



THE GOOD SLEEP GUIDE FOR RECOVERY

How Sleep Repairs Your Body, Restores Your Strength and Speeds Your Return

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Based on peer-reviewed research, 2022 to 2026

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For everyone working hard to come back: from training, from injury, from illness, and from a demanding life.

Wishing all of patients and friends a speedy recovery

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Foreword

In all my years working with bodies, in clinics, in homes and on the touchline of professional sport, I have come to believe that recovery is the most underrated word in health. We celebrate the effort: the training, the rehabilitation, the fighting through. We pay far less attention to the quiet process that turns all that effort into actual progress. That process is recovery, and its headquarters is sleep.

Whether you are an athlete chasing a personal best, a patient mending after surgery, or simply a busy person trying to bounce back from the demands of a hard week, the principle is the same. You do not get stronger during the work. You get stronger during the recovery from it, and most of that recovery is scheduled for the night. Train hard and sleep poorly, and you are pouring effort into a bucket with a hole in the bottom.

This guide is about plugging that hole. It explains what your body actually does while you sleep, why skimping on it stalls your progress, and how to build nights that let your hard work land. The science is clear and, I think, genuinely motivating. Sleep is the most powerful recovery tool you have, and it is free.

You do not grow stronger during the effort. You grow stronger during the recovery from it, and most of that happens at night.

Introduction: The Repair Shift

Imagine your body as a workshop. By day it is open for business, doing the work you ask of it, accumulating the small damage and fatigue that any hard use brings. By night the workshop closes its doors to customers and the repair crew clocks in. Tissues are mended, muscle is rebuilt, energy stores are refilled, the immune system does its rounds, and the nervous system is reset for another day. This is not a metaphor for sleep. It is a fair description of what sleep physically is.

When we cut sleep short, we send the repair crew home before the work is done. The damage of the day is left half-mended, and it carries over. Do this once and you feel it as next-day fatigue. Do it repeatedly and the deficit compounds: progress plateaus, niggles become injuries, illnesses linger, and the bounce-back you took for granted starts to fail.

Research Evidence *Sports Medicine - Open, 2023*

A systematic review of sleep interventions in athletes concluded that increasing sleep, whether by extending the night or adding naps, was among the most effective ways to improve physical and cognitive performance and recovery. Of all the recovery strategies studied, simply getting more sleep was one of the most reliable.

(Cunha, Costa, Marques, Brito, Lastella and Figueiredo, Sports Medicine - Open, 2023; 9:58)

That conclusion is worth pausing on. In a field full of expensive recovery gadgets, ice baths and supplements, the humble act of sleeping more came out near the top. The rest of this book explains why, and how to claim that advantage for yourself, whatever you are recovering from.

Pause and Reflect

Think about how you currently treat recovery. Do you plan your training, your rehabilitation or your workload with care, then leave your sleep to chance? For most people the honest answer is yes, and it points straight to the easiest gain available.

PART ONE

Why Sleep Is the Foundation of Recovery

Chapter 1: The Night Shift, and What Your Body Builds While You Sleep

Meet Tom

Real-World Story

Tom, 29

Tom was training for a marathon and could not understand why he was getting slower. “I’m doing everything,” he said, “the miles, the gym, the protein.” Everything except sleep, it turned out. He was running on six broken hours, up early to train before work. He had assumed recovery was about what he put into his body. He had never considered that the most important recovery work happened while he was unconscious, and that he was cutting it short every single night.

To understand recovery you have to know what sleep does at the level of tissue and hormone. The single most important event is this: during deep, slow-wave sleep, the body releases its largest pulse of growth hormone of the entire day. Growth hormone is the master signal for repair. It drives the rebuilding of muscle, the maintenance of tendon and bone, and the mending of tissue worn down by use. Miss the deep sleep, and you miss the pulse.

