8

RECHARGE

Physical and mental relaxation are key to sustaining energy levels, reducing fatigue, nurturing creativity and enhancing emotional intelligence. Quality sleep is vital for recovery, hormone balance and brain function.

So many of us get stuck on Pierre de Coubertin's Olympic motto – *'citius, altius, fortius'*, or 'faster, higher, stronger'. At some stage, though, the law of diminishing returns kicks in: the system slows, shuts down, doesn't bounce back. People are working longer hours and pushing themselves further than ever before. But without adequate recovery, exhaustion, overload, chronic fatigue, burnout and stress are inevitable.[1]

This chapter examines the benefits of quality recuperation. We'll consider lessons from elite sport, learn about the science underlying recovery and high performance and take a spin around the globe to learn what different cultures do to recharge.

The message is simple: optimising recovery delivers long-lasting benefits. Recovery is not a luxury, it is a necessity and an essential component of MatchFit.

FOUNDATIONS OF MY APPROACH TO RECOVERY

For more than two decades, my approach to recovery has been shaped by three parts of my life:

Lessons from sport

The sporting world understands the relationship between recovery and performance. Sporting teams and world-class athletes invest as much money in recovery as they do in training and competition. I worked with David Misson when I first started at NSW Cricket. Misso and the medical team at the Sydney Swans (Matty Cameron and Dr Nathan Gibbs) lead the way in recovery in Australian sports conditioning. While travelling the world with the Australian cricket team, I was immersed in the way other successful teams approached training and recovery. I call this my 'practical PhD' working in elite sport.

Recovery science

Dr Tom and I have assessed thousands of people to see what is going on inside their bodies and brains. Our Human Performance Lab has taught us that recharging is about building in regular periods of strategic recovery:

- Parasympathetic activation (the relaxation response)
- Psychological detachment
- Restorative sleep is crucial and this chapter includes information on the science of sleep and tips to help you improve sleep habits.

Travelling and learning from other cultures

The third cornerstone comes from travelling the world – adventuring, searching, learning as I go. I love exploring what different cultures do to balance the ON and the OFF, the yin and the yang.

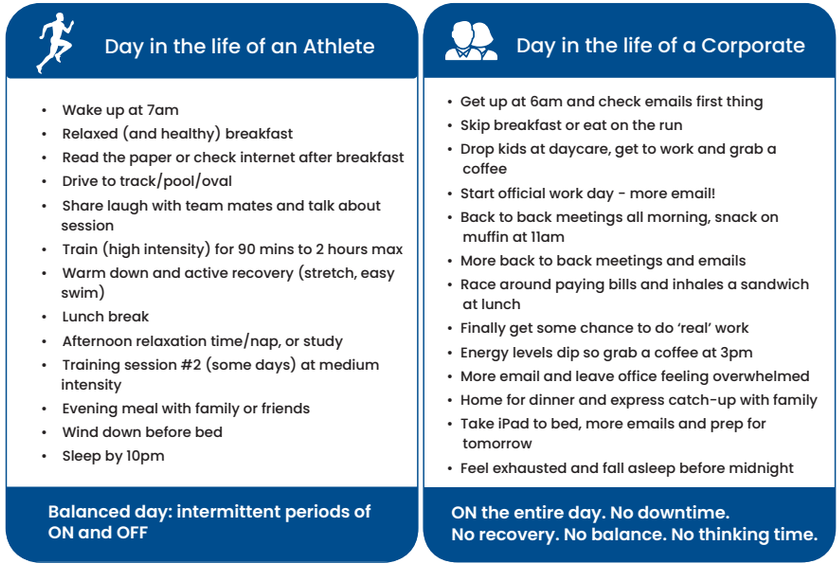
Let's look at each of these in more detail.

1. LESSONS FROM SPORT

Top-level teams and athletes invest as much (sometimes more) time and money on rest, recovery and quality sleep as they do on training and competition. As this chart shows, my job is to get the balance right between the red zone and the green zone: stressing athletes through training and competition, and then building strategies to fast-track their recovery.[2]

(Adapted from: The Power of Full Engagement)

Apart from pushing myself to exhaustion a few times each week, I miss the life I lived as an athlete. Every spare minute isn't filled with email, meetings, compliance or meaningless distractions. Sportsmen and women enjoy a lot of down time as they balance periods of high and low intensity – stress and recovery. Sports coaches know that if athletes push themselves too hard for too long, the only outcome will be deterioration and collapse. Let's compare a typical sportsperson's day with that of a typical corporate worker.



Too much high-intensity stress means too little low-intensity recovery. The only possible result is that performance wilts – perhaps even to the point of physical or mental collapse.

ATHLETES' PERCEPTIONS OF THE IMPORTANCE OF RECOVERY

Athletes must address the imbalance between stress and recovery, where greater training load and stress necessitate increasing recovery. The importance of recovery was highlighted in a study of 890 elite athletes which rated sleep, fluid replacement and socialising with friends as the most important forms of recovery. Men rated an ice bath and supplements as more important, whereas women rated discussions with their teammates and coaches after training and matches.[3]

Hapa hapa

As mentioned in the previous chapter, when I was a middle-distance runner, a group of Kenyan athletes would come and train with us every year. After our sessions on the track, we would hear the Kenyans sing the Swahili words *'hapa, hapa'* which means both 'slowly, slowly' and 'now, now'. Their training patterns were based on listening to their bodies' needs. Kenyans don't need fancy terms like 'Performance Intelligence' – they simply train when they feel good and take time off when they need to. It's not unusual for a Kenyan world record holder to take two or three months off every 12 to 18 months.[5]

2. RECOVERY SCIENCE

This is an important section so bear with us. There are two aspects to recovery science: physical and psychological. We know this intuitively – everyone has experienced times when they feel exhausted even though they've hardly moved from their desk all day. Psychological stress can be just as tiring.

HOW TINDER CHANGED NBA RECOVERY STRATEGIES

Back in the 1980s, home teams in the NBA won more than two-thirds of games. But recently it's dropped dramatically – by 2017 home teams were winning just 57.4% of games, an all-time low. A recent ESPN report concluded, 'NBA players are sleeping more and drinking less.' Part of that is due to Tinder – seriously! Players on an away game, who once might have spent half the night at a club drinking, are now planning their trysts in advance and getting more sleep as a result. They're also paying more attention to their physical recovery. It all adds up to better performance.[4]

Our biological responses to external and internal environmental cues are controlled by the body's autonomic (or self-regulating) nervous system. This is like a balancing act between the *sympathetic* and *parasympathetic* nervous systems.

- The sympathetic nervous system (SNS) is responsible for alertness and wakefulness, as well as our ability to respond to stress. It's often termed the 'fight or flight' response.

- The main role of the parasympathetic nervous system (PNS) is to conserve energy. One way it does this is by slowing the heart rate, particularly when we are resting or sleeping. The PNS is referred to as the 'rest and digest' system.

