

he secret to living a healthy and abundant life can be summarised in a handful of key endeavours and exercise is one of them. There are few things we can do better for our body than to be active. Unfortunately, the Western lifestyle has made inactivity the norm. It isn't uncommon for individuals to spend three to four hours a day traveling to and from work—on top of the eight

According to Professor Stephen Blair of the Aerobic Centre Longitudinal Study, "Physical inactivity is one of the most important public health problems of the 21st century, and may even be the most important."¹

or more hours sitting at a desk.

Benefits of exercise

If you're in need of some motivation to get out and be active, then sit down and read this impressive list of exercise benefits. Better still, stand up and read it.

Exercise is a key contributor to people living longer, healthier, more vibrant lives.



It's been over 30 years since researchers observed that physical activity extends life. One of the earliest studies found that champion male Finnish skiers lived, on average, over four years longer than average Finnish men.²

More recently, an investigation of some of the longest-living people on earth-Okinawans and Seventh-day Adventists—showed that all of these groups engaged in plenty of physical activity as part of their daily living.^{3,4}

Researchers have examined many possible mechanisms by which exercise extends life. One study, using identical twins, probed the link between exercise and the length of telomeres. Telomeres are the protective ends of chromosomes that shorten as we age and are one of the most important factors in the ageing process. The study found that inactive people were biologically up to 10 years older than more active individuals, based on the length of their telomeres. The researchers concluded that reduced length of telomeres was a key method by which a sedentary lifestyle may accelerate the ageing process.⁵

HEALTHIER LIFE

Exercise can prevent, delay, minimise or manage a multitude of illnesses.

CORONARY HEART DISEASE AND STROKE

Exercise has beneficial effects on a number of factors that contribute to cardiovascular disease. Exercise can reduce high blood pressure, increases HDL (good) cholesterol, decreases triglyceride levels, and improves insulin sensitivity.⁶

HIGH BLOOD PRESSURE

People who are physically inactive have a 30-50% greater risk of developing high blood pressure as they age. High blood pressure is a significant public health challenge contributing to stroke, coronary heart disease, kidney disease, heart failure and end stage renal disease.⁷ It is unclear exactly how exercise affects

blood pressure, but some studies suggest that exercise stimulates the production of nitric oxide by the endothelium (blood vessel lining), which enhances smooth muscle relaxation and keeps blood vessels in their normal resting state.⁸

CHOLESTEROL

Exercise helps to reduce the levels of LDL (bad) cholesterol that is linked to cardiovascular disease.⁹ There are several ways it does this. Exercise can lead to weight loss whereas being overweight tends to increase the amount of LDL in your blood.¹⁰ Exercise also stimulates enzymes that help move LDL cholesterol out of the blood stream,¹¹ and changes its particles from being small and dense—and therefore too easily deposited into blood vessel walls forming plagues-into big, fluffy particles which don't contribute to cardiovascular disease.9

TYPE 2 DIABETES

Exercise is considered to be as important as healthy eating in the prevention and management of type 2 diabetes. Regular physical activity—with or without weight loss-helps to keep blood glucose levels lower, and improves poor insulin sensitivity—one of the key metabolic failings in type 2 diabetes.¹² Exercise that results in reduced body fat has an additional beneficial effect on insulin sensitivity.¹³ Strength-training exercise also decreases baseline insulin levels.¹⁴ Research has also produced firm and consistent evidence that increased physical activity and modest weight loss help prevent people with impaired glucose tolerance developing type 2 diabetes.^{15,16}

OSTEOPOROSIS

Regular exercise is one of the best ways to strengthen your bones and prevent osteoporosis.^{17,18} Exercise can also help stem the loss and even increase bone mass in the elderly and very old.¹⁹ There are three types of exercise that help build healthy bones: weight-bearing (in which your body weight is supported by your feet and legs), resistance exercise (lifting or pushing against light weights), and flexibility (stretching) exercises.²⁰

CANCER

Extensive research has produced clear and convincing evidence that physical activity reduces the risk of colon (bowel) and breast cancers.^{21,22} Studies also suggest that exercise may reduce the risk of cancers of the prostate and lung.^{23,24} In particular, colon cancer has been one of the most comprehensively studied cancers in relation to physical activity. A multitude of studies from around the world have found that adults who increase their physical activity, either in intensity, duration, or frequency, can reduce their risk of developing colon cancer by up to 30%. These benefits were obtained regardless of individuals' body mass index, although the greatest risk reduction was seen in the most active people. 21,25

OVERWEIGHT AND OBESITY

Obesity is a significant risk factor for many diseases including type 2 diabetes,²⁶ several types of cancer,²⁷ and heart disease.²⁸ Numerous studies identify regular physical activity as being crucial in the fight against obesity.²⁹ Exercise is especially useful in maintaining weight loss over the long term, because the more we exercise the easier it becomes. In fact, our body comes to crave exercise because of the mood-enhancing endorphins produced when we are physically active.³⁰ Exercise also plays a valuable role in helping to regulate our appetite, and in overweight individuals it may actually decrease hunger.³¹

An expert report by the World Cancer Research Fund gave their highest commendation—"convincing"—to the role exercise plays in managing obesity.³²

IMMUNE SYSTEM

Moderate physical activity is known to boost the body's immune system you'll be less likely to fall ill, but if you do, your symptoms will be milder and you'll recover more quickly.^{33,34}

Additionally, we now know that exercise increases the production of antioxidants, which fight free radicals in the body. Free radicals are molecules that damage body cells and tissue, contributing to many diseases including heart disease and cancer.³⁵

MORE VIBRANT LIFE

There's little point avoiding disease and living longer if we're not living happy, fulfilled lives. And exercise helps with this, too.

