Improving Energy and Vitality

What is Fatigue?

Fatigue refers to an ongoing lack of energy or tiredness, but it is more than *just* feeling tired. Often precipitated by periods of physical, mental, or emotional stress, fatigue can rob us of our enthusiasm for life, and interferes with our ability to carry out our day-to-day activities.

Meeting our objectives at work, taking care of our families, and maintaining our relationships, compounded by the expectations we place upon ourselves, can have us burning the candle at both ends and feeling exhausted.

While there are some things that are beyond our control, like age, gender, and genetics, there are several things we can do to tip the energy scales back in our favour. These include diet, exercise, sleep, and how we choose to *respond* to stress, because let's face, it is unavoidable. To offset the effects of our busy lifestyles and reduce fatigue, it is important to prioritise self-care practices, good habits, and develop balanced routines.

Let's take a deeper look at what might be contributing to your fatigue and how you can offset it.

How do we make energy?

Mitochondria power our cells and bodies by turning the oxygen we breathe and the food we eat into energy; a molecule known as adenosine triphosphate (ATP). This occurs through several complex processes that involve the citric acid cycle and the electron transport chain. These processes require various nutrients to help power them (e.g. B vitamins, magnesium, iron, vitamin C, coenzyme Q10 [CoQ10]), which helps explain why nutrient deficiencies can leave you feeling fatigued.[1,2]

Why am I so tired?

If you find yourself feeling tired all the time, consider the following and how these might be impacting you:

Stress and overwork

Overextending yourself physically, mentally, emotionally, and socially over the course of weeks, months, or years can have hormonal consequences within the body. Single parents,[3] night shift workers,[4] on-call workers,[5] fly-in, fly-out (FIFO)/ drive-in, drive-out (DIDO) commuters,[6] medical professionals,[7] and emergency service personnel[8,9] are among those most susceptible to the effects of stress, overwork, and fatigue due to their busy and often unpredictable routines.

The Science of Stress

When we perceive stress or pressure, the emotional processing area of the brain (the amygdala) interprets what we see and hear and instructs the messenger system of the body to release the hormones adrenaline and cortisol from our adrenal glands. This produces physiological changes such as a pounding heart, fast breathing, and sweaty palms, and is designed to prime the body to cope with the impending stress. This is known as the 'fight or flight' response or the 'stress response' and is governed by the hypothalamic-pituitary-adrenal (HPA) axis.[10] When the perceived source of stress is resolved quickly, adrenaline is no longer produced and cortisol levels return to a normal, steady state. However, when our stress persists, the HPA axis remains activated and cortisol levels remain high. The effects of prolonged high levels of cortisol can affect our mood (i.e. anxiety and depression) by reducing the amount of available serotonin, a neurotransmitter responsible for feelings associated with happiness.[11,12] Under conditions of acute stress, cortisol mobilises glucose from storage to supply muscles with more energy to 'fight' or 'flee' from stress. However, chronically high levels of stress/cortisol persistently elevate blood sugar levels, which negatively affect blood sugar balance and energy metabolism by promoting insulin resistance and obesity.[13,14] In turn, this increases the likelihood of fatigue/exhaustion,[15] as well as the risk of developing type 2 diabetes mellitus (T2DM)[16] and cardiovascular disease (CVD).[17]

Poor sleep quality and sleep disorders

An irregular sleep schedule, anxiety and depression, pain, sleep apnoea, and restless leg syndrome can all interfere with a good night's rest and leave you feeling tired throughout the day. Shift workers are especially prone to insomnia due to unpredictable sleep-wake routines, leading to fatigue from insufficient sleep.[18]

Poor diet

An inadequate supply of protein, carbohydrates, and fats, and/or a diet full of packaged foods high in sodium, saturated fat, trans-fat, and added sugar[19] can leave you feeling lethargic, exhausted, and depleted of the nutrients that you require for nourishment and energy. Iron, for example, is needed to transport oxygen from the lungs to the rest of the body via the bloodstream. Without enough iron, your body cannot produce adequate amounts of haemoglobin, the substance in red blood cells that carries oxygen to your organs, which leaves you feeling tired.[20]

Dehydration

Water is essential for life. It is needed for digestion, to absorb nutrients, get rid of waste products, and to regulate body temperature.[21] When you're dehydrated, your ability to concentrate and stay alert can be impaired, leading to tiredness, fatigue, and poor performance at work.[22,23]