THE IMPORTANCE OF REST AND RECOVERY IN THE MILITARY

Brain Corrigan served as a corporal in the 3rd Battalion, Royal Australian Regiment, and in the School of Military Engineers as Corporal PTI. 'Underpinning operational requirements is R&R (rest & recovery). After a patrol we would remove the uniform and adopt a shorts, T-shirt and thongs mindset, contact family and switch off. Slowing down is paramount to performing in high-stress, high-risk environments, even in the jungle where the pace is "slowly, slowly, catchy monkey". The nervous system is firing on all cylinders. Soldiers who have the ability to prioritise recovery are better operators. This is obvious when firing sniper rifles – the ability to reduce the heart rate through slow diaphragmatic breathing allows for greater accuracy and clearer decision making.

'We are normally given a week off during a six-month deployment to completely detach. Interestingly, deployments over six months, particularly those lasting between nine and 12 months, are more highly correlated with increased PTSD symptoms than those deployments lasting five months or less. Andrew's recharge philosophy is imperative for high pressure domains like the military.'

Heart rate variability (HRV)

HRV tracks physiological stress by measuring the variation in the time between each heartbeat. High levels of HRV are associated with better resilience. Low HRV is associated with stress, disease and decreased resilience.[6]

We need to stimulate *parasympathetic activation*, which is dominant when we are truly resting or sleeping. And that requires us to overturn many elements of our sedentary, caffeinated, 'always on' lifestyle.

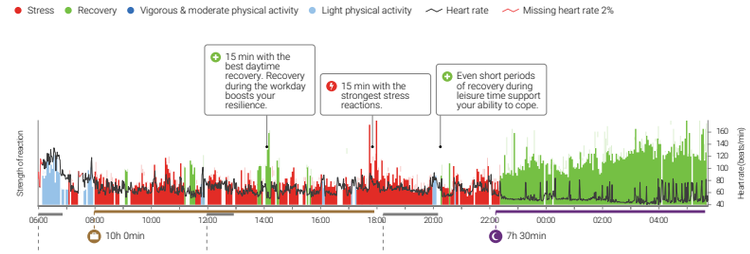
The balance between ON and OFF

Think of your body as a switch, with stress being ON and recovery being OFF. In an ideal world, you want to spend less than 20% of your time under sympathetic (stress) dominance. However, it is rare that we see that in the real world, especially in middle-aged full-time workers. On an average weekday, we'd like to see a person spend 50% or less of their time under sympathetic dominance, and at least 35% under parasympathetic dominant control.

If you're good at maths, you'll be wondering where the other 15% went. That comprises movement (both light movement and more intense exercise) and what we call 'white noise' time, where neither the parasympathetic nor the sympathetic system is detected as being most dominant.

Measuring HRV

The following diagram shows how we translate our findings into a simple-to-use stress/recovery profile.



HRV never lies. By measuring HRV over 24 hours, we can accurately detect periods of stress and recovery across the day. We observed the following:

- *Poor sleep:* The average person is still in sympathetic nervous system 90 minutes to two hours after going to bed (meaning they are asleep but their body is still in a physiological stressed state).
- *The effect of stimulants:* HRV rises acutely within the first 60–90 minutes of sleep, but this expected rise (which indicates biological recovery) is greatly delayed

after alcohol, caffeine and screen use in bed – and after special cuddles – which we've seen mostly in women, not so much men.

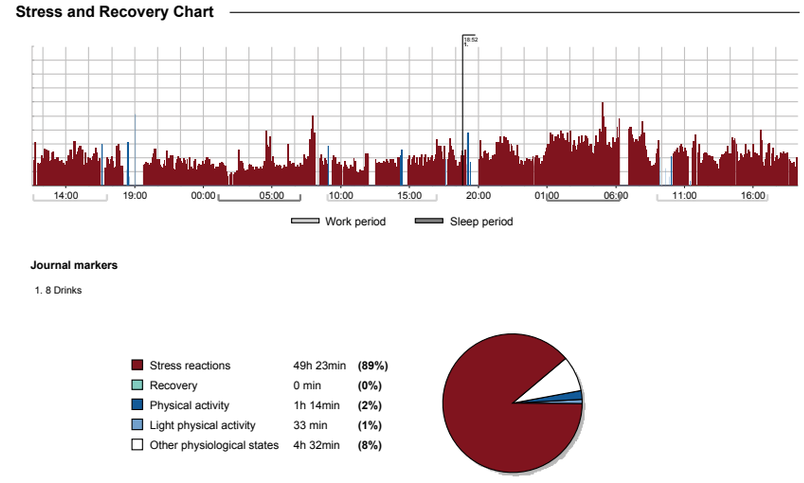
- *Difficulty waking:* Parasympathetic activity, with high HRV, is most dominant around 4 am, when the body temperature, heart rate and blood pressure are at their lowest, and sleep is deepest. This maximal physiological recovery point can be delayed after drinking or emotional stress the previous night, which is why many struggle to wake out of deep sleep between 6 am and 7 am.
- *The benefit of exercise:* Habitual exercisers tend to have higher HRV than non-exercisers. One of the greatest benefits of exercise, especially high-intensity exercise, is in how it trains the parasympathetic system to recover and adapt.
- *Toxic stress:* Raised heart rate from exercise is not the same as raised heart rate from emotional stress; the latter is associated with withdrawal of the parasympathetic levels, a type of stress we call 'toxic stress'.

This last point is important, as emotional stress is essentially pro-inflammatory. Scientists now believe this to be a contributing factor to the increase in chronic disease in Western societies.

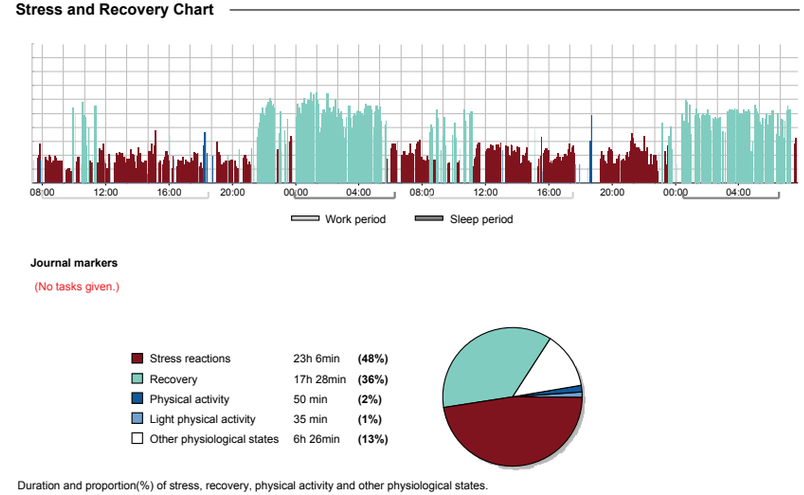
Improving HRV

The three best ways to enhance HRV are by 1) improving your VO_2 max (see Chapter 6 MOVE), 2) reducing exposure to toxic stress (sugar foods and emotional stress) and 3) increasing parasympathetic activation using a range of methodologies such as breathing and biofeedback (in other words, learning to control what were once thought to be involuntary body processes). The most common way to get biofeedback is to use a smartwatch or phone app to monitor variables like heart rate, respiration rate, skin surface temperature or HRV. Also adopt a low-inflammatory, alkaline-based diet (see Chapter 7 FUEL).

The following table shows the difference between our client Gary's first and second assessments. The interval was six weeks, and in that period Gary was an active participant in our PQ Leadership program. Gary is what I refer to as a 'renovator's dream'!



Duration and proportion(%) of stress, recovery, physical activity and other physiological states.