INCREASED ENERGY LEVELS

Exercise increases our energy levels, meaning we don't feel tired and fatigued so easily. One way it does this is by improving our cardiovascular fitness or efficiency,³⁶ resulting in improved delivery of oxygen to our cells. Another fascinating mechanism is that exercise stimulates the creation of new mitochondria in our muscle cells.³⁷ Mitochondria are *the power houses* of our cells, where energy is unleashed from the food we've eaten. Hence, exercise increases our capacity to generate energy.



Exercise helps you feel better—more positive and vibrant—because it stimulates the release of endorphins in your brain.³⁰ Endorphins interact with receptors in the brain that reduce our perception of pain. They also produce feelings of euphoria, moderate appetite, release sex hormones, and enhance the immune response. Research has also found that exercise can improve cognition and brain function.³⁸

Exercise enables us to cope better with stress.³⁹ In part, it does this by reducing the levels of stress hormones such as cortisol and adrenaline.⁴⁰ Exercise can also be a chance to unwind, to enjoy either your own company or the company of friends, thereby further strengthening our ability to cope with stress.

IMPROVED SELF-PERCEPTION

Studies have shown that regular physical activity improves an individual's perception of their physical condition and body attractiveness.⁴¹ As your body becomes more firm and toned, you not only feel more self-confident, you also experience a greater sense of control over your life.

Now to do it

There are four key types of exercise required for comprehensive health and wellbeing benefits.

1. AVOID PROLONGED SITTING

Exercising for 30 minutes a day is something great you can do for your body—60 minutes a day is even better!⁴² But they're not enough by themselves. Researchers have found that even regular exercise has limited benefit, if aside from your session of training you spend the remainder of your time mostly sitting. "While exercising daily has many health-promoting benefits, if you spend the rest of your day sitting around and not moving, your risk of ill-health, disease and premature death jumps back up!"^{42,43}

It's not just about how long we spend sitting, but how long we spend sitting without a break. Prolonged, uninterrupted sitting is the problem. Having regular *movement* breaks—or even just *standing* breaks—are linked to lower measurements of waist circumference, body mass index, blood triglycerides and fasting plasma glucose levels.⁴⁴

Find ways in your everyday life to spend less time sitting. You could try standing and folding the clean clothes while watching TV. Or why not stand at your office desk while talking on the phone? Could a *walking* meeting work for your team instead of the usual boardroom sitting fest?

2. AEROBIC EXERCISE

Aerobic exercises are activities in which your body requires lots of oxygen resulting in you breathing harder and faster in order to supply it. Examples include walking, jogging, swimming, riding, dancing, and rowing.

The Aerobic Center Longitudinal Study, involving more than 100,000 participants over more than 40 years, has shown that people who undertake about 150 minutes of moderate-intensity aerobic exercise per week have a greatly decreased risk of premature death, among a myriad of other benefits.^{42,45} This can be achieved as 30 minutes a day, five days a week. The 30 minutes can even be broken down into three 10-minute blocks spread over the day.^{46,47} For overweight people, aerobic exercise is beneficial even when it

doesn't result in weight loss.⁴⁸ In fact, obese people who are active have lower rates of illness and death than normal-weight people who are inactive.⁴⁹

3. STRENGTH-BUILDING EXERCISE

Strength-building exercises are designed to build muscle strength, and this is achieved by causing the muscle to contract against an external weight. You don't need to lift dumb-bells at the gym—simple items like cans of food, water bottles, or even your own body weight (when performing a push-up) will do the trick.

Also referred to as *resistance* exercise, muscle-strengthening exercises have important benefits. They tone and strengthen muscles, improving functionality and countering the loss of muscle tissue that occurs as we age.⁵⁰ Toned muscles also use more energy—even when you're asleep—so strength-building exercises increase your resting metabolic rate and help burn up excess kilojoules.⁵¹ Hence they are valuable for weight loss and weight control.

Strength-building exercises also stimulate the nerves, and there is evidence that they improve brain health and reduce cognitive decline.⁵²

Importantly in Western society, resistance exercises may assist in improving and maintaining bone density and prevent osteoporosis.⁵³

4. STRETCHING EXERCISE

Stretching exercises are designed to improve flexibility and suppleness, and are especially important as we age and our body tissue become more tense.⁵⁴ Stretching exercises are best done daily after you've exercised and are warmed up, but they can be done anytime you have a few spare minutes in the day.

In a nutshell

The Department of Health and Ageing, in the National Physical Activity Guidelines, recommends four steps to achieve the health benefits of exercise:⁵⁵

> **STEP 1** Think of movement as an opportunity, not an inconvenience.

STEP 2 Be active every day in as many ways as you can.

STEP 3 Put together at least 30 minutes of moderate-intensity physical activity on most, preferably all, days.

STEP 4 If you can, also enjoy some regular, vigorous activity for extra health and fitness.

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