breakfast is built on protein and fat.
- **Iron** is absorbed better with vitamin C (spinach with lemon, red meat with citrus).
- **Calcium** competes with iron: we avoid combining dairy with iron-rich meals.
- **Magnesium** calms the nervous system; with leafy greens and nuts at dinner it improved our sleep.

A salad of spinach, olive oil and lemon is not just a salad: it is iron, vitamin C and healthy fat working together.

OUR ROUTINE: BREAKFAST

Breakfast sets the tone for the day. We take vitamin D and several other supplements in the morning that need fat to be absorbed, so a protein and fat breakfast is also the practical choice.

- **Eggs with spinach and extra virgin olive oil:** protein, micronutrients, healthy fat.
- **Greek yoghurt with walnuts and blueberries:** probiotics, omega-3s, polyphenols.
- **Protein shake with berries and flaxseed** on busy mornings.

Compared with carbs, this breakfast gives steady focus, no mid-morning slump, a calmer mood and fewer sugar cravings later. On the mornings we manage it, green tea instead of coffee gives a gentler lift.

OUR ROUTINE: LUNCH

Lunch decides how the afternoon will feel. For a long time our midday meals were heavy: pasta, bread, large portions of carbs, then drowsiness. What works better is protein, vegetables and moderate slow carbs.

- **Grilled fish or chicken with a large salad** (leafy greens, tomatoes, olive oil, lemon).
- **Lentil or chickpea salad** with olive oil and herbs.
- **Sweet potatoes or quinoa** on training days.

Pasta or pizza at lunch almost guaranteed a sleepy afternoon, so we keep them for rare occasions. Olive oil with greens, citrus with iron-rich foods and a fermented side dish complete the plate.

OUR ROUTINE: DINNER

Dinner is where we made our biggest mistakes: pasta, pizza and bread in the evening meant slow digestion, restless sleep and tired mornings. After a heavy pizza, sometimes we did not sleep at all. Today dinner is not about refuelling but about preparing for rest.

- **Grilled fish or lean meat** with steamed or roasted vegetables and extra virgin olive oil.
- **Vegetable soups or broths**, sometimes with legumes.
- **Eggs with greens** when we want something quick and light.
- **Ginger or herbal tea** after the meal; magnesium-rich foods (spinach, pumpkin seeds) or a magnesium supplement for relaxation.

OUR ROUTINE: SNACKS

Snacks used to be a weak point: bread, crackers or sweets, then fatigue or irritability. We now see them as small tools for energy, recovery or focus.

- **Nuts and seeds** (walnuts, almonds, pumpkin seeds).
- **Greek yoghurt with berries.**
- **Dark chocolate** (85% or more).
- **A protein shake with flaxseed** on busy days.

After workouts, a protein snack with some carbs speeds recovery; in the evening, magnesium-rich snacks support relaxation if dinner was light. Pumpkin seeds with an orange combine iron and vitamin C; dark chocolate with walnuts is our favourite brain snack.

MEAL TIMING AND OTHER TOOLS

When we eat, especially around heat, cold, light or oxygen, changes the result as much as what we eat.

- 1 **Cold plunge**
A light stomach. After a heavy meal the plunge made us feel unwell. Afterwards, water or electrolytes first; food later.
- 2 **Infrared sauna**
A light meal one or two hours before. Afterwards, hydration above all, then a light dinner that extends the relaxation.

3 Red light

Pairs well with a protein and fat breakfast; after training, with a protein and carb snack.

4 Hyperbaric chamber

Always on a light stomach. Our sessions are during the day, so a light breakfast or lunch comes first.

The rule we follow: light fuel before intensity, protein and carbs after stress or training, fats and antioxidants with the calm practices.

WHAT DIDN'T WORK

- **Carb breakfasts.** Hunger returned almost immediately.
- **Heavy evening meals.** Poor sleep, sometimes none.
- **Pasta or pizza at lunch.** Lost afternoons.
- **Changing everything at once.** Impossible to understand what was working.

WHAT WE MEASURED

We have worn a continuous glucose monitor to see how meals affect blood sugar (Chapter 7). No food gave us a real surprise: the monitor mostly confirmed what our energy was already telling us.

IS IT WORTH IT?

For us, absolutely yes. Functional eating turned food from something casual, even confusing, into a daily tool for resilience, energy and clarity.

It is not about perfection. We still have pizza sometimes, or a heavy meal with friends. The difference is that now we know what those choices do and how to balance them. The value is not in any single superfood but in the pattern: small, consistent choices that change how you feel over weeks and months.

NEXT · Chapter 9: smart supplementation. When food is not enough.

SMART SUPPLEMENTATION

Vitamins, minerals, amino acids, fatty acids and what is worth it.



ESSENCE

Supplements are often the most misunderstood part of biohacking. For some people they are the first step; for others, the last piece added after nutrition, sleep and lifestyle are in place. For us they became a bridge: when food alone was not enough, targeted supplements gave the body the extra signal it needed.

Supplements are concentrated forms of nutrients (vitamins, minerals, amino acids, fatty acids) that fill dietary gaps or support specific functions. They do not replace real food, but they can correct deficiencies, support energy metabolism and reinforce weak spots. Vitamin D, for example, is almost impossible to obtain in sufficient amounts from food alone, especially in winter; magnesium, omega-3s and probiotics are present in food, but not always in the amounts that make a difference.

WHAT WE DISCOVERED

For years supplements were background noise: a multivitamin here, some vitamin C in winter, omega-3 now and then. Honestly, we thought much of the effect was placebo.

That changed when we started working with a doctor highly respected in the field of anti-ageing medicine, one of the key inspirations for this book. When problems appeared, he rarely started with medication. He started with precise supplement protocols: mostly simple, accessible products, some we knew and some we had never heard of, all available without prescription. What made the difference was how they were combined, timed and sequenced.

One of us had unexpectedly high cholesterol on routine bloodwork; another had a sudden rise in blood pressure. In both cases the doctor chose targeted supplement protocols, monitored the results and, within a few weeks, the markers improved.

! ATTENTION: MEDICATION

These were decisions made and monitored by a doctor for specific people. Never stop, reduce or replace prescribed medication on your own. Tell your doctor about every supplement you take: some interact with medicines.

What impressed us most was that results depended not only on the substance but on the brand and formulation. Two products can look identical on the label and behave very differently. Quality, purity and form mattered as much as the protocol.

The right substance, in the right form, at the right time,
from the right source.

Today we take a structured set of supplements every morning with a breakfast that contains fat. Over the years we have not dropped any of the core ones: each earned its place.

VITAMINS: COFACTORS FOR COUNTLESS REACTIONS

Vitamins do not provide energy directly; they are the keys that let enzymes work.

Vitamin D

Fat-soluble and closer to a hormone than a vitamin, it supports immunity, bones, hormonal balance, mood and muscle function. Many cells carry vitamin D receptors, so its signal is widespread. Most people are low: we live indoors, sunscreen and seasons limit production and food sources are few. Our own blood tests showed lower than ideal levels before supplementation; our vitamin D improved clearly once we corrected it.

1 Take it with fat

On an empty stomach the effect was negligible; with olive oil, avocado, nuts or eggs it changed.

2 Timing

Morning or midday felt better for mood and energy; evening doses sometimes disturbed our sleep.

3 Consistency

Steady intake over weeks changed both how we felt and our blood results.

Vitamin D can be overdosed. Test your levels and agree the dose with a doctor, especially with high-dose products.

Vitamin C

A frontline antioxidant and an essential cofactor for collagen, the protein that makes up about 30% of the body's protein and forms the scaffolding of skin, cartilage, tendons and blood vessels. Without vitamin C collagen cannot mature correctly, which is why deficiency

historically caused scurvy. It also supports white blood cells, improves absorption of plant iron and is consumed quickly under stress and intense training.

- Taken with iron-rich meals, it improved iron absorption and reduced fatigue.
- Small daily doses worked better than rare megadoses, which sometimes upset digestion.
- With collagen peptides, the effect on skin and joints seemed stronger.

B complex

B vitamins work like spark plugs: B1, B2, B3 and B5 are central to energy production in the mitochondria; B6, B9 and B12 take part in making serotonin, dopamine and GABA. Stress, alcohol and intense training use them up faster.

- Morning intake supported clarity; in the evening they sometimes overstimulated us.
- Methylated forms (methylcobalamin, methylfolate) worked better for us than cyanocobalamin or folic acid.
- Regular intake smoothed our energy and improved stress tolerance.

MINERALS: STRUCTURE AND REGULATION

Magnesium

It calms the nervous system, supports energy metabolism (it takes part in more than 300 enzymatic reactions) and stabilises muscles and nerves. It is one of the most common deficiencies: stress, coffee, alcohol and training drain it. Blood tests often miss a low status because only about 1% of the body's magnesium is in the blood.

- **Timing:** in the evening it is perfect for our sleep. In the morning it sometimes made us too calm.
- **Form:** cheap magnesium oxide did little; citrate or glycinate worked and were easier on digestion.

- **Consistency:** over weeks, better recovery, fewer cramps and deeper sleep.

For us magnesium became a cornerstone.

Iron

Part of haemoglobin and myoglobin, it carries and stores oxygen. Deficiency is common with plant-based diets, heavy training or blood loss. Without vitamin C, iron felt almost useless; with it, energy and lab values improved. Too much iron is harmful: test before supplementing.

Zinc

Involved in hundreds of enzymes, immunity, wound healing and reproductive health. Too little meant slower recovery and more infections for us; too much upset digestion. Balance is the key.

Potassium

Sodium's counterweight: it regulates fluids, muscle contraction, nerve signals and blood pressure. Processed food is high in sodium and low in potassium. Bananas, sweet potatoes and leafy greens made our energy and workouts steadier. Potassium supplements are a different matter and need medical advice, especially with kidney problems or blood pressure medication.

Calcium

Bones and teeth, but also nerve signalling, muscle contraction and clotting. It competes with iron and zinc and needs adequate vitamin D. For most of us food (dairy) was enough; supplementation was not always necessary.

AMINO ACIDS: BUILDING BLOCKS AND SIGNALS

1 BCAAs (leucine, isoleucine, valine)

They signal mTOR. Useful for us during long or fasted sessions; in normal routines whole protein (whey) felt more effective.

2 L-glutamine

Fuel for intestinal cells and support for the gut barrier. Digestion felt calmer under stress and recovery smoother.