Duration and proportion(%) of stress, recovery, physical activity and other physiological states.

Assessment 1 (Stress 89%, Recovery 0%)	Assessment 2 (Stress 48%, Recovery 36%)
On all day, emails and technology from early morning to just before bed. Checked mobile in bed before sleep.	Working in waves and sustained blocks of focused work. Turned mobile off 30 minutes before going to bed.
No planned exercise and only 3700 steps average each day.	Planned exercise (balance of cardio, weights and some mobility) and walking >10,000 steps each day.
Diet high in foods with added sugar.	Low-sugar diet.
3–5 alcoholic drinks before bed.	Only one alcoholic drink before bed and introduced two AFDs each week.
Jumping from one task to the next, day filled with constant distractions.	Daily warm-up (planning) to start the day and working a minimum of one hour each day technology-free.
Onset of parasympathetic activity delayed during sleep time, very poor recovery.	Onset of parasympathetic activity from midnight, very good recovery.
Difficulty transitioning from work to family life.	Reported much better psychological detachment from work and more present at home.

HRV and alcohol

I can't tell you how many times clients have said, 'But alcohol doesn't affect my performance.' My standard response is, 'Cool. Let's get you wired up on a heart rate variability monitor and see what science says.'.

Two standard drinks (the equivalent of 1.25 glasses of wine) have minimal impact on recovery when measured by HRV, but if you double the alcohol intake, HRV reduces by approximately 10%. Doubling it again reduces HRV by at least 25%.[7] The greatest impact of alcohol on recovery is during sleep. The effects are similar in both men and women, and for physically active and sedentary people, but they are stronger among younger people and for people with lower baseline sleep HR.[8]

Psychological detachment

Psychological detachment means not constantly working or thinking about job-related issues after work. It means leaving the workplace behind – mentally as well as physically. This has become harder as technology has taken over.

Professor Sabine Sonnentag from the University of Mannheim, Germany, investigates how employees can achieve sustainable high performance at work and maintain health and wellbeing at the same time. She highlights the importance of psychological detachment.[9]

In one of her studies, participants who demonstrated a lack of psychological detachment from work in their off time were more prone to exhaustion. We need rituals to detach from work in our down time, especially when demands are high. Proper recovery means better work engagement.[10]

In another study, Sonnentag showed just how critical prioritising recovery is. The subjects' morning recovery level predicted better work engagement that day – and their work engagement itself was predictive of their recovery levels the next day. This shows a reciprocal relationship between recovery and work engagement – or, in MatchFit language, the link between CONNECT and RECHARGE.

Tips for switching off mentally after work

- Exercise or play sport (moving meditation).
- Listen to or play music.
- Do some gardening or cooking.
- Switch off your phone (hide it in a drawer when you get

home if you have to).
- Try a guided meditation/mindfulness exercise.
- Practise diaphragmatic breathing.
- Play, laugh, giggle, have fun.

TRANSITION TIME

Transition Time is the space between shifting from one Performance Moment to the next. This is important at the end of the working day. My children don't really care who I worked with. While they might ask 'how was your day?' what they really should ask is 'did you transition properly from work so you can now be present with me?'

Mobile phones are the biggest killers of this transition. How often do you get home with your mind still at work? I advise clients to relax and hide their mobile phone in a cupboard so they disconnect from work and connect with their tribe.

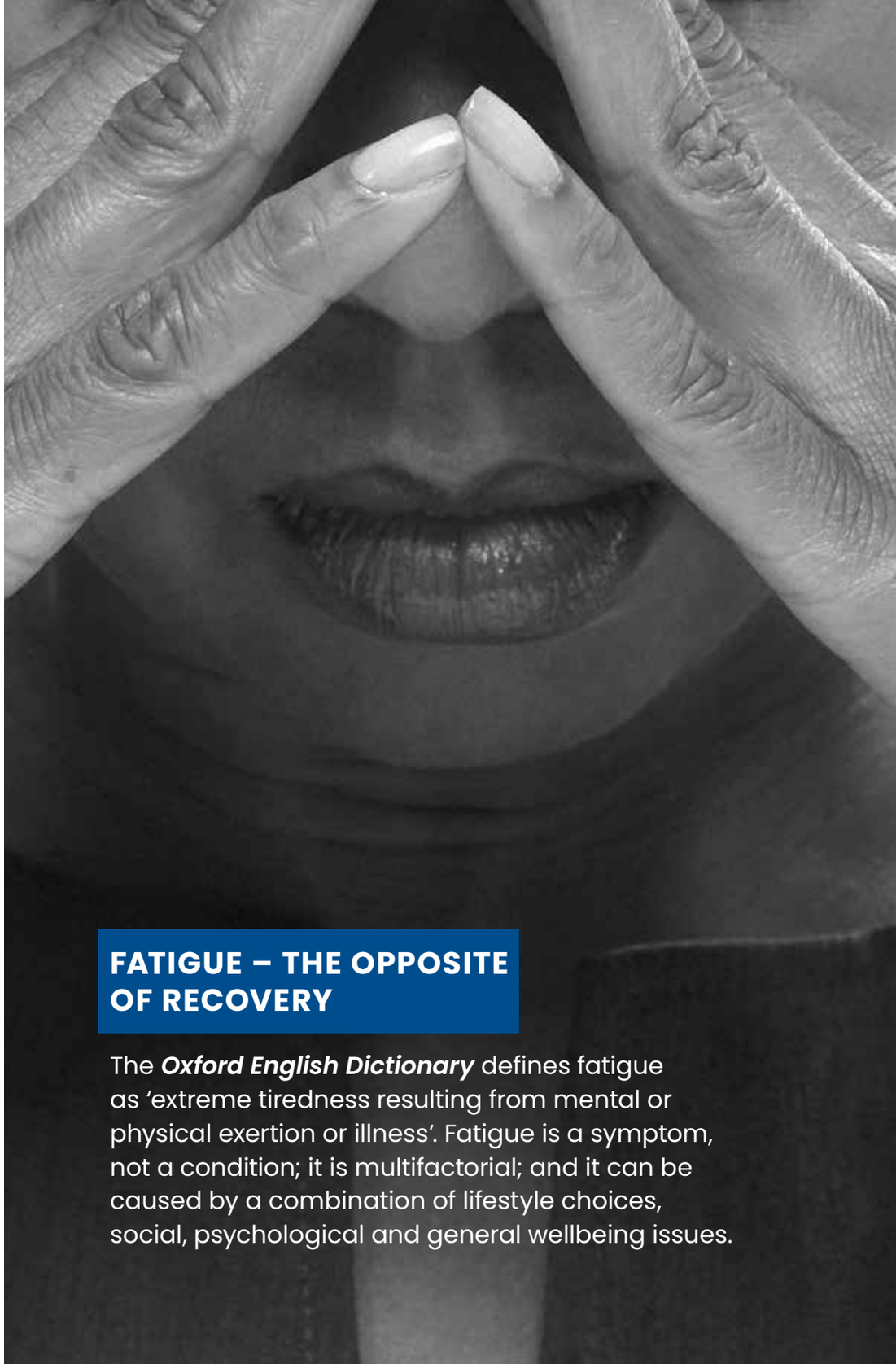
Physical fatigue

Physical fatigue means muscular fatigue or failure, caused by the type, intensity and volume of exercise (or physical labour/activity). It is determined by mitochondrial density, capillarisation, muscle fibre composition, proton accumulation, depletion of glycogen stores in muscle and neuromuscular characteristics. In other words, physical fatigue is a physiological limitation process of energy generation to meet needs.