Stimulants

Many people rely and depend on caffeine and sugar to get them through the day, often reaching for a quick energy boost in the form of coffee, energy drinks, or chocolate.[24] Stimulants make you feel alert and awake at the expense of overworking your adrenal glands by forcing them to secrete more cortisol.[25] This hormonal disruption can leave you feeling 'wired but tired' come night-time, impacting your ability to sleep.[26]

Alcohol

Frequent or heavy alcohol consumption can lead to difficulty concentrating, drowsiness, light-headedness, and fatigue by inhibiting the liver's ability to release sugar for energy, which results in low blood sugar levels.[27] Diabetics are particularly at risk from the consequences of heavy drinking, leading to poor blood sugar control and complications like nerve and eye damage.[28] Excessive alcohol consumption also causes hangovers; reduces rapid eye movement (REM) sleep, important for consolidating what we learn and processing memories;[29,30] and depletes B vitamins required for energy metabolism, due to its negative impact on absorption, storage, and urinary elimination of these nutrients,[31] all of which worsen fatigue.

Smoking

Fatigue and depression are more common among smokers than non-smokers.[32,33] Nicotine, present in tobacco cigarettes, is both a stimulant and sedative to the nervous system; at first it provides an addictive hit of energy, but then leaves you tired and craving more as it wears off.[34,35]

Digital fatigue

Excessive or concurrent use of multiple digital screens can be exhausting. More and more of us are struggling to manage 'digital fatigue'. With many people now working from home offices there has been a significant blurring of lines between work life and home life. The effects of too much screentime are not limited to eyestrain;[36] feeling worn out, experiencing muscle tension, difficulty concentrating, and a general sense of overwhelm are all symptoms of 'digital fatigue'.[37,38] Research also shows that excessive exposure to blue light from electronic devices at night leads to melatonin suppression and subsequent sleep disturbances,[39,40] adding to daytime fatigue.

Medications

Certain medications list drowsiness and/or fatigue as a side effect of use. This list includes antihistamines/allergy medications,[41] blood pressure medications (beta-blockers),[42] muscle relaxants,[43] antidepressants,[44] and medications prescribed to treat anxiety and/or insomnia (benzodiazepines).[45] Discuss with your healthcare practitioner whether this might be a contributing factor to your fatigue.

Underlying health conditions

Deficiencies in blood cells, hormonal imbalances, poor energy metabolism, and immune dysfunction often affect energy levels and wellbeing. Conditions such as depression,[46] anaemia,[47] diabetes,[48] hypothyroidism,[49] chronic infections,[50] allergies,[51] autoimmune conditions,[52,53] and cancer[54] are commonly associated with fatigue. Your healthcare practitioner will assist you with individual strategies if this is contributing to your fatigue.

Weight

Obesity increases the risk of fatigue and tiredness through chronic low-grade inflammation and increased HPA axis activity.[55] Additionally, fat cells, particularly from abdominal fat, produce immune compounds called cytokines that promote fatigue and sleepiness, among other effects.[56,57]

Sedentary living

Living a sedentary lifestyle often creates a vicious cycle of doing less, coupled with a loss of motivation, vitality, and capacity to move more. Insufficient physical activity has been associated with increased reports of feeling "tired" or "exhausted",[58] where an impaired response to the hormone insulin, known as insulin resistance, and the metabolic effects of abdominal fat are thought to play a role.[59]

How Can I Get More Energy?

Working with fatigue involves making small steps to better nurture, nourish, and care for yourself. Feeling overwh
only adds to this. Choose one or two manageable suggestions to start with and move forward from there. Imple
Make your goals achievable and sustainable to set yourself up for long-term success.