3 **L-theanine**

Found in green tea; it promotes a relaxed but alert state. With caffeine it smooths the stimulation. A favourite before concentrated work.

4 **Taurine**

Electrolyte balance and nervous system stability, best for us with magnesium in recovery phases.

5 **Collagen peptides**

Easily absorbed; consistent use gave us healthier skin and fewer small joint aches.

6 **Phenylalanine**

A precursor of dopamine and noradrenaline. It sometimes sharpened focus but can overstimulate.

7 **Creatine**

One of the best-studied supplements in sports science. It raises phosphocreatine stores that regenerate ATP quickly and also supports brain energy. We take it every day, not necessarily around training: what matters is regularity. The effects are visible: muscle profile, strength, energy, everything.

8 **Carnitine and acetyl-L-carnitine**

Carnitine carries fatty acids into the mitochondria and helped our endurance before training; acetyl-L-carnitine felt more like a support for focus.

Protein powders or free-form amino acids?

Protein powders (whey, casein, plant blends) contain all essential amino acids and are essentially a quick protein meal: the foundation for covering daily needs. Free-form amino acids need no digestion and act as shortcuts to specific effects (BCAAs for mTOR, glutamine for the gut, theanine for focus). For us, powders are the base and amino acids are precision tools.

FATTY ACIDS: BRAIN FUEL AND INFLAMMATION CONTROL

Omega-3 (EPA and DHA)

Essential fats that the body cannot make in sufficient amounts. They shift inflammatory signalling towards balance, DHA is a structural part of brain cell membranes, they lower triglycerides and help recovery. Modern diets contain far more omega-6 than omega-3.

- **Quality:** cheap fish oils left an aftertaste; purified products with proper EPA and DHA content gave clear effects: lighter joints, steadier mood, better focus.
- **Consistency** mattered more than timing.
- **With an anti-inflammatory diet** the effect felt stronger.

Omega-6

Essential too; the problem is the ratio. Many diets reach 10:1 or 20:1 against omega-3, while humans evolved closer to between 1:1 and 3:1. Cutting seed oils and balancing with omega-3s calmed our joints and improved recovery.

Phospholipids

Phosphatidylserine supports communication between brain cells, memory and cortisol regulation. For us it reduced the mental crash after long stressful days; in the evening it also seemed to help sleep.

PROBIOTICS AND PREBIOTICS

About 70% of immune cells sit in the gut. The microbiome talks to the immune system, the brain and hormones.

- **Probiotics** help digestion and vitamin production, train immunity and, through the gut-brain axis, influence mood and sleep. Strains matter: *Lactobacillus rhamnosus* and *Bifidobacterium longum* felt different. They worked best taken with meals, together with prebiotic foods.
- **Prebiotics** are the food for good bacteria: garlic, onions, leeks, asparagus, bananas, chicory. Well-fed bacteria produce short-chain

fatty acids such as butyrate that protect the gut lining and lower inflammation. Too much concentrated inulin at once caused bloating; start small.

ADVANCED MOLECULES: NAD⁺

NAD⁺ (nicotinamide adenine dinucleotide) is a helper molecule present in every cell. It is essential for turning food into ATP and for enzymes involved in DNA repair. Its levels tend to fall with age, which is why NAD⁺ and its precursors (such as NMN and NR) have become central to longevity research.

We take NAD⁺ in capsules and in powder and for us the effect on energy is clear. It is not a peptide, even though it is often discussed alongside them.

WHAT THE RESEARCH SAYS

NAD⁺ and its precursors are sold as supplements, in capsules and powder, in pharmacies and shops in many countries. Human studies show that precursors can raise NAD⁺ levels; clear benefits on health and ageing in people are still being studied. Rules for individual forms (NMN, for example) differ between markets. Infusions or injections belong to medical settings.

WHAT DIDN'T WORK

- **Random supplements “just in case”.** Years of background noise with no noticeable effect.
- **Cheap forms.** Magnesium oxide, poor fish oils, non-methylated B vitamins.
- **Wrong timing.** Vitamin D and B vitamins in the evening, magnesium in the morning.
- **Megadoses.** Digestive upset with vitamin C and zinc.
- **Too much inulin at once.** Bloating.

WHAT WE MEASURED

Blood tests are the only honest judge here. Vitamin D is our clearest example: measured, corrected, measured again. Before changing a supplement routine, test first: it prevents both deficiencies and overdosing.

IS IT WORTH IT?

For us, absolutely yes, once we learned to do it properly. Precision changed everything: the right form, timing, brand and combination. That is when results became real, both in how we felt and in blood tests.

Supplements are not magic. They correct deficiencies and reinforce a strong foundation; they cannot cover up poor habits. Treated as targeted tools, with a doctor and blood tests, they become essential allies.

NEXT · Chapter 10: hydration and electrolytes, the most underestimated cornerstone.

HYDRATION & ELECTROLYTES

The underestimated cornerstone of performance and recovery.



ESSENCE

Hydration is one of the most underestimated pillars of health. We focus on advanced supplements, devices and training while overlooking the obvious: the body is mostly water. Every system depends on the balance between fluids and electrolytes.

1 Water is the medium

All biochemical reactions happen in water: energy production, muscle contraction, nutrient transport, waste removal.

2 Electrolytes are the signals

Sodium, potassium, magnesium, calcium, chloride, bicarbonate and phosphate keep the body's electrical system running: nerve impulses, muscle contraction, blood pressure, even mood and clarity.

Without water the system stalls; without electrolytes it misfires.

HOW WATER AND ELECTROLYTES WORK

Water

- **Energy:** ATP is produced in a watery environment. With too little water, enzymes and substrates meet less easily.
- **Muscles:** dehydrated cells contract less efficiently: weakness, early fatigue, slower recovery.
- **Transport:** plasma is about 90% water; glucose, amino acids, vitamins and hormones travel dissolved in it.
- **Filtering:** the kidneys clear waste only if enough water flows through them.

Electrolytes

- **Sodium and potassium** run the pump that creates the electrical impulses behind every heartbeat, thought and movement.
- **Calcium** is the switch for muscle contraction.
- **Magnesium** lets muscles and nerves return to rest.
- **Bicarbonate and phosphate** keep blood pH stable.

Electrolytes give no calories, but they make it possible for the body to use energy properly.

THE ROLE OF MINERALS

Sodium is often demonised but essential. Too little causes dizziness, fatigue and, in athletes who drink large amounts of plain water, dangerous hyponatraemia. Too much, mostly from processed food, raises blood pressure. For us the answer was balance: sodium from whole foods and mineral-rich salt, not from packaged snacks.

Potassium is sodium's partner. Most diets have too much of the first and too little of the second. Bananas, leafy greens and sweet potatoes restored the balance better than any sports drink.

Magnesium relaxes muscles and nerves; even a mild evening supplement consistently improved our recovery and sleep.

Calcium triggers contraction and works in partnership with magnesium: one contracts, the other relaxes.

WATER QUALITY MATTERS

Tap water

Quality varies greatly by region. In most developed countries it is disinfected with chlorine or chloramine, which has been essential for public health. Old pipes can release lead, copper or nickel. In some industrial areas pollutants such as hexavalent chromium or PFAS have been found. Tap water prevents outbreaks, but it is not necessarily optimal for long-term wellness.

Bottled water

Some brands are filtered tap water, others come from mineral springs. Mineral water is rich in calcium, magnesium and bicarbonate, useful after meals or training; oligomineral (low-mineral) water is lighter and suited to daily use. Plastic bottles left in heat or sun can release chemicals and microplastics; glass avoids the problem.

Filtered water

- **Carbon filters:** reduce chlorine, chloramine, pesticides and some organic contaminants; better taste and smell.
- **Reverse osmosis (RO):** the most powerful home technology. It removes bacteria, viruses, heavy metals (lead, arsenic, chromium VI), fluoride and nitrates, but also the minerals. Remineralisation is therefore important.
- **UV:** kills microorganisms but does not remove chemicals or metals.
- **Combined systems:** carbon, RO and remineralisation for the cleanest, most balanced result.

Filtration is not only about bacteria. We once saw water contaminated with hexavalent chromium: impossible to detect by taste or smell.

WHAT IS THE BEST CHOICE?

OPTION	STRENGTHS	WEAKNESSES
RO with remineralisation	Maximum purity, adjustable minerals, no plastic, economical over time	Installation, filter maintenance
Bottled oligomineral water (e.g. Evian)	Natural, stable mineral profile, safe, ready to drink	Plastic, microplastics, cost, transport
Unfiltered tap water	Cheap, regulated against acute risks	Possible residues from pipes and industry

For us the real upgrade was filtered and remineralised water at home, with bottled oligomineral water as the backup when travelling.

Choosing an RO system

- **Certification:** NSF/ANSI certification shows that contaminants are removed as claimed.
- **Remineralisation quality:** good cartridges restore calcium and magnesium in proportions close to natural mineral water.
- **Maintenance:** filters should be easy to change and last several months.

Systems we have compared include Waterdrop (G2 and G3 series, compact and tankless), iSpring RCC7AK (classic under-sink with tank and remineralisation stage) and, as a non-RO gravity option, Berkey with mineral filters.

OUR DEVICES

Waterdrop X16

At home we chose the Waterdrop X16, a high-capacity reverse osmosis system with multi-stage filtration and an integrated remineralisation cartridge. It removes microbiological contaminants, chlorine and chloramine, fluoride, nitrates, pesticides, PFAS and heavy metals, then adds back calcium, magnesium and trace elements for taste and

balance. The smart faucet shows water quality (TDS) and filter life in real time. It is more than a household strictly needs, but it gives us peace of mind and has almost entirely replaced bottled water at home.

ECHO Flask

A portable bottle that produces hydrogen-rich water. We like it and use it regularly. Hydrogen water is promoted for its antioxidant effect; studies so far are small and results are mixed, so we see it as a pleasant extra rather than a proven tool.

We are not affiliated with Waterdrop, ECHO, Evian or any other brand. Specifications change: check the current model before buying.

OUR ROUTINE

- **Home:** filtered, remineralised water all day.
- **Travel:** bottled oligomineral water, glass when possible.
- **Morning:** water with electrolytes. Compared with plain water, the most obvious change we noticed was that we urinate more often; the energy boost some brands promise was less evident.
- **After sauna, training and fasting:** electrolytes, always.
- **During the day:** hydrogen water from the ECHO Flask.

WHAT DIDN'T WORK

- **Only plain water after heavy sweating.** We still felt depleted.
- **Sports drinks.** Too much sugar, too little potassium.
- **Demineralised water without remineralisation.** Flat taste and no minerals.