Mental fatigue

Mental fatigue is defined as 'a psychobiological state caused by prolonged periods of demanding cognitive activity and characterised by subjective feelings of tiredness and lack of energy'.[11] Mental fatigue results in reduced alertness, reaction time and effectiveness – all of which mean poor performance. Mental fatigue can be caused by inadequate sleep, inconsistencies in circadian rhythm (body clock), poor motivation or a number of psycho-social factors.

While physical and mental fatigue are governed by different biological processes, they are interconnected. Mentally fatigued athletes report their perception of effort during exercise to be much higher compared to during their non-mentally-fatigued state.[12]



FATIGUE – THE OPPOSITE OF RECOVERY

The ***Oxford English Dictionary*** defines fatigue as 'extreme tiredness resulting from mental or physical exertion or illness'. Fatigue is a symptom, not a condition; it is multifactorial; and it can be caused by a combination of lifestyle choices, social, psychological and general wellbeing issues.

As we saw in Chapter 4, we need to relax after Performance Moments and conserve energy. Three activities that help in this process are diaphragmatic breathing, mindfulness and changing your brainwave state.

Diaphragmatic breathing

For thousands of years humans have understood breathing has a powerful influence over wellbeing. When prehistoric humans were in danger, their muscles tensed and their breathing became rapid and shallow as they prepared to run or fight. Today, the causes of our stress are different, but our stress response is exactly the same.

When we feel stressed, we activate the sympathetic nervous system. This is a normal and healthy response in the short-term. If we are constantly triggering the SNS throughout the day however, we begin to habitually take shorter, shallower breaths with our upper chest.

Watch the way a baby breathes: the area beneath the chest goes in and out. Most adults breathe from the chest, so less oxygen is taken in with each breath. As a result, the blood is forced to move through the system quickly so that enough oxygen gets to the brain and organs. Higher blood pressure results. Deep breathing can reverse this.

AVERAGE RESPIRATORY RATES

The first sign of life in a newborn baby is breath. The average adult will take in approximately 20,000 breaths a day. The number of breaths we take per minute is called respiratory rate. You can work out your respiratory rate by counting the amount of breaths per minute, or bpm. Compare yourself to the following:

- **Elite athlete during exercise = 60 to 70 bpm**
- **Newborn baby = 44 bpm**
- **Infants = 40 to 60 bpm**
- **Older children = 16 to 25 bpm**
- **Adults = 12 to 20 bpm**
- **Relaxed adults = 8 to 12 bpm**

Nasal breathing

Most adults breathe through their mouth[13], but if you've ever done yoga or meditation you will notice the emphasis on breathing through your nose. There is good reason for this. People who breathe through the mouth are more likely to have sleep disorders and attention deficit hyperactive disorder.[14] Nostril breathing also filters and humidifies the air – meaning it helps prevent colds, flu, allergic reaction and hay fever. And because we tend to breathe at a slower, steadier rate through our nose, we activate our parasympathetic nervous system and balance carbon dioxide levels, resulting in more oxygen-rich blood. Nasal breathing stimulates nitric oxide production, which helps to lower blood pressure, and improve the lungs' oxygen-absorbing capacity.[15] Nitric oxide is also anti-fungal, antiviral and antibacterial.[16]

BENEFITS OF BREATHING

Self-regulation of brain function is physiologically achieved when our heart rate oscillates with breathing, occurring best at six breaths per minute. At this controlled breathing rate, gas exchange in the lungs is most efficient and HRV increases. The respiratory-induced increases in HRV functions via a positive feedback loop between the heart and brain via the central nervous system. The more you slow breathing with long exhalations, the more HRV benefit you get. The benefits of tapping into the body-brain-body connections through controlled slow breathing biofeedback techniques include:

- **Lower blood pressure and increase in quality of life for people with chronic conditions**
- **Reduced depression, anxiety symptoms and headaches**
- **Improved management of daily life hassles**
- **Improved sports performance and reduced performance related stress[17]**

Slow breathing

Breathing practices like pranayama and Buteko follow a similar physiological principle: slowing down the breath reducing carbon dioxide levels and increasing oxygenation which can improve digestion and reduce likelihood of irritable bowel syndrome, asthma, high blood pressure and headaches.[18] [19]

Tinkering with the rate of breath and altering the nervous system response (shifting oxygen and carbon dioxide levels in the body) underlies another popular technique. Dutch adventurer Wim Hof holds several world records for prolonged resistance to cold exposure. Hof attributes his ability to a breathing and meditation technique. The Wim Hof Method involves a combination of meditation, breathing techniques (cyclic hyperventilation followed by breath retention) and immersions in cold water. Some evidence shows that it can lead to an anti-inflammatory response in the body[20] and create a feeling of wellbeing[21].

A healthy mind has an easy breath.

–Svatmarama Hatha Pradipika

MINDFULNESS

Mindfulness is all the rage right now. It's associated with:

- Improved emotional regulation, decreased depressive symptoms, anxiety, and stress, as well as increasing self-compassion.[22]
- Lower avoidance, more coping and better adaptation to stress.[23]
- Enhanced spirituality, post-traumatic growth, vigour and lower fatigue in cancer patients.[24]
- Decreased reactivity, improved patience, and self-acceptance, and enhanced relational qualities.[25]
- Reduced back pain in sufferers and higher quality of life ratings.[26]
- Better cardiovascular health through lower incidence of smoking, more physical activity, and healthier body mass index.[27]
- Greater success in improving attitudes, eating behaviours and losing weight.[28]
- Improved executive functioning and abilities.[29]
- Lower levels of work-related stress, greater job satisfaction and job performance.[30]
- Lower burnout and lower turnover intention.[31]

Here's where being mindful has a positive effect:

Eating

Mindful eating means being aware of the process of eating and noticing and tasting the food you consume. It is about slowing down and savouring food. Mindful eating has been proven to reduce overeating (binge eating) and correlates with better weight management.[32]

Driving

Mindful driving is about directing your full attention to the process of driving and being fully aware of the traffic and surroundings. Try switching off the radio and experience the silence. You can also try 3–5 'in and out' breaths before you turn on the ignition. Being more aware of traffic reduces the risk of accidents (duh – bet you probably knew that one) as well as reducing speeding.[33]

Communication

Mindful communication includes attentive and careful speaking AND listening. This will help you pick up on verbal and non-verbal cues. Studies show it is easier to put yourself in another person's shoes when you slow down and become present. Relationship satisfaction is higher and emotional stress is reduced during discussions and conflicts when people communicate mindfully.[34]

Mornings

Choose an activity like washing your face, having a shower, brushing your teeth or shaving, and focus purely on what you are doing. This provides an opportunity to ease into the day – a bit like a mental warm-up. Our experience shows a 'mindfulness quicky' like this increases the desire and confidence to explore more structured mindfulness throughout the day.