Fortunately, there are ways you can manage fatigue for better quality of life. Strategies that can help you cultiva

01
Making healthy food choices

02
Befriending exercise

03
Good sleep hygiene

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helmed often goes together with feeling exhausted and taking on too much
ment and prioritise these changes with the guidance of your practitioner.

te more energy and vitality to start living life to the fullest involve:

Choose one or two manageable suggestions

09 Being mindful

10 Doing something fun

11 Spending some time with nature

12 Reducing digital fatigue

13 Avoiding stimulants

14 Dialling down the drinking

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Healthy Food Choices

- **Blood sugar 101:** Blood sugar regulation involves two main hormones: insulin and glucagon. Insulin helps your cells absorb sugar for energy, which reduces the amount of sugar in the bloodstream. When blood sugar levels get too low, the pancreas releases glucagon, which instructs the liver to release stored glucose, causing blood sugar to rise again.[60,61] While the body strives to maintain a balance, dietary choices such as consuming larger amounts of refined sugars[62] and/or caffeine[63] spike blood sugar levels and increase insulin resistance over time. This means that glucose cannot enter the cells easily, building up in the bloodstream, leading to excess abdominal fat, type 2 diabetes, high cholesterol, high blood pressure, and cardiovascular disease when left unchecked.[64,65]
- To help you understand the impact of different foods on your blood sugar levels, you can look up their glycaemic index (GI). This is a scale that ranks carbohydrate-containing foods based on how slowly or quickly they are digested and increase blood sugar levels.[66] Adequate carbohydrate intake from complex carbohydrate (lower GI) sources of food, such as sweet potatoes, oats, or rice provides your body with sustainable energy and should make up the bulk of your intake. Simple carbohydrates from sugary beverages and sweets (higher GI) should be avoided as they provide a quick burst of energy followed by a slump in energy as your blood sugar levels come crashing down.[67]
- Routine mealtimes throughout the day also help to stabilise blood sugar levels for consistent energy throughout the day. Also try to avoid skipping meals for this very reason.[68,69]
- Higher intakes of anti-inflammatory omega-3 fatty acids (e.g. fish, seafood, flaxseeds/linseeds, chia seeds, and walnuts) have been linked to significant reductions in fatigue.[70,71] Healthy fats from foods high in unsaturated fats (e.g. avocadoes, olive oil, pumpkin seeds, sesame seeds, Brazil nuts, pecans, etc.) have also been shown to promote sleep.[72,73]
- Tryptophan, an amino acid present in proteins, can help improve your mood and sleep quality by increasing the neurotransmitters serotonin and melatonin, respectively. Good sources of tryptophan include poultry (turkey and chicken), beef, salmon, dairy products (e.g. milk, cheese, yoghurt, etc.), eggs, soybeans, and other legumes.[74,75]
- Key micronutrients and phytonutrients that help alleviate fatigue are explored in Table 1.

Table 1. Micronutrients and Phytonutrients for Fatigue[76-92]

Nutrient	How this nutrient helps support energy production and reduce fatigue	Food sources	
B group vitamins	B vitamins (particularly B1, B2, B3, and B5) are essential for converting the food we eat (carbohydrates, amino acids, and fatty acids) into energy that our cells can use via the citric acid cycle. The demand for B vitamins also increases under stress and depletion of these vitamins levels can leave you feeling fatigued. Vitamin B6 plays an important role in the production of the neurotransmitters serotonin and melatonin, which are involved in mood and the sleep cycle, respectively.	Brewer's yeast and nutritional yeast Dairy products Eggs Fish and seafood Fortified cereals	Legumes Meats Poultry Spinach Sunflower seeds
Magnesium	Magnesium is involved in over 300 reactions in the body, particularly those involving the metabolism of carbohydrates. Chronic physical or mental stress depletes the body of magnesium. Under stress, magnesium is lost via the urine and low magnesium levels exacerbate sensitivity to the effects of stress, leading to a vicious cycle of magnesium depletion and heightened stress.	Almonds Avocados Bananas Brazil nuts Buckwheat Cashews Chia seeds Dark chocolate	Fish Legumes Oats Pumpkin seeds/ pepitas Quinoa Spinach Tofu
Iron	As described previously, iron is essential to the structure of haemoglobin and the delivery of oxygen to tissues. It is also involved in the electron transport chain and is necessary for creating ATP energy. Iron also affects the synthesis and signalling of neurotransmitters.	Broccoli Dark chocolate Fish and seafood Legumes Meat	Poultry Pumpkin seeds Quinoa Spinach Tofu
Vitamin C	Vitamin C is essential for the synthesis of carnitine, a compound that supports energy metabolism by transporting fatty acids into the mitochondria. Adrenal glands are also rich in vitamin C. Increased vitamin C secretion plays an important role in the stress response where it acts to reduce the effects of adrenaline and cortisol. However, it is important to understand that a high intake of vitamin C does not eliminate stress, but instead regulates our response to stressful events at the time.	Acerola cherries Blackcurrants Broccoli Brussels sprouts Capsicum Chili peppers Citrus fruit Guavas	Kakadu plums Kale Kiwifruit Papayas Rosehips Snow peas Strawberries Tomatoes
CoQ10	CoQ10 plays a key role in cellular energy supply within the citric acid cycle and the electron transport chain. It also acts as an antioxidant, protecting the mitochondria against free radical damage, keeping them healthy, so they can produce energy.	Fish	Meat
Resveratrol	Resveratrol is a phytochemical with potent antioxidant properties, including protective effects to mitochondria. As such, it promotes healthy mitochondrial function, which ensures healthy energy production.	Blueberries Cacao	Grapes Red wine