WHAT WE MEASURED

The TDS reading on our faucet tells us the filter is working. For the body, the simplest checks remain the oldest: thirst, urine colour, headaches and cramps.

IS IT WORTH IT?

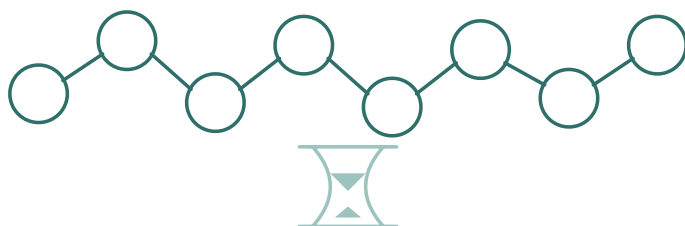
For us, absolutely. When hydration was poor, no supplement or training change made a difference. With clean, mineral-balanced water and the right electrolytes: steadier energy, fewer cramps, deeper sleep and faster recovery.

Hydration and electrolytes are not background details. They are the foundation that makes every other tool work better. They were one of the simplest upgrades we ever made.

NEXT · Chapter 11: peptides. A story that changed while we were writing.

PEPTIDES

What they are, how they were used and why everything is on hold.



ATTENTION: WE DO NOT RECOMMEND PEPTIDES

This chapter is a history and a status report as of September 2026. It contains no doses, cycles, combinations or instructions, on purpose.

We strongly advise against using the substances described here, especially those that are not approved, even if someone offers them to you or is willing to prescribe them.

If you decide otherwise, the decision and its consequences are entirely yours. The author and the publisher accept no responsibility.

ESSENCE

Peptides are short chains of amino acids, the same building blocks that form proteins. A protein can contain hundreds or thousands of amino acids; a peptide usually has between 2 and 50. Because of their size, peptides act less like nutrients and more like targeted messengers.

Many of the body's own signals are peptides. Insulin, for example, provides no calories: it tells cells to take up glucose from the blood. Hormones come in different forms: peptide hormones (insulin, oxytocin), steroid hormones derived from cholesterol (testosterone, cortisol) and hormones made from single amino acids (adrenaline, melatonin).

1 Supplements

Vitamins, minerals and fatty acids provide material: fuel, cofactors, structural parts.

2 Peptides

They carry instructions: repair this tissue, reduce inflammation, increase collagen, release growth hormone.

In short: supplements feed the body; peptides direct it. That precision is what made them so attractive. It is also why they need to be treated with great care.

HOW PEPTIDES ENTERED BIOHACKING

For years, a group of peptides moved from laboratory research into sports medicine, anti-ageing clinics and the biohacking community. In the United States many were prepared by compounding pharmacies on prescription; at the same time, a parallel market grew online, selling vials labelled "for research use only".

Most of these substances were never approved as medicines. Their popularity rested on animal studies, small human studies and a great deal of personal experience. A 2025 systematic review of BPC-157, one of the most famous, found dozens of preclinical studies but only a single clinical study in scope.

WHAT THEY WERE USED FOR

This is how these peptides were commonly described and used before the restrictions. It is a record of practice, not a recommendation.

PEPTIDE	WHAT IT WAS USED FOR
---------	----------------------

BPC-157	Nicknamed the "healing peptide": tendons, muscles, gut lining
TB-500 (thymosin beta-4 fragment)	Tissue regeneration and new blood vessels; often paired with BPC-157 for joints
GHK-Cu (copper peptide)	Skin repair and anti-ageing, topically; systemic use for recovery
CJC-1295 and ipamorelin	Stimulating natural growth hormone release: sleep, recovery, body composition
Tesamorelin	Growth hormone release; visceral fat. Approved as a prescription drug in the US for a specific medical condition
IGF-1 LR3	Growth and repair; considered among the most delicate
AOD-9604	A growth hormone fragment used for fat metabolism
MOTS-c	A mitochondrial peptide for metabolic flexibility and energy
SS-31 (elamipretide)	Mitochondrial protection; studied as a drug in rare diseases
Thymosin alpha-1	Immune support; approved as a medicine in some countries outside the US and EU
LL-37	An antimicrobial peptide, used in niche contexts
KPV, Semax, Epitalon	Inflammation, cognition and "longevity" respectively

FOUR VERY DIFFERENT CATEGORIES

"Peptides" is a word that covers products with completely different legal status. Many are on sale; not all of them are authorised. This is the distinction that matters most.

CATEGORY	EXAMPLES	STATUS
Cosmetics and supplements	GHK-Cu in creams and serums, collagen peptides	Legal, everyday products

Sold as "supplements" or "research" without a legal basis	BPC-157 capsules, TB-500, MOTS-c	Widely available, but in the US BPC-157 is not a lawful dietary ingredient and is classed as an unapproved drug. Being on a shelf is not the same as being authorised
Approved prescription drugs	Semaglutide, tirzepatide, tesamorelin	Medicines, only with a prescription
Investigational drugs	Retatrutide (Eli Lilly)	In clinical trials; Lilly plans to file for approval in early 2027. Available only in trials or through the company's early access programme; anything sold online under this name is not legitimate

NAD+ and creatine are often discussed in the same breath, but they are not peptides; both are sold legally as supplements (Chapter 9).

WHAT WE DISCOVERED

Our journey into peptides followed the one into supplements and was always led by the same doctor (Chapter 9). We never bought these substances on our own. They were prescribed and supervised by our doctor, in the country where we lived at the time, where the law then allowed him to prescribe them. The peptides we used were BPC-157, TB-500, MOTS-c and GHK-Cu.

- 1 BPC-157**
Recovery from strains was faster and some chronic aches that used to linger for weeks faded sooner.
- 2 TB-500**
It complemented BPC-157, especially for joint discomfort.
- 3 MOTS-c**
More stable energy during endurance training and long working days.

4 GHK-Cu

Topically, better skin elasticity and faster healing of small wounds. Today it remains part of our scalp routine as a cosmetic serum (Chapter 6).

5 Quality

This was the biggest lesson. Two vials with the same label could be worlds apart: some worked, some did nothing and one batch caused irritation.

When these products fell outside the guidelines, we stopped using them. Several of them are still offered online in oral or injectable form; the table above explains why being on sale does not mean being authorised.

! ATTENTION

Our experience is not evidence and it is not advice. It happened under medical supervision, within the rules of that place and time. Those conditions no longer apply.

WHAT CHANGED

WHEN	WHAT HAPPENED IN THE UNITED STATES
2023	The FDA placed BPC-157, TB-500, CJC-1295, ipamorelin, AOD-9604, thymosin alpha-1 and others in "Category 2", citing safety concerns (immune reactions, impurities, lack of data). Compounding pharmacies could no longer prepare them. The online "research" market continued.
February 2026	The Secretary of Health announced that many of these peptides would be reconsidered.
April 2026	The FDA removed BPC-157 and eleven other peptides from Category 2, without moving them to the list of substances allowed for compounding. A grey zone: neither clearly prohibited nor authorised.

July 2026 The FDA advisory committee on compounding voted, by narrow margins, to recommend BPC-157, KPV, TB-500, MOTS-c, Semax and Epitalon for the compounding list, against the position of FDA scientists. It rejected DSIP. The vote is not binding.

September 2026 No peptide has been added to the list and none has become an approved drug. The FDA must decide whether to follow the recommendation and, if so, go through a formal rulemaking process. Other peptides, including injectable GHK-Cu, are due for review by early 2027.

THREE EVENTS, NOT ONE

Removal from Category 2, a positive advisory vote and actual permission to compound are three different things. None of them is a drug approval.

Outside the United States the situation varies. In the European Union these peptides are not authorised medicines. In sport, BPC-157, TB-500, MOTS-c and growth hormone releasing peptides are on the World Anti-Doping Agency prohibited list: any competing athlete, including amateurs subject to testing, must stay away from them.

WHAT TO KNOW FIRST

- 1 "Research use only" means not for humans**
Those products are not made or checked to human standards. Purity, dose and sterility are unknown.
- 2 Evidence is thin**
Most data come from animals or very small human studies. Long-term safety in people is largely unknown.
- 3 Specific risks**
Immune reactions, contamination and infection at injection sites. Peptides that promote growth or new blood vessels raise a theoretical concern for anyone with a history of cancer.
- 4 Law varies**
What is tolerated in one country can be illegal to import or sell in another.

5 Cosmetics are different

GHK-Cu in creams and serums is a common, legal cosmetic ingredient. That does not extend to injectable forms.

WHY NO PROTOCOLS

In an earlier version of our notes we described how we used these substances. We have chosen not to repeat any of it. The rules are moving, the evidence is limited and a book cannot replace a doctor who knows your history and can source legally. What we can offer is the story and the current picture.

IS IT WORTH IT?

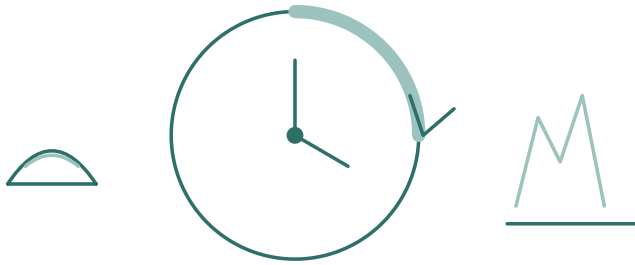
No. As a subject, peptides are one of the most interesting frontiers in biohacking; as a decision today, our answer is clear: do not use them.

We strongly advise against taking unapproved peptides, whoever offers or prescribes them. Never from "research" suppliers. Wait for regulators and for real clinical data. GHK-Cu in cosmetic creams and serums is the only exception that is already part of everyday skin care.

NEXT · Chapter 12: cyclical nutrition. Fasting, carb cycling and keto as flexible tools.

CYCLICAL NUTRITION

Fasting, carb cycling, keto and other flexible methods.



ESSENCE

Most diets fail not because of the foods but because they are rigid. The human body evolved through cycles of abundance and scarcity, feast and fast. Cyclical protocols (fasting, carb cycling, ketogenic phases) use this principle: instead of locking the body into one state, they train it to switch gears, from glucose to fat, from storage to repair.

FASTING: USING TIME AS NUTRITION

Fasting is not starvation. It is the deliberate use of time without food to trigger processes that rarely occur when we eat constantly.