Changing brainwave states

Neurofeedback is a form of biofeedback where we monitor brainwaves with electroencephalography (EEG). The aim is to teach self-regulation of brain function. Physiologically, this is achieved when the heart rate oscillates with breathing, which occurs best at six breaths per minute. At this controlled breathing rate, gas exchange in the lungs is most efficient, and HRV increases as the brainwaves enter a relaxed and quiet state. While researchers are not exactly sure how this works, what they do know is that these respiratory-induced increases in HRV may function via a positive feedback loop between the heart and brain via the central nervous system.[35]

MOVING MEDITATION AND EXTREME SPORTS

What do mountain bikers, snowboarders and rock climbers have in common with meditation gurus?

Dr Arnie Kozak, a mindfulness-based psychology expert, believes 'athletic activities pull you into a natural state of mindfulness. Sport becomes a form of meditation when you engage in it with your full attention'.[36]

Researcher G.E. Brymer showed that extreme sportspeople experience freedom from everyday thoughts. Being involved in extreme sports or a highly skilled activity left no cognitive room for any other thoughts.[37] Whether you're flying down a mountain on a snowboard, running the last kilometre of a marathon or kayaking through a river with a Grade 5 difficulty level (translated as 'scary'), you're so focused that you are practising a form of meditation – *moving meditation.*

Moving meditation is when you are completely aware of your breath and your thoughts are aligned with what your body is doing. You are totally in the moment and fully engaged in the activity – as we saw in Chapter 4, this is being 'in the zone', or 'in flow'.

So the next time you find yourself dreading the thought of sitting still for five minutes to meditate, take a leaf out of the extreme sports handbook. Try something new. Challenge yourself.

Try to incorporate the two different types of moving meditation: extreme sports/movement for a shot of adrenaline and energy to the system, and to help you recharge and freshen the mind; and relaxation activities such as yoga, tai chi or deep breathing, to switch on the parasympathetic nervous system and help the body recover physiologically.

3. LEARNING FROM OTHER CULTURES

I hear so many people complain about corporate travel . . . While travel can be draining, a little planning can turn it into adventure and fun. If it's part of your work or personal life: *look up* and get off your mobile phone. *Wake up* and get out of bed to go for a walk and see the city. *Shake up* your habits and get outside and explore.

Global Recovery Strategies

Let's take a spin around the globe to see how other cultures get the balance right between ON and OFF.

Russia*:** Russians love a trip to the ***banya, or bathhouse. The hot steam clears the skin and fights sickness, and reduces stress and brings people closer together. If you can't make it to a sauna, try having a hot shower or bath while you visualise a calm or peaceful image.

***Thailand*:** Thai massage starts with a breathing meditation, followed by manipulations to relieve tight muscles. Massage can reduce anxiety, lower blood pressure and settle an increased heart rate. It can also reduce stress, anxiety and depression, providing benefits similar to those of psychotherapy[38]

***Switzerland*:** Go for a hike! How good do you feel after a walk in the woods, or flushing your lungs with icy cold mountain air? Exercising outdoors reduces blood pressure and tension, increases self-esteem, improves mood and enhances problem-solving ability and creativity[39]

***Africa*:** *Ngoma* ceremonies, which incorporate drums and dance, are used throughout Africa to help people address 'difficult issues', including chronic and mental illness. The benefits include a reduction in stress and feelings of group support, giving credibility to dance as a therapeutic practice.[40]

***Sweden*:** Since the 1700s, the *fika* has meant taking a break for coffee and a *small* bite to eat. But it's more than that: it's an opportunity to relax, catch up with friends or colleagues and refresh before heading back to work.

***India*:** Yoga originated in the Indus-Sarasvati civilisation more than 5000 years ago. Yoga incorporates mental and spiritual practices with multiple benefits, including reduced tension and anxiety, greater physical strength and flexibility, better posture, higher executive function and better attention, processing speed and accuracy[41]

***China*:** *Qigong* is a collection of coordinated body postures and breathing techniques. The goal is to balance and cultivate your 'life energy'. Breathe with one hand on your lower belly and one hand on your chest. Inhale and fill up your lower abdomen, then move into the ribs. As you exhale, slowly reverse the movement, letting your chest drop down first, then ribs, finally pushing all the breath out of your abdomen. Continue for up to five minutes.

***Italy*:** The Slow Food movement advocates slowing down the pace of life and taking time to enjoy things that give us pleasure – good food with loved ones. It's an antidote to the 'throw it down as quickly as you can' phenomenon of fast food.

***Romania*:** By the Black Sea coast is Lake Techirghiol, famous for its mud baths. The accumulation of salts in the water, due to the lake's connection with the sea, creates a hypersaline environment that makes you feel as relaxed as a pig in mud.

***United States*:** While ice baths have become popular as a recovery technique for elite athletes, members of the Polar Bear Club in Massachusetts have been jumping in icy water since 1903. Cold water helps combat small tears in muscles caused by intense exercise, constricts blood vessels, reduces swelling and flushes waste products out of the system[42]

THE POWER OF RESTORATIVE SLEEP

How did you sleep last night? And the night before that? Did you wake up feeling fresh and energised? Or are you rolling your eyes at the very suggestion?

Sleep is the single most important recovery activity, so it's vital we get it right. You probably don't think much about it. Although you spend just under a third of your life in a slumber state, you just 'do' sleep at the end of each day, falling into bed when you've run out of gas.

Sleep allows the body's cells to repair and rejuvenate. Many of the restorative functions in the body – including muscle growth, tissue repair, protein synthesis, and growth hormone release – occur mostly, or in some cases only, during sleep. Science is continually discovering new pathways activated during sleep, such as the glymphatic system, a waste clearance system in the brain.[43]

Without adequate sleep the body doesn't recover properly, which results in short-term reductions in cognitive processing, memory and skill acquisition, and long-term fatigue and illness. Rather than just 'doing' sleep, the goal I have for you – just like the elite athletes and high performers I work with – is to utilise sleep as a performance weapon.

Motor skills and cognition reduce exponentially with lack of sleep. Cutting just 1–1.5 hours per night over a week-long period will result in as much as 32% reduction in alertness and your ability to perform.[44] Small reductions can result in a 'sleep debt', which can build up quickly. The only way to remedy a sleep debt is with quality, restorative sleep.

SLEEP DEPRIVATION

Sleep deprivation is just a fancy way of saying 'you are not getting enough'! Symptoms include:

- **Constant yawning.**
- **The tendency to doze off when not active for a while (like when watching TV).**
- **Grogginess when waking in the morning.**
- **Sleepy grogginess experienced all day long (sleep inertia).**
- **Poor concentration and mood changes (irritability).**

Lack of sleep has been associated with:

- **Decreases in mood, thinking, concentration, memory, learning, vigilance and reaction times.**
- **Adverse effects on wellbeing, productivity and safety.**
- **Injury and death from road and workplace accidents.**
- **A range of health problems, including hypertension, diabetes, obesity and heart disease.[45]**

Sleep debt

At times it's impossible to get all the sleep we need. Busy periods at work, sickness and stress, travel or a night on the town can easily mean we don't get a full night's rest.

Before I had kids, I remember new parents asking me about sleep. I would say something like, 'Do everything I recommend and it will help you manage sleep with young children.' After going through that phase of life myself, I've changed my response to, 'Try everything you can, but the reality is you might just need to suck it up for five years and come back to me.'