Befriend Exercise

Exercise enhances your overall physical and mental wellbeing.[93,94] It helps to relieve stress and improve your mood by triggering the release of 'feel good' hormones called endorphins.[95]

It also greatly assists in the prevention and management of T2DM[96,97] and promotes cardiovascular health.[98] Aim for about 20 to 30 minutes each day of aerobic physical activity (e.g. walking, jogging, or swimming) and include strength/resistance training at least 2 days per week.[99] Start by finding something you enjoy doing, and easing in at an achievable pace and duration. This is the key to reaping the long-term benefits and feeling more energised every day by living an active lifestyle.

Aim for about 20 to 30 minutes each day

Good Sleep Hygiene

Optimising your bedtime routine will help you unwind and improve your sleep quality.[100] Choose areas from the list below to start with and slowly integrate them into a new routine.

- Prioritise your sleep by setting and sticking to a regular bedtime (even on weekends) to promote rest and rejuvenation.
- As soon as you wake up spend 20 minutes in the morning sunlight (without sunglasses) and at dusk spend another 20 minutes outside watching the sunset. This establishes a good sleep-wake cycle upon rising and retiring.[101]
- Avoid eating late at night (i.e. dinner or dessert) to optimise your internal body clock and prevent blood sugar dysregulation prior to bedtime.[102,103]
- Write yourself a to-do list for tomorrow to set your stresses asides and clear your head.
- Drink a cup of calming tea in the evening that contains relaxing ingredients like Chamomile, Valerian root, Lavender, Lemon Balm, and/or Passionflower.[104]
- Set an alarm, then put your mobile phone and other electronic devices away on Do Not Disturb mode to unplug. Try to avoid digital screens for 2 hours before bed.
- Read a book, listen to soothing music, or do some gratitude journaling instead of watching the next episode in your TV series until you start to feel sleepy.
- Dim the lights. Use soft, warm lights in the evening, especially candles where practical.
- Enjoy a warm bath before bed. A warm shower works well too to help you fall asleep sooner.[105]
- Use an aromatherapy diffuser in your bedroom with relaxing essential oils, like lavender or Roman chamomile.[106]
- Do some gentle stretches, yoga, or meditation with your eyes closed to soothe away stress, tension, and anxiety.
- Draw the blinds and turn off all lights. Sleep in absolute darkness and quietness. If needed, use an eye mask and earplugs to block out light and noise.
- Keep the temperature comfortably cool, 18 degrees Celsius is optimal.[107]

A Note on Napping: If you need to take a brief nap to recharge and refresh, 10 minutes is considered optimal. This length of time allows you to catch a quick rest without feeling excessively groggy or fatigued after waking. The time of day is also important for napping. Most sleep experts recommend napping no later than 2 pm to avoid disrupting your nocturnal sleep cycle.[108,109]

Review Your Work-Life Balance

- First, identify where you are currently spending the most amount of time and energy (e.g. work, study, commuting, parenting, household chores, social events, personal commitments, leisure/recreational activities, procrastinating on social media, etc.).
- Second, reflect on which of these are most important to you. Reprioritise the important things in life where you can (i.e. your health and wellness, 'me time', healthy family relationships/friendships, career, etc.).
- Third, consider achievable changes you can make to reduce your workload and amend your busy schedule (e.g. talk to your manager at work about adjusting your work roster/shifts, or discuss job sharing or part-time options; look at various options for child minding to assist e.g. (friends, family, au pair, after school care, nanny); hire a cleaner to help manage your to-do list at home. Everyone has their limits. Aim to live a sustainable lifestyle without pushing yourself too hard by trying to do everything all at once on your own.
- Next, set healthy boundaries and learn to say no when you need some down time. This is an important step in taking charge of your health to create the time and space needed to make dietary changes, exercise, rest, sleep, and connect with others in meaningful ways. This will assist you in gaining more energy and bringing you happiness.
- Lastly, experiment with finding a routine that works best for you. Allow yourself enough time to rest and recover your energy, especially after exhausting work or physical tasks.