- 1 Insulin falls, fat is released**
When insulin stays low, fat stores can be broken down and used for fuel.
- 2 Autophagy**
With fewer nutrient signals, the cell activates a clean-up programme that recycles damaged proteins and components.

3 **Growth hormone rises**

It mobilises fat while protecting lean tissue, which is why short fasts do not waste muscle.

4 **More clarity**

Digestion is demanding. During a pause, as the brain starts using some ketones, many people feel clearer.

CARB CYCLING: FUEL FOR DEMAND

Carbohydrates are fuel, neither good nor bad. The problem is eating them in excess, constantly or without relation to real needs. Carb cycling aligns intake with demand.

- **High-carb days** refill muscle glycogen after demanding training and support repair.
- **Low-carb days** give insulin a break, improve insulin sensitivity and favour fat burning.
- **Alternation** avoids both constant glucose dependence and the downsides of long strict restriction (lower thyroid output and leptin, weaker performance).

KETO PHASES: TRAINING FAT METABOLISM

A ketogenic approach lowers carbohydrates drastically (typically below 20 to 50 g a day). The liver starts producing ketones (beta-hydroxybutyrate, acetoacetate, acetone), which become an alternative fuel, especially for the brain.

1 **Brain fuel**

Ketones provide a steady energy supply; many people report sharper focus. Ketogenic diets are an established therapy for some forms of epilepsy.

2 **Inflammation**

Beta-hydroxybutyrate also acts as a signal that dampens inflammatory pathways.

3 **Hormones**

Insulin stays low, blood sugar is flatter and hunger often decreases.

4 **Trade-offs**

Excellent for steady and endurance activity; limiting for sprints and heavy lifting, which is why athletes often add targeted carbs.

In practice: short keto phases (two to six weeks), cyclical keto (low carb most days with periodic refeeds) or targeted keto (carbs only around training).

TECHNICAL ELEMENTS: HORMONES AND FLEXIBILITY

SIGNAL	FASTING OR LOW CARB	FEEDING OR REFEED
Insulin	Falls; fat is released; sensitivity improves	Rises; glucose enters cells; glycogen is refilled
Leptin and ghrelin	Ghrelin rises (appetite, alertness); long restriction lowers leptin	Refeeds restore leptin
Cortisol	Short fasts raise it (alertness); chronic restriction keeps it too high	Recovery brings it back down
GH and IGF-1	Growth hormone pulses increase	IGF-1 rises: repair and growth
AMPK and mTOR	AMPK on: efficiency and clean-up	mTOR on: building and repair

The goal is metabolic flexibility: burning glucose when it is available and switching to fat and ketones when it is not. Constant snacking erodes this flexibility; cycles rebuild it.

WHAT WE DISCOVERED

1 **Ketosis is measurable**

We have used meters to check ketone levels. The method works: you can see when the body has switched fuel instead of guessing.

2 Keto phases

Used as phases, never as a permanent diet: once adapted, energy became steady, hunger lower and the body seemed better at handling carbs afterwards.

3 Electrolytes first

Fasting and keto only felt good when sodium, magnesium and potassium were in place (Chapter 10). Without them: headaches and cramps.

WHAT DIDN'T WORK

- **Daily 16-hour fasting.** We tried to make it a habit, but we are almost always travelling and it never became stable. It also clashes with our morning supplements, which need a breakfast with fat.
- **Long fasts.** We have not done fasts of 36 or 72 hours.
- **Structured carb cycling.** We understand the logic and describe it for completeness, but we have never followed a formal plan linking carbs to training days.
- **Combining fasting and sauna** is something we have not tested in a structured way.

This is a chapter where our honest experience is narrower than the theory. We would rather say so than pretend otherwise.

PRACTICAL RULES

1 Flexibility wins

Adapt the protocol to life, not life to the protocol. Travel is a real constraint.

2 Measure

Ketone meters, glucose monitors and simple notes on sleep, mood and focus tell you whether a phase is working (Chapter 7).

3 Simplicity

Fuel when needed, restrict when useful.

! ATTENTION

Fasting and ketogenic diets are not suitable for everyone. Pregnancy, diabetes, a history of eating disorders, certain medications and many medical conditions make them risky. Speak to your doctor first.

IS IT WORTH IT?

Yes, as a set of tools rather than a diet. Keto phases and measured ketosis worked well for us; daily fasting did not fit a life on the move. The principle remains valuable: metabolic flexibility makes energy less dependent on eating every few hours.

Choose the cycle that fits your life, measure it and keep only what you can sustain.

PART III

MIND

Your most powerful tool: your brain



A NOTE BEFORE WE BEGIN

What you will read here is not something we started yesterday. Meditation, visualisation and mental training are part of a long path that has touched many fields. This part is the snapshot of what proved most useful and sustainable, including the practices we are still exploring.

You can eat perfectly, train consistently and invest in the most advanced technology, but if your mind is restless, negative or unfocused, everything collapses.

The brain is not just another part of the system: it is the operating system that decides how the body performs, how energy is used and even how reality is experienced. Unlike supplements or devices, it can be trained and upgraded without cost or equipment. Every thought you repeat, every emotion you reinforce, every habit you install acts as a signal to your biology: stress hormones rise or fall, recovery speeds up or slows down, performance sharpens or blurs.

Modern neuroscience confirms what ancient traditions already knew:

1 Thoughts shape biology

Beliefs and focus change how the nervous system fires and how hormones circulate.

2 Attention is fuel

Where you place it decides whether you are in clarity or chaos.

3 Mental states are trainable

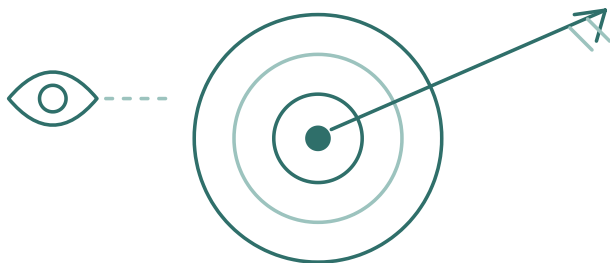
The brain adapts to repetition. Mantras, meditation, visualisation and self-regulation are training protocols for the mind.

In this part we explore the tools that turned our mental state into an advantage: the law of attraction, to channel thoughts towards opportunities; mantras and meditation, to quiet the noise and recover mental energy; cognitive rewiring, to build new habits and reset emotions; self-regulation and mental flexibility, to switch deliberately from stress to calm and from distraction to focus.

This is not mysticism. It is practice. Once you learn to train the mind, every other tool becomes more effective.

THE LAW OF ATTRACTION

Training the mind to shape reality.



ESSENCE

The law of attraction is one of the most misunderstood concepts in personal development. It is often reduced to a cliché: think positive and everything will come. That version is shallow and misleading.

What we learned through years of practice is that the law of attraction is not wishful thinking. It is training the mind to direct focus and emotion in ways that influence perception, action and, ultimately, outcomes. What you consistently think and feel becomes the lens through which you experience reality. That lens shapes the opportunities you notice, the actions you take and the results you obtain.

1 **Focus creates filters**

A network in the brainstem, the reticular activating system (RAS), decides what reaches your awareness. When you think about a goal constantly, the RAS highlights everything connected to it. The world has not changed; your filter has.

2 Emotion gives energy to thought

Thoughts alone are weak signals. Charged with gratitude, excitement or confidence, they become instructions that prime the nervous system to act.

3 Belief changes behaviour

When you believe an outcome is possible, you approach opportunities differently, speak with more certainty, persist longer and recover faster from setbacks.

This chapter is the biohacking view of the subject. We explore it in depth in *Between Wanting and Having*, another title in the *Knowledge, Simply* collection.

Why it matters in biohacking

In the body, hormones and pathways decide whether energy is stored or burned. In the mind, thoughts and emotions decide whether you sabotage or support your goals. A stressed, negative focus goes together with cortisol and fatigue; a purposeful focus with motivation and growth-oriented behaviour. Over weeks and months, the difference compounds.

The danger of misuse

The law of attraction is not sitting still and waiting, pretending bad things do not exist or repeating empty affirmations without action. Those approaches lead to frustration. Real practice uses attraction to guide attention, align emotion and drive consistent action.

TECHNICAL ELEMENTS: HOW IT WORKS IN PRACTICE

1 The RAS, your brain's filter

Every second millions of inputs reach the brain, but only a fraction reaches awareness. Decide to buy a red car and suddenly you see red cars everywhere: they were always there. Goals work the same way.

2 **Visualisation, rehearsal for the nervous system**

Vivid, emotional imagery activates many of the same circuits as real action. Athletes use it deliberately. It is not daydreaming; it is rehearsal.

3 **Emotion, the amplifier**

Genuine feeling marks a thought as important and supports motivation and wellbeing. The point is not to think positive but to feel into the state you want.

4 **Belief and expectation**

Expect failure and you hesitate; expect success and you act with confidence and persistence. Behaviour follows belief.

5 **Action, closing the loop**

None of this matters without action. When thoughts, emotions and actions align, distant goals become natural next steps.

Focus, visualisation, emotion, belief, action: a feedback loop, not magic.

WHAT WE DISCOVERED

1 **Morning focus**

A few minutes each morning to decide the focus of the day: two or three intentions, written or repeated mentally. It trains the filter. If the focus is "connection", meetings and conversations start to feel different.

2 **Visualisation before important moments**

This is the practice we use most: before a decisive meeting, a negotiation or a demanding day, we rehearse the scene in detail and with emotion. It makes us act more decisively when the moment arrives.

3 **Journaling**

We keep an evening journal. Writing goals as if they were already real ("I am building" instead of "I hope") shifts the mind from

possibility to expectation.

4 **Emotional redirection**

Negative thoughts are inevitable. Instead of fighting them, we pause and ask: what state do I want instead? A breath, music or a moment of gratitude resets the tone.

5 **Quiet spaces**

The hyperbaric chamber offers an hour without noise that is ideal for thinking and rehearsing goals. Some quiet sauna sessions serve the same purpose.

What changed: clearer mornings, goals that feel like next steps rather than distant dreams, setbacks that no longer feel like walls and, above all, coherence between thoughts, emotions and actions.

WHAT DIDN'T WORK

- **Affirmations without action.** Pleasant words, no results.
- **Pretending problems do not exist.** They come back stronger.
- **Short phrases repeated under pressure.** Key phrases are the part we have explored least in real stressful moments. We intend to work on it (Chapter 14).

WHAT WE MEASURED

Nothing with a device. The journal is our record: rereading intentions weeks later shows which ones became actions and which stayed words.