When we consistently fail to get the sleep we need, we fall into *sleep debt*.

Sleeping your way to weight loss

When I tell clients that one of the best ways to burn fat is not exercise or nutrition – but proper deep, restorative sleep each night – they look at me like I'm mad.

Researchers at the University of Chicago allowed a group of healthy young men to have only four hours of sleep a night. After five days, they then assessed their blood glucose. Their levels of grehlin, an appetite-stimulating hormone, were up by 28%, while their leptin levels, a hormone that inhibits hunger, had decreased by 18%. Not surprisingly, they reported a 23% increase in their hunger level, especially for calorie-dense, high-carb foods.[52]

SLEEP FACTS

- **Around 40% of Australian adults experience inadequate sleep. In 2016–17 the total cost of this in Australia was estimated to be $66.3 billion.[46]**
- **Without sufficient restorative sleep, good nutrition and regular exercise, performance declines.[47]**
- **Nineteen hours of wakefulness has been shown to decrease human performance to a similar level as having a blood–alcohol level of 0.08%.[48]**
- **Research shows clear links between loss of sleep and the inability to process emotional information including understanding others' mental states, emotions and feelings.[49]**
- **Getting 30 to 60 minutes of sunlight every morning promotes deeper restorative sleep.[50]**
- **Adequate sleep makes you healthier, mentally more alert, happier, better able to cope with stress. Naturally, you will also perform better during the day.[51]**

The eight-hour myth

The number one question I am asked in relation to sleep is, 'Do I really need eight hours each night?' The answer is, 'Not necessarily.'

Everyone is different, so it's preposterous to say we should all follow exactly the same formula. We need more sleep when we're teenagers and less as we enter our twilight years. The US National Sleep Foundation's expert panel recommends the following for healthy individuals.[53]

Age group	Appropriate amount of sleep
Newborns	14–17 hours
Infants	12–15 hours
Toddlers	11–14 hours
Pre-schoolers	10–13 hours
School-age kids	9–11 hours
Teenagers	8–10 hours
Young adults and adults	7–9 hours
Older adults	7–8 hours

The eight-hour myth has created a society filled with people who feel guilty. From here on, I want you to ditch the eight-hour myth, and instead gain clarity about how much sleep *you* need.

Cycle your way to better sleep

I've started counting sleep cycles, a concept I adapted after reading Nick Littlehales' book *Sleep*.[54] Littlehales has worked with a range of top athletes.

The 'R90 Sleep Recovery Program' means recovery in 90 minutes, the average length of time it takes a person to go through the stages of sleep that constitute a cycle (the first sleep cycle is about 70–90 minutes and later cycles about 90–120 minutes). Rather than take a nightly approach, we should be looking at our sleep on a *weekly* basis. The average person needs approximately 33 to 35 cycles of sleep a week – which works out to four or five lots of 90 minutes a night. But you don't have to feel guilty for one bad night's kip – you can make up for it another day.

The stages of sleep

Sleep is made up of four stages of non-rapid-eye-movement sleep, or slow-wave sleep (SWS), and one stage of rapid-eye-movement (REM) sleep, or dream sleep. Together, these phases usually amount to a 90- to 100-minute cycle. Most of us go through four or five of these each night.

- *Stage One.* The transition between wakefulness and sleep. We only spend around 5% in stage one when we are young and healthy. This is roughly the first 10 minutes when you're falling asleep.
- *Stage Two.* This is the onset of 'true sleep', and we spend between 45% and 55% in this relatively light sleep. It lasts for approximately 15 minutes.
- *Stage Three.* This is also called Delta sleep, when the brainwaves start to slow down. It lasts about 20 minutes.
- *Stage Four.* This is the deepest part of the sleep cycle, when brainwaves slow even further and your body is less aware of environmental changes. It can last between 20 and 70 minutes. We spend around 25% in stages three and four.
- *REM sleep.* The brain is very active in this phase, while the body is generally immoveable, except for twitches. We can spend up to 20% in REM sleep.

In order to have a full night of restorative sleep, we need three to five uninterrupted cycles of SWS and REM sleep. During the latter cycles, we have longer periods of deep sleep; this is when our memory is organised and even strengthened. Interruptions (caused by light or noise, for example) reduce the time we spend in these phases, resulting in poor-quality sleep.

Sleep and your Energy Personality

Most adults need four to five sleep cycles – roughly seven to eight hours of sleep – each night. But *when* you sleep matters just as much as *how* much you get. Understanding your chronotype, or what I call your Energy Personality, can have a big impact on your productivity, sleep, recovery and relationships.

Let's look at the four Energy Personalities, and specific sleep recommendations for each.[55]

- *Gazelle:* Early riser, with peak concentration during the morning. Gazelles need to go bed early (around 9 pm or earlier). They're the people who do the 'phantom' at conferences, disappearing early in the night so they can get to sleep. Gazelles typically rise between 5 and 5.30 am.
- *Bear:* The Bear went to bed late as a child and woke up late. If Mum or Dad tucked them in early, the Bear would grab a flashlight and read for hours. Their peak concentration occurs from late afternoon through to evening. Bears can stay up past midnight, which means that if they're to function properly the next day, they won't be waking up until after 7.30 am, and that doesn't really fit into the typical working day. If you're a Bear, you should aim to be in bed by 11 to 11.30 pm.
- *Tiger:* A hybrid of Gazelles and Bears. Peak concentration occurs in mid to late morning, and late afternoon to early evening. Tigers can burn the candle at both ends, but risk fatigue and burnout. Tigers should aim to be in bed by 10 to 10.30 pm and wake up around 6 am.
- *Dolphin:* So called because dolphins sleep with only half of their brain shut down, with the other half on guard for predators. The Dolphin has a low sleep drive and is a light sleeper. Insomniacs fall into this category. Dolphins often have trouble getting to sleep and can wake up multiple times through the night. Dolphins are usually cautious, introverted, neurotic and intelligent, and prefer to work alone rather than in teams; they generally don't care a lot about fitness either.[56]

Knowing your Energy Personality will help you understand when the best time is for you to go to bed and get up each day.

SLEEP MYTHS

Here are three of the biggest sleep myths.

Myth #1: We get our best sleep just before waking up.

BUSTED! In reality, we cycle through all the stages of sleep every 90 to 100 minutes. We have most of our deep sleep or restorative sleep in the first two cycles of the night, or the first three hours. If our sleep is shortened for some reason, what we miss out on is mostly dream sleep.

Myth #2: One hour of sleep before midnight is equivalent to two hours after.

BUSTED! There is no research to support this. Especially if you have built up a sleep debt, whatever time you go to sleep, even if it's after midnight, you will be able to get quality, restorative sleep.

Myth #3: Cutting back on sleep will improve your productivity.