For support and guidance through this process, consult a counsellor, or psychologist for professional help.

Connect With Your Friends and Family

Getting the balance right between 'me time' and your social schedule means avoiding overcommitting yourself (out of obligation) to friends and family.

'Me time' doesn't have to be any more glamorous than 30 to 60 minutes of quiet time alone with a good book and a cup of tea. Catching up for lunch or dinner to chat and laugh with loved ones can be good for the soul too.

Identify Your Support Network

Don't be afraid to ask for help.

Other members of your household may be able to take on some of your responsibilities to lighten the load. Family and close friends may also be able to lend a hand minding the kids while you take a break.

Manage Your Stress

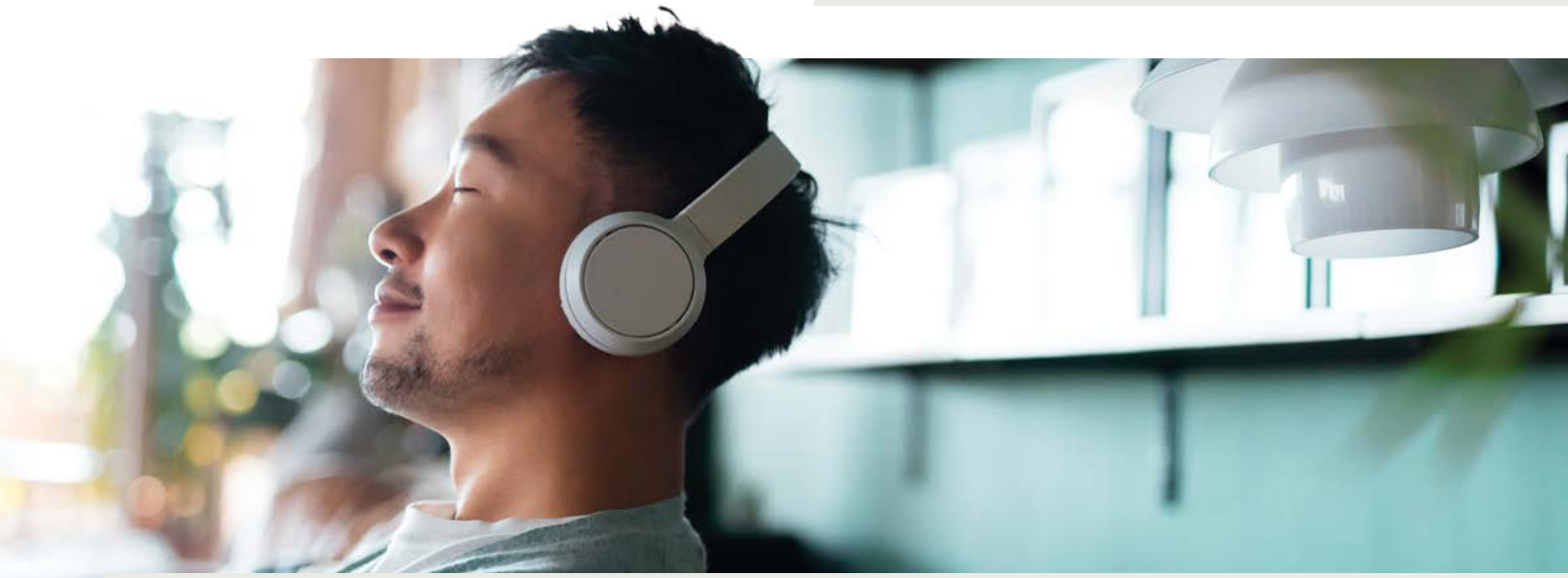
Formulating suitable stress management strategies with the help of a counsellor or psychologist can often provide the foundation to better overall wellbeing, inner strength, resilience, and vitality.

