- Ageing / Lifestyles / Longevity

# 8 PILLARS OF LONGEVITY MEDICINE

*By planning early and paying attention to these pillars we can enjoy optimal health throughout our lives for longer, as well as be physically capable of doing the things we want to do in our advanced years.*

**WORDS BY DR ADAM BROWN**

One of the first questions I ask my patients is, "How healthy do you want to be in the last decade of your life?" I call this the Ultimate Goal. Often I hear people say, "Oh I'll be too old to care by then", or "I'd rather not know if something was wrong with me". Conversely, these same people will also want to pick up their grandchildren, go to the local shops for groceries or hop on a plane to visit their family in their later years.

So, which is it? You can't possibly achieve the latter if your mindset is the former. If you are in denial, you are more likely to have developed significant weakness and mobility issues and be residing in a nursing home than bounding around the world.

These examples of activities of daily living, although they sound simple, actually require specific skill sets that we need to develop and practise earlier on in life to ensure that they are possible later in life. They also require us to have already built up a satisfactory reserve of muscle and bone strength in order to delay or stop the onset of sarcopenia (a musculoskeletal disease in which muscle mass, strength and performance are significantly compromised with age) and osteoporosis. This is the crux of Longevity Medicine.

Longevity Medicine is about preparing yourself early on in life in order to retain a good quality of life; disease-free and functioning to the extent that you can achieve the things most important to you, like living in your own home independently, travelling and spending time with friends and family.

However, muscle mass and bone health are not the only factors we see as critical to address. There is increasing impetus to view these as just parts of a complex jigsaw puzzle, which I call 'The Eight Pillars of Longevity'. These pillars include chronic disease reduction, gut microbiome, sleep, emotional health, exercise, social connection and extreme behaviour avoidance.

One example is an active 40-year-old woman who is a mother to two kids and works full-time. Let's call her Kate. She's a regular runner and does Pilates twice a week. On the surface, she appears to be physically fit and coping with the stresses of parenthood and full-time work.

When we delve deeper, however, we find that Kate has non-restorative sleep and above the recommended alcohol consumption. She wants to maintain the physique of a 20-year-old, so she under-nourishes herself; her body composition scan reveals she is under-muscled and her bone density is lower than it should be for her age. Both these deficits will grow when she passes menopause.

Kate has also always been troubled by mild gut and skin issues, which she puts down to "that's just me". However, when we examine her gut microbiome, we find imbalances and intolerances that need addressing. Finally, Kate's cholesterol has always been a little raised, but her GP has suggested holding off any treatment.

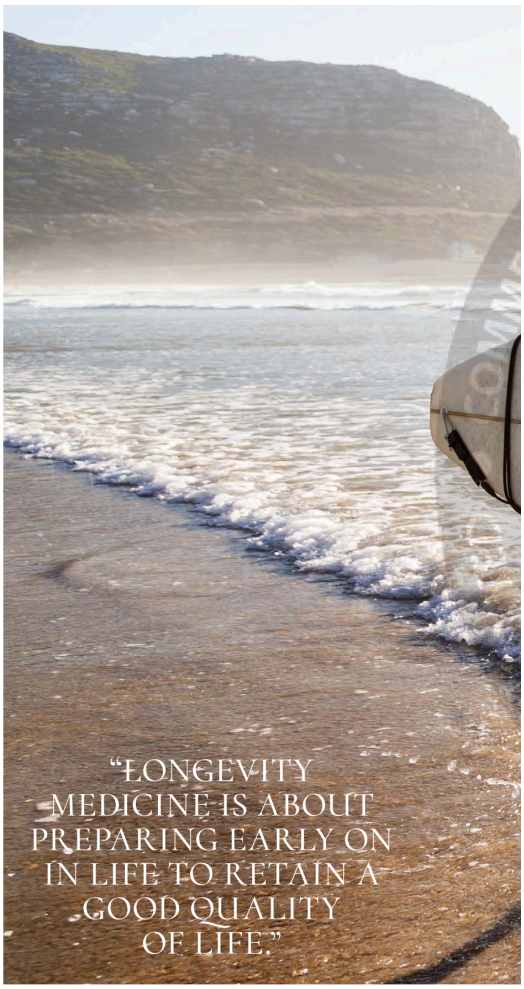
When we test some more specific markers, such as apolipoproteins, lipoproteins and APOE (Alzheimer's risk) genes, we discover these are elevated.

This is particularly concerning, as we've identified that Kate has a strong family history of heart disease, Alzheimer's and dementia, so we decide to treat her cholesterol, in addition to addressing other risk factors for these conditions.

So, what can we do day-to-day at home to attend to each of The Eight Pillars of Longevity? Understandably, people often feel overwhelmed by the amount of information fired at them online, most of which is unhelpful or unreliable.

If, however, you start by trying to structure your plan around The Eight Pillars of Longevity, you can begin putting green ticks in those areas that you are probably neglecting and are deficient in.

It's a great foundation.