Alongside this, sleep is when muscle protein synthesis, the actual construction of new muscle, proceeds most favourably, and when the body refills its energy stores, restocking the glycogen that fuels the next day's effort. The brain, too, recovers: the nervous system that coordinates every movement is reset, which is why a well-slept athlete is not only stronger but sharper, quicker and better coordinated.

A single night of good sleep is doing several jobs at once: rebuilding the structure, refuelling the tank, and recalibrating the controls. No supplement, no gadget and no technique replicate this combination. It is the foundation everything else is built on, and it happens for free, if you let it.

Deep sleep delivers the day's biggest surge of repair hormone. Skip it, and you skip the very signal that turns effort into progress.

Sammy's Tip

If your progress has stalled despite doing everything right, audit your sleep before you change your training. More work on top of poor recovery rarely helps. Often the missing ingredient is not effort but rest.

Chapter 2: When Recovery Stalls

If good sleep builds, poor sleep does the opposite. Sleep loss shifts the body out of its building, anabolic state and into a breaking-down, catabolic one. Stress hormones rise. The hormones that drive repair and growth fall. The result is a body that struggles to rebuild what the day's effort has broken down, so the effort accumulates as damage rather than progress.

Research Evidence *Physiological Reports, 2021*

A single night of total sleep deprivation reduced the rate at which healthy adults built new muscle protein by around eighteen per cent. At the same time the stress hormone cortisol rose by roughly a fifth and testosterone fell by about a quarter. One bad night was enough to tip the body towards breakdown.

(Lamon, Morabito, Arentson-Lantz and colleagues, *Physiological Reports*, 2021)

That an effect this large follows a single night is sobering. Now imagine it repeated across a hard training block, or a stretch of broken nights after surgery, and you can see how recovery quietly fails. The body is being asked to rebuild while being denied the conditions in which rebuilding happens.

The consequences reach all the way to body composition. In an interesting study two groups followed the very same reduced-calorie diet, but one slept well and the other slept short. Both lost weight, but the well-slept group lost mostly fat and kept their muscle, while the short-sleep group lost far more of their precious muscle and clung to fat. The only difference was the sleep. For anyone trying to recover their shape or strength, that is a decisive finding.

Research Evidence *Annals of Internal Medicine, 2010*

Dieters who slept five and a half hours lost more than half as much fat, and considerably more muscle, than those on the identical diet who slept eight and a half hours. Short sleep redirected the loss away from fat and towards lean tissue.

(Nedeltcheva and colleagues, *Annals of Internal Medicine*, 2010; a landmark finding repeatedly supported since)

The lesson across both studies is the same. Effort without recovery does not just fail to help. It can actively send you backwards, sacrificing the muscle and resilience you are working so hard to build. Sleep is the hinge on which the whole thing turns.

Pause and Reflect

Recall a time you pushed hard but went backwards, more tired, weaker, more prone to niggles. Was your sleep keeping pace with your effort? The gap between the two is where progress is so often lost.

PART TWO

Sleep and Physical Performance

Chapter 3: The Edge That Extra Sleep Gives

If sleep loss drags performance down, does extra sleep lift it up? The research says yes, and the effect can be remarkable. The classic demonstration comes from sport, where the margins are fine and the measurements precise.

Research Evidence *Sleep, and athletic sleep-extension research*

When collegiate swimmers extended their nightly sleep to around ten hours for several weeks, they swam faster sprints, reacted off the blocks more quickly, turned faster, and reported better mood and less fatigue. Simply sleeping more, with no change to training, improved nearly every measure of performance.

(Mah and colleagues, foundational athletic sleep-extension work, supported by later reviews through 2022 to 2026)

What is striking is that these were already highly trained athletes. They did not train harder. They slept more, and they got better. The extra sleep released performance that their training had built but their fatigue had been masking. Recovery, in other words, was the bottleneck all along.

You do not have to be an athlete to benefit. The same principle applies to anyone asking a lot of their body. Extra, well-protected sleep improves strength, endurance, coordination and the perception of effort, so that the same work feels easier and yields more. In a culture that worships the grind, this is a quietly radical idea: that the next gain may come not from doing more, but from recovering better.