Professional help interventions such as cognitive behavioural therapy (CBT) can be life changing for those suffering from anxiety and/or depression; overcoming unhealthy addictions; going through relationship issues or major life transitions; and facing challenging life circumstances and hardship.[113] Feeling heard and truly listened to in a setting free from judgment can help relieve stress and provide you with personalised advice on how to make coping more manageable; make sense of difficult feelings and emotions (e.g. grief, loss, guilt, shame, hopelessness, loneliness, hurt, frustration, anger, sadness, confusion, etc.); *respond* rather than *react* to stressful situations; and make changes for better health.

Pamper Yourself With a Massage

Indulge and book a massage or give yourself one. Massages relax your muscles, relieve stress, and boost your energy.

For self-massage, start by finding some tight spots of tension and use your fingers, knuckles, or tools (e.g. foam rollers and massage balls) to press firmly into them to relieve trigger points or muscle 'knots'. Repeat for 3 to 5 minutes, ideally as often as 5 to 6 times per day.



Be Mindful

Listen to your body and take a rest when you need to. Why not...

- Try a guided mindfulness meditation such as non-sleep deep rest (NSDR)/yoga nidra[110] or deep breathing practices (e.g. diaphragmatic breathing/'belly breathing') for as little as 15 to 30 minutes each day.[111] These practices have been shown to reduce anxiety, depression, pain, stress, and improve quality of life.[112]
- Try taking time out each day to contemplate and check in with your thoughts and emotions, whether it be during a walk or journaling. Implement a daily mindfulness practice to process what you are thinking about and feeling. Listen in to the tone of your self-talk. Are you expressing acceptance, love, and appreciation for what you have to be grateful for, or are you weighed down with frustration, worries, and negativity? Changing the way you think comes from changing what you repeatedly expend energy dwelling on.

Do Something Fun

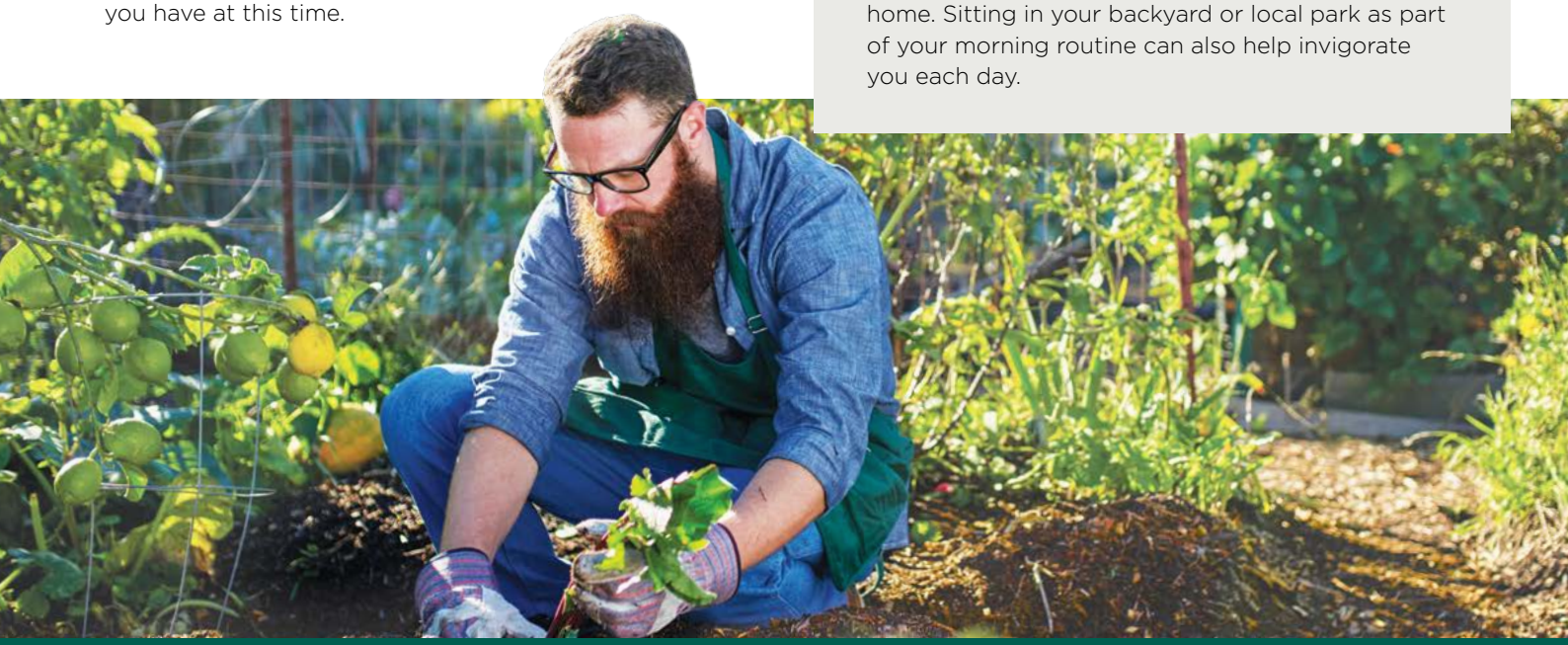
When you are feeling a little more energised, think about making some time for play to brighten your mood and recharge yourself. Do what makes you happy and brings you joy.