## 1 EXERCISE

To achieve good health over our lifespan, I recommend a diversified exercise portfolio, with each of the four domains of exercise included in our weekly routines. These include:

**a) VO2 max training –** Your VO2 max is a measure of the maximum amount of oxygen your body can use during exercise. The best way to increase it is to exercise near your maximum heart rate. Aim for high intensity intervals of 4-5 minutes such as running or cycling, at over 90% max heart rate.

**b) Zone 2 training –** This is low-intensity exercise that burns fat and improves cardiovascular fitness. Opt for lower intensity steady state sessions of 45 minutes or more, at 65-75% of max heart rate. An example is an easy run or cycle where you can maintain a conversation without getting too out of breath.

**c) Strength training –** This includes such activities like lifting weights, using resistance bands, doing sit-ups or push-ups, and even many household chores such as digging while gardening, ensuring upper body, lower body, core and appendages are included.

**d) Stability and balance –** Stability exercises can help anyone move better and can fortify your body against the natural wear and tear of ageing. Good exercises include stretching and core strengthening with yoga or Pilates, for example.



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## 2 GUT MICROBIOME

The human gut microbiome – the collection of microorganisms residing in the gastrointestinal tract – is thought to play a role in the etiology of various diseases. Individual clinical blood markers have been found to be associated with abundances of certain gut bacteria. Lifestyle habits can also impact the composition of the gut microbial community. For example, a diet high in plant foods can profoundly influence the composition of the microbiome. One study by Guangxi Medical University showed a relationship between alpha diversity of the gut microbiota – which is boosted by a plant-rich diet – and neurological diseases. If you are concerned about your microbiome you can test its health. In our clinic, we test over 200 markers during our Gut Microbiome Mapping and Nutritional DNA assessment, so a nutritionist can guide specific dietary and supplementary advice.

## 3 BONE & MUSCLE HEALTH

Bone density and muscle mass decline with age (especially after menopause), which can result in osteoporosis and sarcopenia, increasing our risk of falls, fractures and premature death. Testing bone density, muscle mass and visceral fat can give you an objective view of your makeup so you can make specific changes, with the main goal of building a large reserve early on in life, to combat the natural decline. For example, increasing your protein consumption to 1.6g/kg of body weight from the recommended daily allowance advice of 0.8g/kg and ensuring adequate intake of calcium and Vitamin D and performing weight-bearing exercises can improve your bone and muscle health.

## 4 EMOTIONAL HEALTH & STRESS MANAGEMENT

This is a key area not to be neglected to control cortisol levels, maintain restorative sleep, limit unhealthy behaviours and maintain productive function in social and work environments. If we don't get this right, every other pillar will be impacted and we will not achieve our longevity potential.

## 5 RESTORATIVE SLEEP

In order to retain a good quality of life, disease-free and functioning to the extent that you can achieve the things most important to you, sleep is key. Approximately 7 to 9 hours, to allow sleep cycling between light, deep and REM sleep, is ideal. Sleep trackers can identify fragmented sleep, restless movements, heart and respiratory rate, and oxygen saturation so you can understand the quality of your sleep. Other issues to consider include regularity – falling asleep and waking within a 30-minute margin of error, to anchor your circadian rhythms; Timing – aligning your sleep schedule with your natural chronotype (morning person, night owl, versus typical sleep-wake schedule); and Sleep Hygiene – consider light presence, sounds, wind-down time, temperature, food and drink timing, alcohol and caffeine.

## 6 SOCIAL CONNECTION

Loneliness is a serious health risk factor with research showing lonely individuals are at a significantly higher risk of developing serious health conditions. Our relationships form a lattice of support that constitutes the largest single factor in the overall wellbeing of most people. Research indicates that prolonged periods of isolation are associated with increased stress and related changes in brain structure. Obtaining a social reward, like a smile from a friend, also releases hormones like dopamine to produce feelings of happiness and joy. The US Surgeon General's 2023 advisory emphasises the imperative of investing in strategies that alleviate the epidemic of loneliness. These include providing communal spaces and activities to facilitate social connection and developing public policies that prioritise fostering connections.

## 7 CHRONIC DISEASE REDUCTION

Heart disease, stroke, diabetes and dementia – known as the '4 Horsemen' – are the leading contributors to morbidity and mortality. The traditional medical model focuses too greatly on treating these diseases only when they have occurred. Longevity Medicine focuses primarily on early prevention, as early on in life as possible, to delay their onset indefinitely.

## 8 EXTREME BEHAVIOUR AVOIDANCE

Addiction is a complex condition. We commonly think of addictions such as food, alcohol, smoking, illicit substances, gambling, and sex/pornography; however we should not forget exercise, work or any other activity that takes control of our lives to the detriment of our health and interpersonal relationships. Any type of addiction can affect both your lifespan and health span and needs attention.

Ultimately, Longevity Medicine is about empowering people by giving them the tools and the knowledge they need to proactively manage their own health, rather than merely reacting to issues as and when they arise. It sounds so simple, but it's a paradigm shift in the way that society approaches health and ageing. It's about health optimisation, not just health treatment.



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