Extra sleep does not build fitness you have not earned. It unlocks the fitness your effort has built but your fatigue has been hiding.

Sammy's Tip

In the run-up to anything demanding, a race, a competition, a physical test, treat sleep as part of your preparation. Bank good nights in the days beforehand rather than cramming effort. A well-rested body performs closer to its true ceiling.

Chapter 4: Reaction Time, Fatigue and the Risk of Injury

Recovery is not only about building tissue. It is also about resetting the nervous system, and this is where the cost of poor sleep becomes not just a matter of performance but of safety. A tired body is a slower, clumsier, less reliable one, and that has direct consequences for injury.

Research Evidence *Nature and Science of Sleep, 2024*

A systematic review and meta-analysis found that acute sleep deprivation reduced explosive power, speed and other measures of athletic performance, and increased the perception of how hard a given effort felt. The tired body did less and found it harder.

(Gong and colleagues, *Nature and Science of Sleep*, 2024)

Slower reactions, poorer coordination and weakened judgement add up to a body more likely to misstep, mistime and get hurt. This is borne out in studies of young athletes, where those who sleep less are consistently found to suffer more injuries than those who sleep well. Sleep, it turns out, is one of the most powerful and most overlooked forms of injury prevention there is.

There is a deeper layer too. Adequate sleep helps the body repair the micro-damage of training before it accumulates into an overuse injury. Skimp on the repair and the small strains never fully heal, so they build, week by week, until something gives. Many an injury blamed on a single moment was in truth the result of months of unfinished nightly repair.

Slower reactions, weaker judgement, unfinished repair. Poor sleep is one of the most underrated causes of injury, and one of the easiest to fix.

Pause and Reflect

Think of your last injury or persistent niggle. How were you sleeping in the weeks before it? The honest answer will not always implicate your sleep, but more often than people expect, the warning signs were there in the nights.

PART THREE

Recovery from Illness, Injury and Surgery

Chapter 5: The Immune Repair Crew

Recovery from illness follows the same rule as recovery from exercise: most of the work happens at night, and most of it depends on sleep. The immune system, the body's repair and defence crew is profoundly shaped by how we sleep. During good sleep, immune activity is coordinated and effective. During poor sleep, it falters, leaving the body more exposed and slower to mend.

Research Evidence *Sleep, 2015*

In a study in which healthy adults were exposed to a cold virus under controlled conditions, those who had been sleeping less than six hours a night were several times more likely to develop a cold than those sleeping more than seven. Their sleep, measured objectively, predicted whether they got ill.

(Prather, Janicki-Deverts, Hall and Cohen, *Sleep*, 2015)

If sleep helps decide whether you fall ill, it also helps decide how quickly you recover once you do. Sleep regulates inflammation, marshals immune cells, and supports the tissue repair that healing requires. This is the physiological reason behind the oldest advice in medicine: when you are unwell, rest. The instinct to sleep more when ill is not weakness. It is the body requesting the conditions it needs to heal.

The same applies to wounds and to the everyday inflammation of a hard-used body. Sleep is when inflammation is meant to resolve rather than simmer. Deny the body its sleep and you leave it in a low-grade inflamed state that slows every kind of healing. Protecting sleep is, quite literally, protecting your capacity to recover.

Sammy's Tip

When you feel an illness coming on, or are recovering from one, prioritise sleep above almost everything else, and give yourself full permission to rest. You are not being lazy. You are giving your immune system the night shift it needs to do its work.

Chapter 6: Coming Back from Injury and Surgery

Meet Anita

Real-World Story

Anita, 58

Anita was recovering from a knee replacement and her rehabilitation had stalled. She was doing her exercises faithfully, yet progress had ground to a halt. When I visited, the reason was plain: she was sleeping in snatches, woken by discomfort and worry, never getting a solid stretch. We focused as much on her nights as on her knee. As the sleep improved, so, at last, did the recovery. The exercises had been landing on a body too tired to build on them.