Discover something that motivates you to get out of bed each morning. Begin by taking 10 minutes each day to create the time and space to build a healthy stress-relieving routine. Start small when it comes to exploring new hobbies. A short walk in the park or down the street is a good place to start. Perhaps you might then like to try creative arts to relax like painting, drawing, handicraft, playing an instrument, or dancing; or something more adventurous like hiking, bike riding, or surfing (when time and energy permits). Reading, baking, and gardening are simple pleasures you can enjoy in the comfort of your own home. Again, start slowly, pick something you have been wanting to do for a while that matches the energy you have at this time.

Spend Some Time With Nature

When was the last time you visited a nearby forest, river, beach, or even your local nature reserve/park to enjoy some time near a body of water or out amongst the trees?

Taking a 'nature pill' for 20 to 30 minutes or more, at least 3 times a week, has been shown to reduces stress.[114] If feasible, plan a camping trip/ holiday for an extended break away from the daily grind, or simply take time out to slow down at home. Sitting in your backyard or local park as part of your morning routine can also help invigorate you each day.



Reduce Digital Fatigue

Limit your screentime, especially at night. Consider a digital detox and go tech free for a weekend. Take a refresher break away from screens for at least 5 minutes every hour. Be sure to change posture regularly and refocus your eyes, which also helps improve long-term productivity.

Doing some simple stretching exercises at your desk can be very useful too. Try this version of the 20-20-20 rule: every 20 minutes, look up from your screen at something about 20 meters away for about 20 seconds, to give the muscles in your eyes a chance to relax. Try taking a walk away from the office and eating lunch outdoors where you have the space you need to chew and taste your food without distractions, to rest while you digest your food.

Avoid Stimulants

Limit yourself to 1 to 2 cups of coffee per day, preferably before midday so the caffeine doesn't disturb your sleep schedule.

Better yet, try cutting out caffeine by ditching energy drinks and swapping coffee for herbal teas, like dandelion root or rooibos.

Dial Down the Drinking

Schedule a few alcohol-free days each week and swap to non-alcoholic alternatives (e.g. non-alcoholic beers, spirits, mocktails, spritzers, or soda water and lime).

On weekends and special occasions, limit yourself to 2 to 3 drinks (for men) and 1 to 2 drinks (for women). If you're looking to reduce how much you drink at home, try limiting how much alcohol you keep in the house, change your after-work routine, or opt for water. There are also things you can do to reduce your social drinking, like limiting how much alcohol you take to BYO events, avoiding drinks in rounds, or nominating yourself as the designated driver so you have a reason not to overindulge.[116]