IS IT WORTH IT?

For us, absolutely. Not because the law of attraction magically delivers results, but because it trains the mind to focus, feel and act in line with what we want: clarity, resilience, momentum and alignment.

Just as fasting and keto train the body to switch fuel, this practice trains the mind to switch state. Using quiet time in the chamber or the sauna for the mind as well as the body also keeps biohacking from feeling like a full-time job.

NEXT · Chapter 14: mantras and meditation. Programming the mind through repetition and stillness.

MANTRAS & MEDITATION

Programming the mind through repetition and stillness.



ESSENCE

For many people, "mantra" sounds mystical and "meditation" sounds like sitting still doing nothing. Both perceptions are incomplete. Mantras and meditation are not exotic rituals: they are practical tools to train the brain.

MANTRAS: REPETITION AS PROGRAMMING

The word comes from Sanskrit: *man* (mind) and *tra* (tool). A mantra is a tool for the mind: a short phrase, sound or sentence repeated deliberately to shape focus and inner state.

Every thought fires a network of neurons. When the same network fires repeatedly, its connections become stronger and faster: this is neuroplasticity. Think of walking through tall grass. The first time it is hard; walk the same route every day and a trail forms. Once the trail is clear, the brain takes it by default.

- **Traditional mantras:** "Om", "So hum", "Sat Nam".
- **Modern mantras:** "I am focused", "I am resilient", "Calm is my power".

- Even short affirmations work as mantras when repeated regularly and with genuine feeling.

From negative loops to positive scripts

The same mechanism makes negative self-talk destructive. Repeat "I always fail" and the brain learns to expect failure, the body reacts with stress and behaviour follows. Mantras reverse the process: at first they feel artificial because the old circuits are stronger, but with repetition and emotion the new ones grow and the unused ones fade (synaptic pruning). Mantras are not about lying to yourself; they teach the brain a new language until it becomes fluent.

MEDITATION: TRAINING AWARENESS

Meditation is not about stopping thoughts, which is impossible. It is about noticing thoughts, feelings and distractions and gently bringing attention back to an anchor: the breath, a sound, a mantra, the present moment. Each time you bring the mind back, you train the muscles of focus and calm.

Many of us already meditate without knowing it: absorbed in a walk in nature, losing track of time while writing or playing music, fully present in front of a sunset. Meditation turns that quality of presence into a repeatable practice.

Why meditation changes the brain

- **Prefrontal cortex:** stronger connections for focus and impulse control.
- **Amygdala:** lower reactivity to stress.
- **Hippocampus:** changes linked to memory and emotional regulation.
- **Default mode network:** less mind-wandering and rumination.

Why it changes biology

Stress loops raise cortisol, heart rate and muscle tension. Focusing on the breath or a mantra activates the parasympathetic system and restores balance. With practice, the body learns to return to calm more easily.

Technology and feedback

Neurofeedback devices such as Muse and Sens.ai (Chapter 5) show when you are focused, distracted or calm and give feedback in real time. You do not need them, but they make meditation measurable.

WHAT WE DISCOVERED

1 **Meditation with Muse**

This is the core of our practice. The headband turned meditation from "am I doing it right?" into a training session with a coach. It is what kept us consistent.

2 **Morning resets**

Short breath-focused sessions set the tone for the day. On rushed mornings, three minutes of mindful breathing still make a difference.

3 **Evening decompression**

Guided sessions help release the noise of the day and prepare for sleep.

4 **Breathing that became automatic**

After years of practice, slowing the breath in a tense moment is no longer a technique we choose: it happens by itself.

5 **Flexible forms**

Mindfulness on some days, visualisation on others (Chapter 13), depending on energy and time.

WHAT DIDN'T WORK (YET)

- **Mantras under real pressure.** We know the theory and use short phrases at quiet times, but we have not yet built the habit of using a mantra in the middle of a stressful moment. It is the next practice we want to explore properly.
- **Meditation in the sauna.** It sounds ideal, but our sauna time is for screen, music and relaxation. We have never turned it into formal meditation.

- **Rigid rituals.** Candles and fixed schedules did not last. Adapting practice to the day did.

WHAT WE MEASURED

Muse and Sens.ai record every session: time spent calm, time spent distracted, progress over weeks. Seeing the numbers improve is motivating in itself.

IS IT WORTH IT?

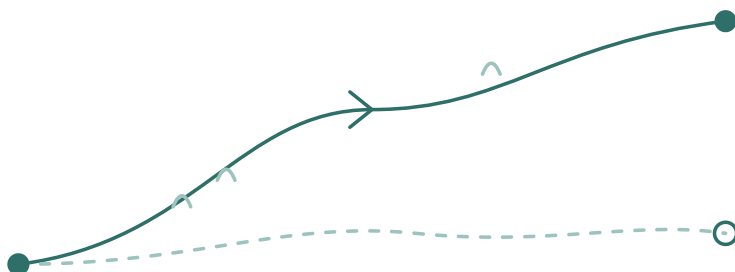
For us, absolutely. Meditation trained the brain to focus, reset and choose responses instead of reacting blindly: clearer mornings, less reactive days, deeper work and easier sleep.

It is a portable tool that needs no special setting. Mantras are the part we still have to master; we say so openly.

NEXT · Chapter 15: cognitive rewiring. Changing habits, priming the mind, resetting emotions.

COGNITIVE REWIRING

Tools to change habits, prime the mind and reset emotions.



ESSENCE

The brain is built for efficiency. Every repeated thought, action or emotion creates a shortcut that saves energy. Over time these shortcuts become habits, beliefs and automatic reactions. Change feels hard not because the brain resists willpower but because it follows well-worn paths.

Cognitive rewiring is the deliberate process of creating new paths and weakening old ones.

- 1 Habits**
Replacing destructive loops (procrastination, overeating, stress scrolling) with constructive ones.
- 2 Mental priming**
Setting cues (a phrase, a routine, an environment) that prepare the mind to perform.
- 3 Emotional reset**
Interrupting fear, anger or anxiety and installing calmer responses.

We can upgrade the body with nutrition, supplements and devices, but if the mental software is outdated, progress stalls. Rewiring is the update that lets every other tool run smoothly: the difference between knowing what to do and actually doing it.

TECHNICAL ELEMENTS

1 **Neuroplasticity**

Neurons that fire together wire together (Hebb's rule). Repeated thoughts and actions carve paths; unused ones weaken. You are never stuck with your current patterns.

2 **Habit loops**

Cue, routine, reward (as Charles Duhigg describes in *The Power of Habit*). To change a habit, keep the cue and the reward and change the routine: stress still arrives, but instead of junk food you take a short walk or breathe.

3 **Priming**

The brain is highly sensitive to cues. A song, a phrase or a workspace can prime focus or calm, as athletes do with their pre-performance rituals.

4 **Emotional reset**

Stressful thought, amygdala alarm, cortisol, racing heart, more stressful thoughts: the loop feeds itself. Breath, a phrase or a physical change tells the brain "this is safe" and, over time, installs a new default.

5 **Feedback**

Small wins release dopamine and reinforce the new path. This is why tools that measure progress (Chapter 5) accelerate change.

EMOTIONAL RESET AND MENTAL PRIMING

Reset: breaking the loop

- **Slow breathing** (for example box breathing: inhale four seconds, hold four, exhale four, hold four) slows the heart and signals safety.
- **Grounding phrases** such as "This will pass".

- **A physical change:** fresh air, a glass of water, a stretch.

Priming: preparing the brain

- **Music as a trigger:** the same playlist before deep work until the first notes become a switch.
- **Environmental cues:** a clear desk, a specific place, the heat of the sauna.
- **Physical anchors:** a breathing cycle before a talk or a meeting.

Resets weaken old reflexes; priming strengthens new ones. Together they speed up rewiring.

WHAT WE DISCOVERED

1 Breathing resets

This is where rewiring worked best for us: after years, slowing the breath under stress happens automatically.

2 Journaling as feedback

Short evening notes ("handled that better", "finished without distraction") act as a reward and make progress visible.

3 Music and places as primes

A playlist or a specific place signals that it is time to focus.

4 Data as motivation

Muse and Sens.ai showing more calm minutes than the week before is a strong reinforcement.

WHAT DIDN'T WORK

Honestly, we cannot point to one habit we have changed with a formal step-by-step method. Our changes happened more gradually, through the practices described in this part. Some old loops are still there: the phone in the bedroom and coffee at any hour are two examples we share in Chapter 7. The method in this chapter is the one we intend to apply to them.

WHAT WE MEASURED

The journal and the neurofeedback apps. Neither is sophisticated; both are enough to see whether a new pattern is taking hold.

IS IT WORTH IT?

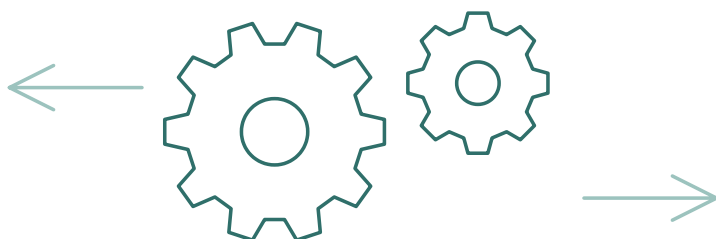
Yes. Cognitive rewiring is the missing link between knowing and doing. The brain rewires itself whether you guide it or not: with deliberate practice you choose the new scripts.

Start with one loop at a time, keep it small and tied to everyday contexts. Once a new pattern is installed, it runs without willpower.

NEXT · Chapter 16: self-regulation and mental flexibility, the skills that tie everything together.

SELF-REGULATION & MENTAL FLEXIBILITY

Mastering inner states and switching gears at will.



ESSENCE

Self-regulation is the ability to manage emotions, impulses and attention in real time, so that you act in line with your goals instead of being hijacked by stress, cravings or distractions. It is not about suppressing emotions but about guiding them. Mental flexibility is its natural extension: the ability to move fluidly between states (focus and relaxation, discipline and creativity, calm and intensity) when each is needed.

Modern life constantly triggers the nervous system: deadlines, alerts, traffic, endless choices. Without regulation we live in survival mode, burning energy and making poor decisions. With it, the same challenges become manageable.

- A surge of anger that you pause before it explodes.
- A wave of anxiety calmed with breathing instead of left to spiral.
- A craving noticed and redirected instead of followed on autopilot.

- A distraction acknowledged and left behind.