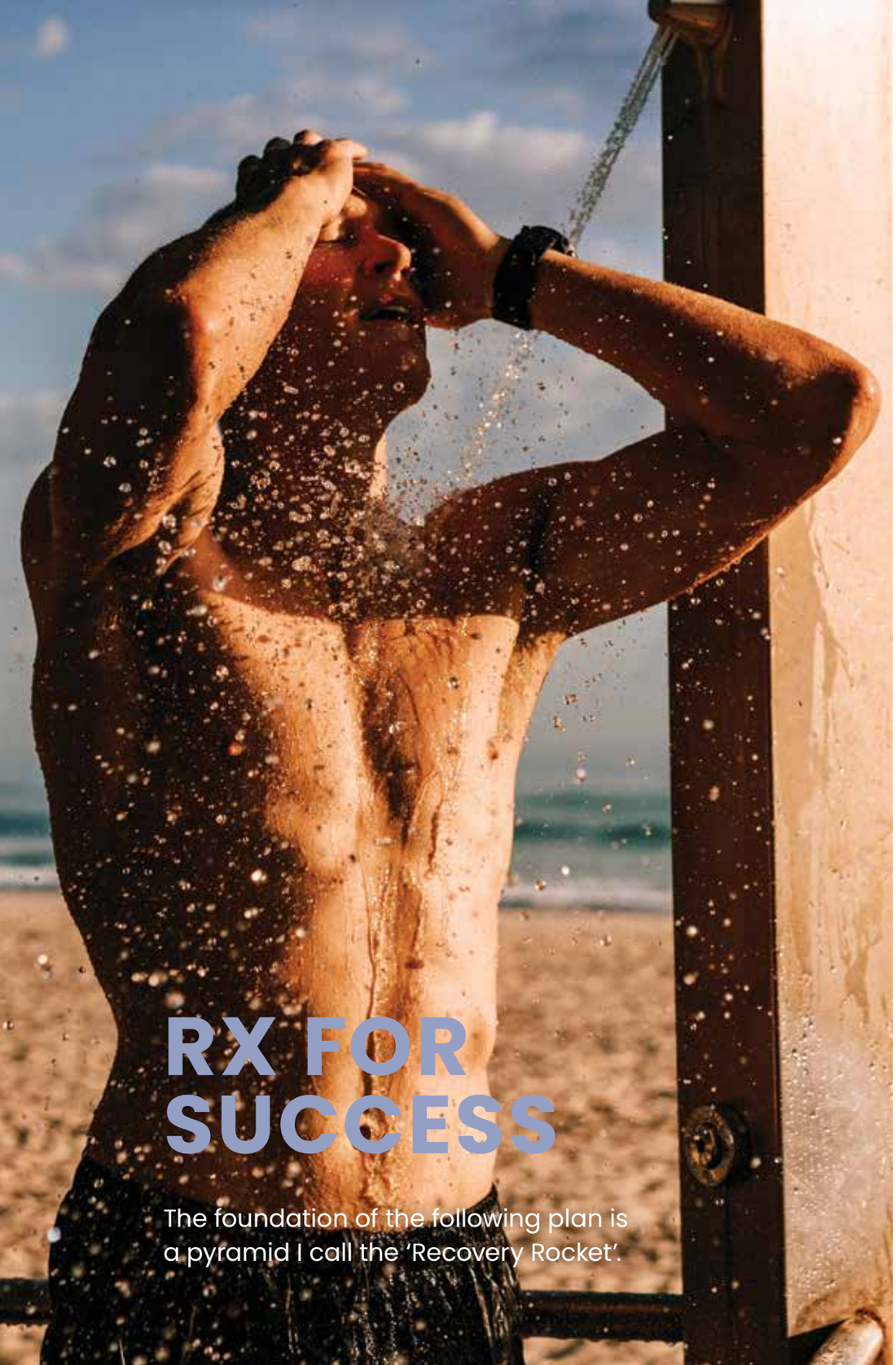
BUSTED! This is just plain wrong, although it's widely believed. Cutting back on sleep, especially over the long-term, will drive your output levels right down.

THE RECOVERY ROCKET

While working with the Australian cricket team during a series against India, fast bowler Brett Lee lacked his usual spark and pace. Turns out, he had travelled to India in the off-season with his manager, which meant that while he should have been having a break, he was busy making corporate appearances, recording songs and building his profile. This was great from a financial perspective, but he was now feeling it.

Team physiotherapist Errol Alcott and I got Brett out in the sun in the morning, filled him up with a good breakfast, followed by a swim and some light stretching. We locked in time away from the game – and time where he was free of business commitments. After each match, his new priority was getting as much rest as he could. It wasn't long before he was slinging the leather at his 150+ km/h speeds again, much to the dismay of the opposition!

My work with Brett and other elite athletes led me to develop a structured annual recovery plan. Here's what it looks like:



RX FOR SUCCESS

The foundation of the following plan is a pyramid I call the 'Recovery Rocket'.

Let's start at the top and work our way down the pyramid.

- You should take *one* proper holiday each year (an off-season).
- Aim to get *three* mini-breaks (preferably one mini-break every three months). At the very least, have a day off (or a 'mental health day') every quarter.
- For *30* weeks of the year, aim to get 100 recovery points. (We'll discuss these shortly.)
- On *300* nights of the year, aim to get a restorative night's sleep, where you wake up feeling refreshed and recharged.
- And for *365* days each year (or 366 days if it's a leap year), go slow for at least 10 to 15 minutes.

Let's explore these steps in more detail.

One holiday

Stockpiling annual leave is a national sport in Australia and each of us stash away an average of 16 days each year. That's more than three working weeks per person.[57]

While it may seem obvious we should take regular holidays, there is strong science backing its benefits. Even just one break improves our wellbeing and happiness, both before and after the holiday.[58] It's imperative for elite athletes to take regular time out to recover and recharge. It not only keeps them in the sport longer,

but decreases the risk of injury and burnout. So why do we try to play a five-day 'corporate' Test match *every* week of the year? And then add a couple of grand finals on Saturday and Sunday?

There's another seemingly obvious thing to remember. Holiday time or leisure time is *time away from work*. It's crucial to practise psychological detachment and stay off the mobile phone and avoid emails. Not only will using your mobile get you thinking about work again, but research shows it also increases brain glucose metabolism, a marker of brain activity, which is not what you want if you're trying to switch off.[59] Get organised before you go away so that other people can manage projects that might need attention.

Three mini-breaks

In many football codes, having a weekend off – commonly referred to as a bye – not only freshens the players up mentally, but also leads to a decrease in soft-tissue injuries. A mini-break for workers in the corporate world does exactly the same thing.

I can already hear parents complaining it's impossible to sneak away for a mini-break. But where there's a will, there's a way. Just ask family and friends to babysit.

Here are a few suggestions:

- Go camping by the coast.
- Head to the snow.
- Book a hotel near where you live.
- Have a 'staycation' and explore what the tourists do when they visit your area.
- Buy a new book and housesit for a friend.
- Book an old-style B&B in the country (with huge breakfasts!).
- Go to the zoo.
- Hire a houseboat.
- Tour a few wineries.
- Go to a day spa.

If you can't afford a three-day mini break every quarter, at the very least aim to take a 'mental health day' in that period. That's a day when you can do whatever you want – except work!

Sticking to an Annual Recovery Plan might just be the missing piece of the puzzle that helps you sustain performance and retake control of your life.

Thirty weeks with 100 recovery points

David Misson, former high-performance manager at the Sydney Swans, introduced a program where players had to accumulate 100 'recovery points' each week to make sure they were ready for the next match. Each activity – yoga, stretching, massage, and so on – was worth a certain number of points. This activity was so successful we adapted a similar approach for NSW and Australian cricket players.