Quit Smoking

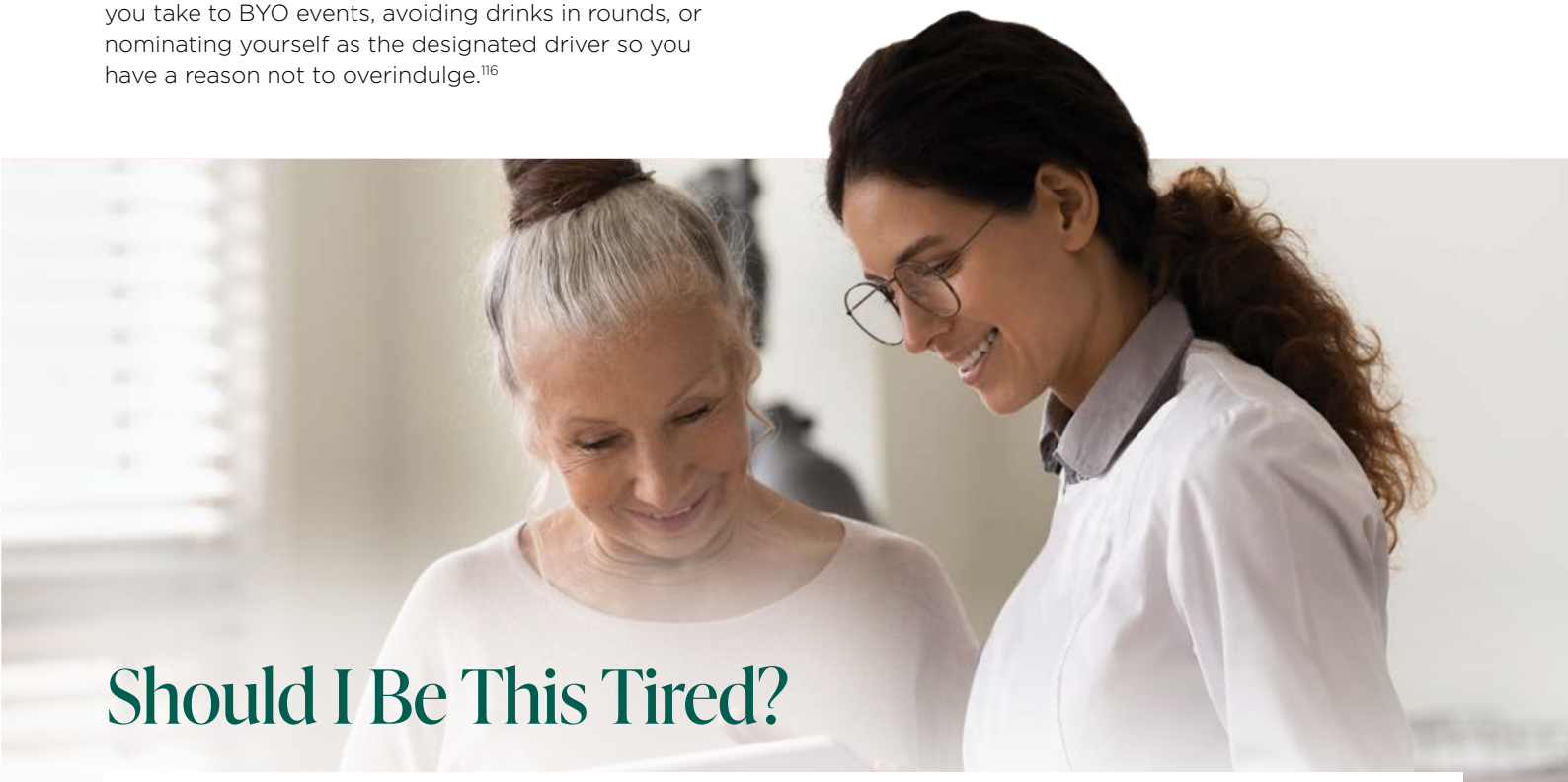
After the initial hurdles of nicotine withdrawal, your body will start to feel better.

Contact Quitline (call 13 78 48) for help to quit smoking. Quitline counsellors can give you basic steps to help break the habit and provide support, even if you're not completely ready to quit just yet.[117] See the Quitline website for more information:[118] [www.quit.org.au].

Stay Well Hydrated

As a general guideline, men should aim to sip on about 10 cups (2.6 L) of water throughout each day, and women should aim for about 8 cups (2.1 L).

You need even more if you have a physically demanding job and/or are regularly or vigorously exercising, that is, 1 L per every hour of exercise.[115]



Should I Be This Tired?

Remember, there is usually more than one factor involved when it comes to fatigue.

Relying on coffee to keep you functioning and alert may be a sign that you need to review your work-life balance, seek better ways to manage stress, and/or develop a better bedtime routine for more sleep. If you are still having trouble with fatigue, discuss these concerns with your healthcare practitioner.

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