Every chapter in this part is a piece of the puzzle; mental flexibility is how the pieces work together. The real measure of progress is not how long you meditate but how quickly you move from distraction to focus, from stress to calm, from doubt to confidence.

TECHNICAL ELEMENTS

1 Prefrontal cortex and amygdala

The amygdala is a smoke alarm that reacts instantly to anything that looks like a threat. The prefrontal cortex plans, reasons and inhibits impulses. Self-regulation is letting the second lead.

2 Vagus nerve

It connects brain, heart, lungs and gut. Slow breathing, humming or cold water on the face activate it and switch on the rest-and-repair mode. It is the body's brake pedal.

3 Heart rate variability (HRV)

The small variation between heartbeats. Higher HRV means a flexible, resilient system; lower HRV means a system stuck in stress. Breathing, meditation and good sleep tend to raise it over time.

4 Neurochemistry

Cortisol and adrenaline rise in stress; dopamine drives motivation (and is easily hijacked by social media and junk food); serotonin stabilises mood; GABA quiets neural activity. Regulation practices shift this balance.

5 Default mode network

The brain's autopilot, active when we ruminate or daydream. Meditation and mantras quiet it and bring attention back to the present.

6 Brainwaves

Beta for alert problem solving (high beta for stress), alpha for calm focus, theta for deep relaxation, delta for sleep. Neurofeedback trains the shift between them.

7 Neuroplasticity

Each successful switch strengthens the circuit. What starts as ten minutes of breathing becomes a single exhale.

WHAT WE DISCOVERED

1 Micro-pauses

When stress rises (emails piling up, an argument, traffic), a short breathing pause stops it from taking over the day. For us this is now automatic.

2 Anchors for focus

The same playlist before deep work; over time the brain associates it with concentration.

3 Short phrases, still in progress

“Breathe first, decide after” is the kind of phrase that works as a brake. As we say in Chapter 14, using phrases like this in the middle of real pressure is the part we are still building; breathing is what we rely on today.

4 Feedback

Our Whoop recovery score, which is built largely on HRV, shows how stress, sleep and alcohol affect the system (Chapter 7). Muse and Sens.ai show calm and focus in real time.

5 Switching

The biggest change was agency: instead of being carried by moods, we feel able to choose the state we need.

At first, regulation takes effort: you need awareness to catch yourself before reacting. Over time it becomes the path of least resistance.

WHAT DIDN'T WORK

- **Trying to control everything.** Regulation is flexible, not rigid.
- **Relying on willpower alone.** Without breathing, sleep and feedback, willpower runs out.

- **Stimulants late in the day.** Coffee and pre-workout in the evening make the switch to calm much harder. We know it and are working on it.

IS IT WORTH IT?

Without question. Self-regulation and mental flexibility are the meta-skills that amplify every other practice: faster focus, more resilience, less energy wasted in the wrong mode.

Like changing gears in a car, they let you choose how to drive your mind through the day.

PART III IN SHORT

The brain is not passive: it is the control centre of every other tool. With the law of attraction we learned how focus and emotion shape perception and action; with mantras and meditation we trained the brain through repetition and stillness; with cognitive rewiring we started to rewrite old patterns; with self-regulation and flexibility we connected everything into a system that lets us switch states on purpose.

No single method is superior. Mantras anchor attention, meditation builds awareness, rewiring changes habits, regulation keeps you steady and flexibility ties it all together. The mind is trainable: just as muscles adapt to weights and metabolism to nutrition, the brain adapts to repetition, attention and intention.

NEXT · Part IV: from the inner world to the outer one. Sleep, light, movement and the spaces you live in.

PART IV

ENVIRONMENT & LIFESTYLE

Shaping the conditions for performance



You can optimise nutrition, master supplements and train your mind, but if your environment works against you, progress will always feel like swimming upstream.

Sleep, light, movement and recovery are not background details. They decide whether every other effort multiplies or collapses. A poor night, hours under the wrong light or a space full of distractions can undo days of progress.

1 Sleep

The most underestimated tool: it restores, repairs and decides how much energy you have tomorrow.

2 Light

Not only what lets you see, but the master signal for your circadian rhythm and hormones.

3 Movement and recovery

Exercise as medicine and recovery as the amplifier that makes training sustainable.

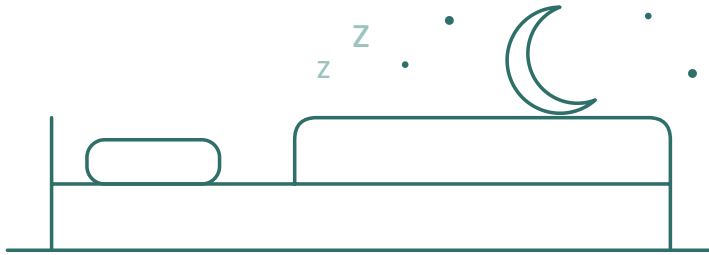
4 Environment design

The silent architect of habits: cues, spaces and digital hygiene.

This part is about aligning your surroundings with your goals. It is also the part where our honest record includes the most room for improvement. We say so openly.

SLEEP

The foundation of recovery and performance.



ESSENCE

Sleep is the most underestimated biohack. People chase supplements, devices and advanced techniques, yet often sacrifice the one thing that amplifies all of them. Sleep is not time off: it is active recovery, when body and brain run their most important maintenance.

1 Physical repair

In deep sleep growth hormone peaks, muscles rebuild and energy stores refill.

2 Brain cleaning

The glymphatic system, a network of channels in the brain, clears metabolic waste (including beta-amyloid, linked to neurodegeneration) mainly during deep sleep.

3 Learning and memory

REM sleep consolidates what you learned and experienced during the day.

4 Hormonal balance

Melatonin signals sleep, cortisol resets for the morning, insulin sensitivity recovers, testosterone and growth hormone restore vitality.

Even one bad night lowers insulin sensitivity, increases cravings, weakens attention and raises cortisol. Chronic sleep debt compounds these effects and makes every other tool less effective.

Optimisation does not mean forcing ten hours in bed. It means creating the conditions for quality: a consistent rhythm, a dark, cool, quiet room, morning light and evening darkness, plus a routine that calms the nervous system instead of stimulating it.

TECHNICAL ELEMENTS

The circadian rhythm

A 24-hour cycle run by the suprachiasmatic nucleus (SCN) in the brain. Light is its master signal: morning light says "be alert", evening darkness releases melatonin. Irregular schedules, screens at night and late caffeine confuse it.

Sleep stages

STAGE	WHAT HAPPENS
Stage 1	Transition from wakefulness; brainwaves slow, muscles relax
Stage 2	Temperature and heart rate drop; about half of the night
Stage 3 (deep sleep)	Growth hormone peaks, tissues repair, immunity strengthens, the brain clears waste
REM	Dreaming; memory consolidation, emotional processing, creativity

The body cycles through these stages about every 90 minutes. Quality means enough deep sleep and REM, not just hours in bed.

Hormones

- **Melatonin** rises in the evening and is suppressed by bright and blue light.
- **Growth hormone** peaks in deep sleep.
- **Testosterone** is replenished during the night.
- **Cortisol** falls at night and rises towards morning; poor sleep keeps it high.
- **Insulin sensitivity** resets overnight; sleep loss makes glucose harder to handle.

WHAT WE DISCOVERED

- 1 **Evening sauna**
Our most reliable sleep tool (Chapter 2). On evenings with a session we fall asleep faster and sleep deeper.
- 2 **A cool room**
For us a warm bedroom is simply impossible. A cool room (around 18 to 20°C) makes a clear difference to deep sleep.
- 3 **Darkness and quiet**
Blackout curtains or an eye mask; earplugs or steady sound in noisy places, which matters a lot when you travel.
- 4 **Naps**
We nap very often. A short nap in the afternoon resets energy without spoiling the night.
- 5 **Whoop**
Exceptional. It shows sleep, recovery and strain; wanting a better score makes you adjust habits almost automatically (Chapter 7).
- 6 **Alcohol**
Whether in the evening or during the day, we feel it the next day.
- 7 **Magnesium**
In the evening, perfect for our sleep (Chapter 9). Glycine sometimes helped depth; melatonin we keep for travel and time-zone changes, not for daily use.

8 Wind-down

Stretching, a physical book, the evening journal, slow breathing or a short meditation with Muse instead of scrolling.

WHAT DIDN'T WORK

- **The hyperbaric chamber before bed.** It gives energy exactly when we want to switch off. We now use it during the day (Chapter 4).
- **The cold plunge late in the evening.** Too stimulating (Chapter 1).
- **Heavy dinners.** After a big pizza, sometimes no sleep at all (Chapter 8).
- **Caffeine at any hour.** We drink a lot of coffee, also in the evening. Sometimes we take a pre-workout at ten at night before the gym. We know it works against sleep and we should reduce it.
- **The bedroom as an office.** We often work lying on the bed and the phone stays in the room. Every guide, including this one, says otherwise. It is on our list.

WHAT WE MEASURED

Whoop tracks every night: sauna evenings help, late stimulants and alcohol hurt. One thing we have not tried is mouth taping for nasal breathing.

IS IT WORTH IT?

For us, absolutely: more than any other tool. Sleep is the multiplier: nutrition, supplements, meditation and devices all work better when it is deep and restorative.

Small changes (a cool dark room, an evening sauna, less stimulation at night) create outsized results. We still have work to do on caffeine and the bedroom; we know exactly where to start.

NEXT · Chapter 18: light, the signal that sets the body clock.

LIGHT & CIRCADIAN RHYTHM

Harnessing light as a biological signal.



ESSENCE

Light is not just what lets us see. It is the master signal that programs our biology: hormones, mood, sleep and metabolism all follow the rhythm it sets. Light tells the body what time it is; the body adjusts everything else.

For most of history humans lived under the cycle of sun and dark. Today we get too little natural light during the day and too much artificial light at night. The result is confused signals, suppressed melatonin, shallow sleep and hormonal imbalance. Optimisation means bright natural light in the morning, less artificial blue light at night and, where useful, targeted light such as red light therapy.

TECHNICAL ELEMENTS

1 **The master clock**

Light-sensitive cells in the retina send signals to the SCN, which coordinates clocks in almost every organ: liver, muscles, gut, hormones.

2 **Morning light**

Bright light in the first 30 to 60 minutes after waking sets the clock, supports the healthy morning rise in cortisol and increases serotonin, which later becomes the raw material for melatonin.