Recovery from surgery or serious injury is one of the times the body most needs sleep, and, cruelly, one of the times sleep is hardest to get. Pain, anxiety, unfamiliar surroundings, disrupted routines and the effects of medication all conspire against it. Yet this is precisely when the repair shift matters most, because the body has so much rebuilding to do.

There is a vicious loop at work here, familiar to anyone who has recovered from an injury. Pain disturbs sleep. Poor sleep then lowers the body's pain threshold and slows healing, which makes the pain worse, which disturbs sleep further. Each turn tightens the others. The encouraging news is that the loop can be broken from the sleep side, and doing so tends to ease the pain and speed the healing together.

This is why, when I help someone recover from an injury or operation, I treat their sleep as part of the rehabilitation programme, not as an afterthought. The daytime exercises do the directing. The nightly sleep does much of the actual building. Neglect the night, and the day's good work has nowhere to take root.

You do your rehabilitation by day. Your body does much of the healing by night. Protect the night, or you are only doing half the work.

Pause and Reflect

If you are recovering from something now, ask whether your sleep is being given the same care as your exercises or your medication. If not, you may have found the missing half of your recovery plan.

PART FOUR

Building Recovery into Your Nights

Chapter 7: The Recovery-Focused Evening

Knowing that sleep drives recovery is one thing. Building nights that deliver it is another. The good news is that the principles are simple and the same whether you are an athlete, a patient or a tired professional. The aim is to lower the body's arousal in the evening so that deep, restorative sleep comes easily and lasts.

Light is the master signal. Bright light late at night, especially from screens, tells the brain it is still day and delays the sleep hormone melatonin. Dimming the lights and putting bright screens away in the last hour is among the most effective things you can do. Temperature matters too: the body must cool slightly to fall asleep, so a cool, dark, quiet bedroom works with your physiology, and a warm bath an hour before bed helps by letting the core temperature drop afterwards.

Two substances deserve special caution from anyone serious about recovery. Caffeine lingers in the body for many hours and can quietly rob you of deep sleep even when taken in the afternoon. Alcohol is more treacherous still: it feels relaxing and may help you fall asleep, but it suppresses the deep and dreaming sleep in which much recovery happens, and fragments the second half of the night. The nightcap that feels like it aids recovery is, in truth, working against it.

- Dim the lights and put bright screens away in the final hour before bed.
- Keep the bedroom cool, dark and quiet, and reserve it for sleep.
- Stop caffeine by early afternoon. It can steal deep sleep long after the lift has gone.
- Treat evening alcohol as a recovery disrupter, not a relaxant. It robs you of the deepest, most restorative sleep.
- Keep a steady bedtime and waking time, so the body knows when to begin its repair shift.

Sammy's Tip

On heavy training days, or in the thick of recovery from illness or surgery, give yourself extra time in bed rather than less. Your body has more rebuilding to do, and more rebuilding needs more night.

Chapter 8: Naps, Sleep Banking and Smart Strategies

The night is the foundation, but it is not the only tool. Used wisely, naps and a little planning can add meaningfully to your recovery, especially when life or training makes long nights hard to come by.

A short daytime nap, around twenty to thirty minutes, can restore alertness, ease fatigue and support recovery without spoiling the coming night, provided it is taken earlier rather than late in the day. Athletes use naps routinely for exactly this reason. The trick is to keep them short, so you wake refreshed rather than groggy, and early, so they do not borrow from the night.

There is also good evidence for what researchers call sleep banking: deliberately sleeping more in the days before a period when you know sleep will be short, such as a competition, a big event or a stretch of demanding work. Going in well-rested cushions the blow of the harder nights to come. It is the opposite of cramming, and it works far better.

Finally, be wary of trying to repair a chronic sleep debt with a single enormous weekend lie-in. A long catch-up sleep can take the edge off, but it does not fully undo the damage of a week of short nights, and it can disrupt your rhythm further. Consistent, adequate nights beat dramatic swings every time. Recovery rewards the steady, not the heroic.