My 'corporate recovery toolbox' combines activities for Parasympathetic activation and psychological detachment. For 30 weeks of the year, I want you to actively focus on recovering. Your goal is to hit 100 points each week. Here's the list of activities: Add up both columns to get your total score.

Parasympathetic Activation		Psychological Detachment	
Yoga	40	Moving Meditation (Relaxing swim, kayak/paddle/surf, easy cycle)	25
Tai Chi/Qigong/Pilates/Stretch	30	Nature Walk	25
Massage	30	Park with kids/friends	25
Flotation Tank	30	Fishing	25
Relaxing Bath	20	Gardening	25
Sauna/Steam/Hot Tub	20	Playing with pet/animals	25
Power Nap	15	Painting/Creative Writing	25
Listening to Relaxing Music	15	Play (Board games, cards, music, dance, adult play**)	25
Meditation 10 mins+	15	Cooking	20
Diaphragmatic Bething 5 mins+	15	Reading Book	20
TOTAL	_____	TOTAL	_____

*If you have a mobile phone or electronic device while doing any of these activities: no points!
** If you require more detail, read PLAY chapter

Note: These are examples and not intended to be all inclusive.

LOCK UP YOUR SMARTPHONE

One of my corporate clients took a break with his family in Fiji. We caught up for a coaching session a week after he returned, and he walked into my clinic with a smile on his face. I asked how his holiday was.

'Andrew, the hotel was awesome – it had full wifi connectivity and I got a heap of work done!'

I could have given him an uppercut, but that would contravene the coaching psychology code of ethics . . . Instead, I told him that for an intelligent man, he really did some dumb things. He told me his wife had said something similar.

On his next holiday, he left his phone with the hotel's reception staff, and only checked it each evening. The first two days he had withdrawal symptoms, but by the end of the break his attitude had changed – he didn't want to check it at all.

That's what we mean by psychological detachment.

You'll notice there are no points for grinding out a 10-kilometre run, smashing PBs in the pool or lifting heavy weights. You need to give both your body and your mind the chance to rest. If you use a mobile phone or other electronic device while doing an activity, you don't get the points!

If you're a fitness fanatic, aim to be doing these tasks as well as keeping fit – try swapping one running session for a leisurely walk or a stretching class. It'll give your body a chance to recover, and free up valuable time for you to think.

Three hundred nights of quality sleep

Your goal here is to log 300 nights of quality, restorative sleep each year – that's six nights a week.

You need to allocate adequate time for sleep and your sleep should be deep and uninterrupted[60]. To achieve this:

- *Have a regular sleeping time.* The human body loves regularity. Keep your bedtime and rising time as similar as possible each day. Stick with it and it will get easier.
- *Draw the curtains.* Sometimes interruptions are out of your control, but ensuring your room is sufficiently dark will help you get to sleep – and get back to sleep if you do wake up.
- *Get some daylight.* Serotonin, a brain chemical and neurotransmitter that sends signals between nerve cells, is associated with mood elevation and is synthesised during the day from sunlight. At night it makes melatonin, a brain hormone which induces sleep, so getting good amounts of natural daylight will promote better restorative sleep.
- *Drink a glass of milk.* Milk contains an amino acid called tryptophan, a precursor to serotonin, which in turn is converted to melatonin. Grandma was right when she told you to have a glass of warm milk 30 minutes before you go to bed.

Having a bath an hour before bed, using earplugs to block out

THE POWER OF NAPPING

After years of 'travel training' I can fall asleep on a plane before we've even taken off. Napping is awesome for mood regulation, energy and wellbeing. The benefits include better heart function, hormonal maintenance and cell repair. It can also help recharge the brain, resulting in greater alertness, improved memory retention and creative insight.

It can make you a faster typist, better dancer and improve motor skills and coordination. Effects on mental health include improved mood, decreased stress and greater psychological balance. Power naps increase memory by almost 20% and improve performance on repetitive perceptual and cognitive tasks.[61]

But there are a few caveats:

- **Keep naps between 20 and 30 minutes, or go closer to 90 minutes, to avoid sleep inertia.[62]**
- **Nap in a quiet, well-ventilated room.**
- **Clear your mind, breathe slowly and deeply to help switch off and relax.**
- **If you are going to nap at work, make sure you have permission!**

excess noise, and ensuring your bedroom is at a comfortable temperature can also help. The most appropriate sleeping temperature is between 20 and 24 degrees Celsius.

Each morning count the number of 90-minute cycles you had the night before, and add them up at the end of the week. The key to avoiding sleep debt is to measure and balance your sleep across a longer period of time. Aim to get 30 to 35 sleep cycles each week – an average of four or five cycles per night. If you miss out on some sleep one night, try to make up for it later in the week – by going to bed a bit earlier, for example, or by taking an extra nap during the day. After following this process for a few weeks you'll have a good sense of how much sleep you need to function at your best.

365 days of *hapa, hapa*

Each day I want you to spend at least 10 to 15 minutes taking it easy. Going slow is transition time, where you give your conscious mind permission to change gears and engage your subconscious. Some people pray, some meditate, some do diaphragmatic breathing, while others just sit and practise mindfulness. Do whatever works for you.

Try going slow at the end of a busy day and remember to factor in Transition Time. It's easy to come home still thinking about the deals you've crunched or the problems that have arisen. Slowing down before you get home will help you be more present.

Hapa, hapa activities include:

- Walking at a gentle pace.
- Having a relaxing bath.
- Listening to quiet music.
- Meditating.
- Sitting still with your eyes closed.
- Gentle stretching.
- Floating in the ocean.
- Breathing exercises.

MICRO-DOSES OF MINDFULNESS

While it's ideal to put aside 15 to 20 minutes each day to practise mindfulness (Mf), this is not realistic for most people. Instead, look at ways you can be present in everyday moments; all you need is 30 seconds to a couple of minutes. I call these 'Mf micro-doses'.

- ***Diaphragmatic breathing*: Take a slow, deep breath and focus on the air moving in and out of your lungs. Begin by breathing in through your nostrils. Count to five, silently saying the word 'in', and let your lower abdomen fill with air. Then count to five, silently saying the word 'out', as you let the air escape through pursed lips. With practice, you will be able to count slowly to 10 or higher. You can increase your relaxation if you imagine breathing in ocean air, the scent of flowers or forest air.**
- ***Engage your senses*: Shift your attention out of your head and focus on something around you. The sound of the clock ticking on the wall, the pot plant swaying gently in the corner of the room, the warm feeling of the sun on your skin. As thoughts come into your mind, realise this is normal; acknowledge your thoughts, then return to focus on your breathing.**
- ***Integrate into normal activities*: Simply slow down and do things differently. You can have a burst of mindfulness while catching the lift between floors, brushing your teeth, catching the bus, sitting in a meeting or waiting in line to renew your licence. The key is to slow down, focus on the task and be *present*.**

RECHARGE TAKEOUT POINTS

1. Recharging mixes parasympathetic activation (relaxing) and psychological detachment (switching off mentally). It's vital for your physical and mental wellbeing.
2. Follow the guidelines of the Recovery Rocket and allocate time to mapping out your own Annual Recovery Plan.
3. Understand the value of quality sleep and make it a priority.
4. Sort out your sleep routine and allow yourself time to 'wind down' at night.
5. Practise and persevere. Developing a good recovery routine can take a few months.