3 **Blue light**

Wavelengths around 460 to 480 nm are the strongest circadian signal. During the day they keep us alert; at night, from screens and LEDs, they suppress melatonin and delay sleep. The problem is timing.

4 **Evening darkness**

In the dark, the pineal gland releases melatonin. Even short exposure to bright light in the evening can delay it.

5 **A see-saw**

Cortisol peaks in the morning and declines; melatonin rises in the evening. Wrong light flattens the rhythm: groggy mornings, wired nights.

6 **Natural and artificial light**

Sunlight delivers a full spectrum, including red and infrared. Most artificial light is narrow and blue-heavy.

WHAT WE DISCOVERED

1 **Morning sunlight**

We do get outside in the morning, even if we never set it as a formal goal. The mornings when it happens feel sharper.

2 **Daylight during work**

Short breaks outside and working near a window keep attention steadier than artificial light.

3 Warm light in the evening

Dimming the lights after sunset and using screen filters makes the transition to sleep smoother.

4 Light as a tool

Red light panels and the LED mask are part of our routine (Chapter 3); an evening session doubles as skin care and wind-down.

WHAT DIDN'T WORK (AND WHAT WE HAVE NOT TRIED)

- **Amber glasses in the evening.** We have never tried them. Given how much we use screens at night, we probably should.
- **Light to manage jet lag.** Despite constant travel between time zones, we have never used timed light exposure to adapt. It is one of the simplest ideas in this book and one we have not applied.
- **A bright light lamp for dark mornings** is another option we have not tested; many people find it useful in winter.

WHAT WE MEASURED

Nothing formal. The sleep tracker is the indirect judge: evenings with less light and fewer screens tend to produce better nights.

IS IT WORTH IT?

Yes. Light is the cheapest circadian tool there is: free, abundant and always available. Morning light, daylight breaks and darker evenings shift energy, mood and sleep out of proportion to the effort.

We use the basics and have left some easy wins on the table (amber glasses, light for jet lag). They are next.

NEXT · Chapter 19: movement and recovery. Training smart, not just hard.

MOVEMENT & RECOVERY

Training smart, not just hard.



ESSENCE

Movement is the most natural form of biohacking. Our biology evolved around constant activity: walking, climbing, lifting, running. Today we sit for hours and try to compress fitness into one workout. The mismatch produces weak muscles, stiff joints, poor posture and inflammation.

- **Muscle and strength** preserve mobility, stability and longevity.
- **Cardiovascular fitness** supports circulation and raises VO2 max, a marker of resilience.
- **Metabolic balance:** movement regulates blood sugar and insulin.
- **Brain and mood:** exercise increases BDNF, which supports learning. It also releases endorphins and dopamine.

The other side: recovery

Training creates stress: micro-tears in muscle, strain on joints, activation of the fight-or-flight system. Recovery repairs tissue, refills glycogen, rebalances the nervous system and resolves inflammation.

The body grows stronger after the workout, not during it. Too little movement and too much training without recovery are both harmful.

Our turning point was to stop separating the two. A workout ends only after hydration, food, stretching and a recovery practice such as the sauna or the plunge.

TECHNICAL ELEMENTS

- 1 Strength training**
Micro-tears signal the body to rebuild stronger fibres (hypertrophy). It also supports bone density, posture and metabolism. Without sleep, protein and water, the signal is wasted.
- 2 Cardio**
Strengthens heart and lungs, raises VO2 max, improves circulation and fat use. Zone 2 (steady, moderate effort in which you can still talk) builds endurance with little stress.
- 3 Mobility**
Hours at desks and in cars shorten hip flexors and tighten shoulders. Stretching and functional movement keep joints healthy and prevent injuries. Strength without mobility leads to injury; mobility without strength leads to fragility.
- 4 HRV and recovery scores**
A drop in HRV or in the recovery score is often a sign that the body needs rest more than another hard session (Chapter 7).
- 5 Inflammation**
Exercise creates short-term inflammation that drives adaptation. Recovery resolves it; without recovery it becomes chronic.
- 6 Recovery pathways**
Sleep, protein and carbs, water and electrolytes, low-intensity movement, heat and cold.

WHAT WE DISCOVERED

1 **Strength as the foundation**

Weights are the core of our training, often in the evening. The goal is not maximum load but strength, bone density and posture.

2 **Zone 2, very often**

Low-intensity cardio is one of our most frequent sessions: it builds endurance and recharges instead of exhausting.

3 **Stretching, mobility and massage, always**

These are constant in our routine. Massage in particular we use a lot; it is one of the recovery tools we would not give up.

4 **Sauna and plunge after training**

Heat relaxes; cold gives energy back (Chapters 1 and 2).

5 **Creatine and protein**

Daily creatine and protein-rich meals support recovery and visible results (Chapters 8 and 9).

6 **Movement snacks**

Walking calls, stretching between tasks, stairs instead of lifts.

Once recovery became part of the cycle, training started giving energy instead of taking it.

WHAT DIDN'T WORK

- **Walking after meals as a rule.** We know it helps blood sugar and digestion, but we do it only when the occasion arises.
- **Cold immediately after weights, if muscle growth is the priority.** See the research note in Chapter 1.
- **Pre-workout late at night.** Good for the session, bad for the sleep that should follow it.
- **Training hard without planning recovery.** Drained days, slower progress.

WHAT WE MEASURED

Whoop tracks strain and recovery. The mirror and the scale track the rest: creatine and consistent training show up in the muscle profile.

IS IT WORTH IT?

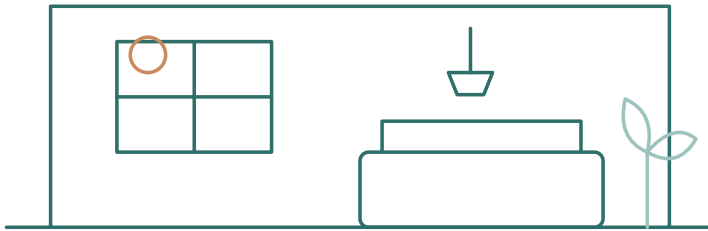
Without question. Movement keeps the body alive; recovery makes it stronger. No supplement or device can compensate for a sedentary or chronically overtrained body.

Strength, zone 2, daily mobility and massage, plus heat and cold for recovery: a rhythm we can keep for years, not weeks.

NEXT · Chapter 20: designing your environment, the silent architect of habits.

DESIGNING YOUR ENVIRONMENT

Aligning your surroundings with your goals.



ESSENCE

We tend to think success depends on discipline and willpower. Psychology shows something different: most daily actions are automatic responses to cues in the environment. Your surroundings often decide your behaviour before you notice.

- A cluttered desk reads as unfinished business and feeds procrastination.
- A phone within reach turns every vibration into a break in attention.
- Bright light late at night delays melatonin.
- Junk food on the counter gets eaten.

Small changes flip those signals: a clear workspace primes focus, warm evening light prepares rest, water and fruit in sight make good choices effortless. Environment design removes friction. It turns discipline into architecture.

TECHNICAL ELEMENTS

1 Cues and triggers

Every habit starts with a cue: an object, a sound, a place, a smell. Change the cue and the behaviour follows.

2 Priming

The brain links places and objects to states of mind. A work zone, a rest zone and a recovery zone help the brain switch automatically.

3 Clutter and clarity

Every object in sight adds cognitive load. The aim is not sterile perfection but a space where what you see supports what you want to do.

4 Social environment

We copy the habits of people around us. The accounts we follow shape what we think is normal.

5 Digital hygiene

Notifications and endless feeds are cues that fragment attention. Turn off non-essential notifications, keep the phone away during focused work, use focus modes.

WHAT WE DISCOVERED

1 Recovery spaces as triggers

The sauna, the plunge, the red light panel and the hyperbaric chamber are not just equipment: walking into those spaces switches the body into recovery mode. This is the part of environment design that works best for us.

2 Food in sight

Healthy options visible and easy to grab; junk food out of sight or not at home.

3 Evening light

Warm, dimmer light after sunset (Chapter 18).

4 Tools in view

Equipment for stretching and training left in sight gets used.

5 Travel

Much of our life happens away from home, in rooms we do not design. Earplugs, an eye mask and a few familiar objects help recreate the essentials anywhere.

WHAT DIDN'T WORK (OUR HONEST LIST)

- **A dedicated workstation.** We have never really designed one. We often work lying on the bed, which is exactly what this chapter advises against.
- **A phone-free bedroom.** The phone is still there.
- **Air quality.** We do not use an air purifier or a CO₂ monitor at home. It is a gap worth closing.

We share these because a book about home biohacking that pretends everything is perfect would not help anyone.

WHAT WE MEASURED

Nothing specific. The best indirect measure is how often the right behaviour happens without thinking about it.

IS IT WORTH IT?

For us, yes. Environment design is one of the highest-leverage tools because it works in the background. Where we applied it (recovery spaces, food, evening light) habits became almost automatic.

Where we did not (bedroom, workspace, air) the gap is visible. That is the clearest evidence that the method works.

PART V

INTEGRATION

From individual tools to a complete system

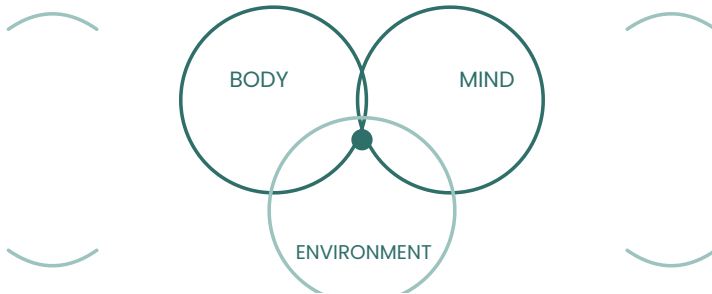


We have explored the building blocks: technology, nutrition, the mind and the environment. Each gave you tools. The real power comes when they work together, not as an endless stack of routines but as a life in which body, mind and surroundings support one another.

Advanced tools do not replace the basics; they amplify them. The goal is not doing more but doing better, in harmony.

BUILDING YOUR SYSTEM

Synergy, integration and sustainability.



ESSENCE

Each tool works on its own: fasting improves metabolism, light resets the clock, the sauna helps recovery, meditation calms the mind. Used in isolation, or stacked at random, they risk becoming noise. Combined with intention, they reinforce each other: this is synergy, when one plus one makes three.

Body, mind and environment are not separate. Sleep influences training, training influences recovery, recovery influences mood, mood influences food choices. An operating system is the framework in which every tool has its place, purpose and rhythm.