Bank sleep before you need it, nap short and early, and prize consistency over heroics. Recovery is built on rhythm, not rescue.

Pause and Reflect

Could a short, early nap or a few banked nights fit into your week? Small additions, used deliberately, often deliver more recovery than people expect.

Chapter 9: The Recovery Reset Plan

Here is a simple, four-week way to put recovery sleep at the centre of your routine. It works for athletes, for those mending from illness or surgery, and for anyone simply worn down by life. The principle throughout is to make recovery a plan, not an accident.

Week one: measure the gap

Change nothing yet. Each day, note roughly how you slept and how recovered you felt: your energy, your soreness, your mood, your performance. You are looking for the link between your nights and your recovery. Almost everyone finds that their best days follow their best nights.

Week two: protect the foundation

Set a consistent bedtime and waking time, and build a calm last hour: lights down, screens away, the room cool and dark. You are not yet adding hours, only steadying and protecting the nights you already have. This alone often improves how recovered you feel.

Week three: extend the night

Now give yourself more time in bed, starting with fifteen to thirty minutes earlier. Remember the swimmers who simply slept more and performed better across the board. You are aiming for that same effect: recovery you have earned but fatigue has been hiding.

Week four: add the extras

With the foundation in place, layer in the smart strategies: a short, early nap on demanding days, banked sleep before you know a hard patch is coming, and extra rest whenever your body is doing serious rebuilding. By now, recovery is no longer left to chance. It is something you actively build, night after night.

Make recovery a plan, not an accident. The body will reward a well-kept night more reliably than any gadget on the market.



Pause and Reflect

As you finish this guide, ask yourself one question. Of all the energy you put into getting better, stronger or well, how much have you put into your sleep? If the answer is little, you have just found your greatest untapped source of recovery.

Your Sleep and Recovery Cheat Sheet

One page to keep by the bed. The night is where recovery actually happens.

- You get stronger during recovery, not during effort. Most recovery happens at night.
- Deep sleep delivers the day's biggest surge of repair hormone. Protect your deep sleep.
- One bad night can cut muscle-building and tip the body towards breakdown. Nights add up.
- Extra sleep unlocks performance your effort built but fatigue was hiding. More rest, not just more work.
- Poor sleep slows reactions and weakens judgement. It is a leading, fixable cause of injury.
- Sleep helps decide whether you fall ill and how fast you recover. Rest is part of the treatment.
- Pain and poor sleep form a loop. Break it from the sleep side to ease pain and speed healing.
- Treat sleep as part of your rehabilitation, equal to your exercises and your medication.
- Nap short and early, bank sleep before hard patches, and prize consistency over heroics.
- On heavy or recovery days, give yourself more time in bed, not less. More rebuilding needs more night.

References

A selection of the peer-reviewed research underpinning this guide, drawn principally from 2022 to 2026 alongside a small number of landmark earlier studies.

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About Sammy Margo

Sammy Margo MSc MCSP HCPC MMACP AACP is a Chartered Physiotherapist with over 30 years of clinical experience, including as the first female physiotherapist in English professional football. She is the CEO and Founder of SMARTPHYSIO and the author of The Good Sleep Guide and The Good Sleep Guide for Kids, both published by Penguin/Ebury.

Much of Sammy's work is delivered in people's own homes and on the sporting touchline, where she has spent decades seeing first-hand how sleep, training, injury and recovery shape one another. She is widely recognised as one of the UK's leading voices on sleep, recovery and the physiology of rest, combining rigorous clinical expertise with a warm, practical approach to helping people understand and improve their own wellbeing.

The Good Sleep Guide for Recovery joins a growing series of evidence-based guides exploring the science of sleep across different areas of life, alongside The Good Sleep Guide for Beauty, The Good Sleep Guide for Travel, The Good Sleep Guide for Pain, and others.

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