TECHNICAL ELEMENTS: WHY SYNERGY WORKS

1 Sauna and cold plunge

Heat raises core temperature, improves circulation and activates heat-shock proteins; cold constricts vessels and trains the nervous system. Alternating them is a workout for the blood vessels.

2 **Training and sleep**

Training creates the need for repair; deep sleep releases growth hormone and supports muscle building. Without one, the other is wasted.

3 **Light and supplements**

Morning light sets the rhythm; vitamin D and magnesium provide building blocks. Signal and material together.

4 **Morning light and a later first meal**

Light resets the clock; a longer overnight gap keeps insulin low. For people whose schedule allows it, the two reinforce each other.

5 **Recovery time as mental time**

Hours in the chamber or the sauna can also serve the mind: reading, planning, visualising.

The three pillars

PILLAR	TOOLS
Body	Nutrition, supplements, hydration, movement, heat, cold, light, oxygen
Mind	Intention, meditation, rewiring, self-regulation, flexibility
Environment	Sleep conditions, light, spaces, digital hygiene

Neglect one pillar and the system wobbles.

Sustainability

If a system feels like a full-time job, it collapses. The aim is to design flows that become automatic through rituals, cues and spaces. Measure just enough to adjust (Chapter 7).

WHAT WE DISCOVERED

We will be honest: our days do not follow a fixed sequence. We travel constantly and, at home, we often use tools as they fit the day rather than in a planned order. Over time, however, some combinations have become constants because they clearly work together.

- 1 **Sauna, then plunge**
The pairing we value most (Chapters 1 and 2).
- 2 **Evening sauna, then sleep**
Our most reliable route to a good night (Chapter 17).
- 3 **Hyperbaric chamber during the day, with a book**
Clarity plus an undisturbed hour (Chapter 4).
- 4 **Training, then sauna or plunge**
Recovery starts immediately (Chapter 19).
- 5 **A breakfast with fat, with the morning supplements**
Better absorption of vitamin D and the other fat-soluble nutrients (Chapters 8 and 9).
- 6 **Sauna, then the Yaman**
The skin is warm and more receptive (Chapter 6).

Pairings that added nothing or worked against us

- **Sauna and red light back to back:** no extra benefit.
- **Hyperbaric chamber in the evening:** worse sleep.
- **Cold plunge before bed:** too stimulating.
- **Yaman and Dr. Pen in the same week:** we keep them apart to let the skin recover.

If we could keep only a few

Asked which tools we would never give up, our answer is: the hyperbaric chamber, the Dr. Pen, our supplements, red light and the LED mask. Then, honestly, we like almost all of them.

A REALISTIC WEEK

AREA	WHAT IT LOOKS LIKE FOR US
Morning	Breakfast with protein and fat, supplements, some daylight, occasionally red light or a plunge
Day	Hyperbaric chamber three or four times a week; work; naps when possible
Training	Strength and zone 2 cardio; stretching and massage constantly

Evening	Sauna, followed by the plunge when it is early in the evening (never just before bed); skin devices; neurofeedback or journaling
Always on	Whoop, filtered water, electrolytes
Periodically	Blood tests, CGM cycles, ketone checks during keto phases

WHAT DIDN'T WORK

- **Copying other people's protocols.** Travel, work and preferences make every system personal.
- **Chasing every new tool.** The devices we keep are the ones that fit our days.
- **Rigid schedules.** They broke at the first trip. Flexible pairings survived.

We have never felt that we were doing too much. The risk is real for others, though: if a routine starts to feel like a burden, remove something.

IS IT WORTH IT?

For us, integration was the final step: it turned a toolbox into a way of living. Clarity, because the system guides choices; resilience, because recovery is built in; consistency, because progress no longer depends on willpower.

Your system will look different from ours. What matters is that each tool has a place and a reason.

FROM BIOHACKS TO A WAY OF LIVING

When we started exploring biohacking, we did not realise we were beginning a journey that would touch every part of life: nutrition, recovery, mindset, sleep, light, environment. At first it was about trying tools. Over the years we discovered a deeper truth: biohacking is not about tools, it is about systems.

- 1 Part I**
Technology that works from the outside in: cold, heat, light, oxygen, brain and skin devices and the trackers that tell us whether they work.
- 2 Part II**
How the body responds to food, supplements, water, peptides and cyclical protocols.
- 3 Part III**
How the mind can be trained like a muscle, through focus, meditation, rewiring and flexibility.
- 4 Part IV**
The environment: sleep, light, movement and spaces that shape behaviour without our noticing.
- 5 Part V**
How everything comes together into a personal system.

THE REAL LESSON

The biggest lesson was not about red light, oxygen or wearables. Small, consistent actions aligned across body, mind and environment change you more than any single device or supplement. Biohacking is not

meant to be a full-time job: once the flows are designed, the system runs in the background and leaves you free to live.

We have also learned to be honest about the gaps. This book shows what we do well and what we still get wrong: late coffee, the phone in the bedroom, the jet lag we never manage with light. Knowing where you stand is the first step of every change.

WHERE WE WOULD START

- 1 **Light**
Get morning light.
- 2 **Sleep**
Sleep in a cool, dark room.
- 3 **Basics**
Drink water, move every day, breathe slowly.
- 4 **Mind**
Choose one practice, such as a short daily meditation.
- 5 **Build**
Add one tool at a time, measure, keep what works.

THE FUTURE

Technology will keep evolving: smarter devices, more personal data, new molecules and new rules, as the story of peptides shows. The fundamentals will not change: sleep, light, food, movement, mindset and environment. Advanced tools are multipliers, but only if the base is strong.

THE INVITATION

Our invitation is simple: don't copy, create. Use what resonates, experiment, measure and design your own system. In the end, biohacking is not about chasing longevity or performance as abstract goals. It is about a life in which energy, clarity and resilience are the default, so you can focus on what truly matters.

The ultimate hack is alignment.

OUR PROTOCOLS AT A GLANCE

How we organised our days and weeks. A record of what we did, not a programme to follow.

DAILY PROTOCOL: SAMPLE FRAMEWORK

WHEN	ACTION	WHY
Morning	10–15 minutes of natural light	Resets the circadian rhythm
	Water with minerals or electrolytes	Replenishes fluids
	Breakfast with protein and fat, with fat-soluble supplements	Steady energy, better absorption
	Short walk or mobility	Wakes up the body
	Intentions or journaling	Sets the mental focus
Day	Training (strength, cardio or mobility)	Stress signal for adaptation
	Protein-based meal	Repair and recovery
	Hyperbaric session, if available	Clarity and recovery
	20-minute nap or breathing reset	Nervous system recovery
	Outdoor break, stretching	Alertness, less stiffness
Evening	Dim, warm light after sunset	Supports melatonin
	Light dinner	Easier digestion and sleep
	Sauna, stretching or meditation	Transition into recovery

	Screens off or filtered before bed	Protects deep sleep
Night	Cool, dark, quiet room; 7–9 hours	Full repair cycle

WEEKLY PLANNER

FREQUENCY	PRACTICE	WHY
3–4×	Strength training	Muscle, bone density, metabolism
2–3×	Cardio (intervals and zone 2)	Heart health, endurance
Daily	Mobility, 5–10 minutes	Joints, fewer injuries
2–4×	Sauna, often followed by cold plunge	Recovery, sleep, resilience
3–5×	Red light	Skin, recovery
2–3×	Meditation or neurofeedback	Focus, calm
3–4×	Hyperbaric sessions during the day, if available	Oxygenation, clarity
Alternating weeks	Skin devices (RF and microcurrent) or microneedling	Skin quality without overload
Periodic	CGM cycles of 1–2 weeks	Personal food responses
Periodic	Blood tests with a doctor	Vitamins, hormones, inflammation

TEN PRINCIPLES

- 1 Sleep first**
It is the foundation.
- 2 Light is information**
Sunlight in the morning, darkness at night.
- 3 Movement is medicine**
Train, walk, stretch and recover.

- 4 **Nutrition is personal**
Experiment, track, adapt.
- 5 **Hydration is underestimated**
Water and electrolytes drive performance.
- 6 **The mind multiplies**
Meditation and rewiring amplify everything else.
- 7 **Environment is silent architecture**
Design spaces that make good choices easy.
- 8 **Synergy beats stacking**
Combine tools with intention.
- 9 **Feedback matters**
Measure, adjust, refine.
- 10 **Sustainability wins**
Small consistent habits beat heroic short-lived efforts.

FIVE THINGS WE WOULD START WITH

- Morning light and water.
- A cool, dark bedroom.
- Five minutes of mobility a day.
- Warm, dim light in the evening.
- A short journal or meditation to set your focus.

SOURCES & FURTHER READING

A starting point for readers who want to go deeper.

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CLAIRE HALDEN

Claire Halden has built her life around one question: what actually works for energy, recovery and a clear mind (and what is only noise)?

Her professional path has crossed several industries and taken her across many countries, often at a pace that leaves little room for rest. That pace is what pushed her, years ago, to start testing tools at home: first cold water and heat, then light, oxygen, brain training, skin devices, supplements and everything in between, often with the guidance of doctors and specialists.

Away from work, she and her partner fill their time with everything that tests body and nerves: driving on the racetrack, riding motorbikes across the desert, the mountains and flying (both hold a pilot's licence). That is where energy, recovery and a steady mind stop being theory. Almost everything in this book was tested by the two of them together, which is why it is written in the first person plural.

In *Biohacking*, *Honestly* she shares that experience with one rule: say what worked, what did not and what is still missing. She believes that peak energy and wellbeing are not reserved for athletes or specialists. They are the result of conscious design and daily choices, repeated consistently.

ALSO IN THE KNOWLEDGE, SIMPLY COLLECTION

- ***Between Wanting and Having***: the law of attraction as mental training, explored in depth.
- ***Biohacking for Pugs: Vitality, Longevity, and Joyful Companionship***: nutrition, movement, environment and new technologies applied to our four-legged companions.

IS IT WORTH IT?

Cold plunges and infrared saunas. Red light panels and hyperbaric chambers. Neurofeedback headbands, microneedling pens, supplements, peptides, fasting, sleep trackers.

For years we tested them at home, often with the guidance of doctors, asking one question before every purchase and every new habit: is it worth it?

This book is the honest answer. For each tool you will find what it is, what we wanted, what we tried, what did not work, what we measured and our verdict. Including the habits we still get wrong.

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