

Staying in control



**HOW TO
MAINTAIN A
HEALTHY WEIGHT**





WE'RE GETTING HEAVIER

The developed world—and increasingly the developing world too—has an obesity epidemic.¹ Since 1980, the global rates of obesity have doubled.² In 2008, over 200 million men and nearly 300 million women were clinically obese.² And in 2010, more than 40 million children under the age of five were overweight.³

WHY WORRY?

In Australia it is estimated that by the year 2050 there will be approximately 1.75 million deaths annually as a result of obesity.⁴ Obesity is now the single most preventable cause of disease in men and women.⁵ Research indicates that obesity increases your risk of, or worsens, a myriad of conditions including type 2 diabetes,⁶ heart disease,⁷ stroke,⁸ high blood pressure,⁷ asthma,⁹ sleep apnoea,¹⁰ osteoarthritis,¹¹ certain types of cancer (including bowel cancer),¹² post-menopausal breast cancer,¹² fatty liver,¹³ and polycystic ovarian syndrome.¹⁴

What are you talking about?

ENERGY

When we use the word energy here, we're talking about the nutrients in food where the molecules are arranged in such a way that our bodies are able to break them apart and utilise the energy that was holding them together. Our bodies use energy to do things like moving muscles, making new cells, producing hormones and other substances, and thinking. The amount of energy in food, and the amount of energy our body uses, is expressed in the units of kilojoules (or calories).

SOURCES OF ENERGY

Food contains four nutrients from which we can obtain energy.

Protein and carbohydrates each contain 17 kilojoules per gram, alcohol has 29 kilojoules per gram, and fat has 37 kilojoules per gram.

ENERGY DENSITY

This refers to how much energy is packed into a particular food. For example, 16 carrots contain the same energy as one slice of carrot cake.¹⁵ The carrots—a much greater volume of food—have a low energy density, while the cake—a much smaller volume of food—has a high energy density.

HEALTHY WEIGHT, OVERWEIGHT AND OBESE

Body weight can be assessed using the Body Mass Index (BMI), which is calculated using the equation below.

Weight ← (kilograms)

Height² ← (metres²)

A BMI between 18.5kg/m² and 25kg/m² is considered healthy. Over 25kg/m² and up to 30kg/m² is overweight. Anything over 30kg/m² is considered obese.¹⁶ Keep in mind that the BMI score does have some limitations, so there are some circumstances in which these categories are not appropriate.





Why are we fatter?

There is good and growing evidence that obesity has a genetic basis,¹⁷ explaining why some people gain weight more easily than others. But it doesn't explain why the overall population has become fatter over the last 20–30 years.

Two key elements have changed for the Australian population. We spend more of our time sitting down, and what we eat and drink is significantly different to previous generations. These lifestyle changes have serious impacts on our day-to-day energy balance, with considerable implications for our body weight.^{18,19} Also, as we gain weight, our physiology changes. Our body fat causes resistance to insulin, the hormone that regulates the way our body uses energy; in particular glucose.²⁰

To a large degree, the secret to maintaining a healthy body weight is to balance energy input with energy output. The amount of energy we consume in our food shouldn't exceed the amount of energy we use up with our daily activity. When it does, the excess is generally stored as body fat, stockpiled away for a future time of need.

Maintaining energy balance is more difficult now because we are inherently less active. We drive to work, school and the shops, instead of walking or riding bikes. We sit at a desk all day, or perhaps on a tractor, instead of doing the physically hard work of the pre-sedentary era.²¹ The impact of our reduced physical activity is multiplied when coupled with the way our food supply and eating habits have changed.²²

Take-away food outlets, with high fat, fried foods, are common. Portion sizes for drinks, meals and snacks have often been super-sized. We snack more often, and consume soft drink like it's water. Food and drinks that were once reserved for rare indulgences have become daily treats. Processed foods and meals—often containing high amounts of hidden fats and sugars—have replaced many home cooked items.²³ Unless we are aware of all this, and make conscious decisions about how we live, it is all too easy to pile on excess body fat.



Maintaining a healthy weight

BE MORE ACTIVE

There's a surprising amount of debate about the role of exercise in losing weight, with more agreement on its value in avoiding weight gain and maintaining weight loss.²⁴

Nevertheless, a significant source of data comes from the National Weight Control Registry which tracks more than 10,000 people who've lost on average over 13kg, and kept it off on average for more than five years. One common factor to all the success stories was exercise. Participants took part in 60–75 minutes of brisk walking per day, or 35–40 minutes of jogging.²⁵

The mechanisms by which exercise aids weight control include:

- 1** Excess body fat is used up to provide the kilojoules needed for the exercise.²⁶
- 2** Resting metabolic rate is increased by increasing your muscle mass.²⁷ In other words, when you exercise, you build bigger, stronger muscles that require more energy to function than the smaller muscles you had before. Even when you're asleep, you're using up extra kilojoules.
- 3** A third mechanism involves more subtle changes to our physiology. Many overweight people suffer from reduced insulin sensitivity because fat stored in the muscle and liver cause these cells to no longer respond adequately to insulin. The pancreas produces more insulin to compensate, resulting in high levels of insulin circulating in the blood stream. One of the actions of insulin is to promote fat storage, causing overweight individuals to gain even more weight.²⁸ Exercise increases insulin sensitivity,²⁹ resulting in reduced levels of insulin in the blood and thus decreasing the drive for fat storage.

For most people, if they merely exercise and don't assess their eating pattern, they'll have an uphill battle to control or lose weight.³⁰ Our society suffers from major over-consumption of food, and hence attention to diet is essential in the bodyweight battle.

EAT BETTER FOOD

To maintain a healthy body weight we need to ensure we avoid foods with a high energy density, and replace them with filling, satisfying foods with a low energy density. In other words, we need to eat more whole plant foods such as whole fruit, whole vegetables, whole grains and legumes.³¹ They are naturally low in kilojoules, low in fat (with a few exceptions) and high in dietary fibre. One of the many benefits of fibre is that its bulk helps fill you up. When our stomach is physically full, it sends a message to the hypothalamus (our hunger-control centre), and it also lowers the level of ghrelin—the main hormone that makes us feel hungry. Fibre also contributes to the food taking longer to digest, thereby helping you feel satisfied for longer after a meal.³²

Consider this. A 100g chocolate bar can be wolfed down in less than a minute. The kilojoule content of the bar—by itself—is sufficient to supply the energy needs of a sedentary office worker for around five hours.¹⁵ But most people will feel hungry again well before the five hours is up, and will perhaps go and eat a nice, fatty pie! Energy dense foods lacking fibre make it all too easy to consume too many kilojoules.

Meat and dairy products are energy-dense foods. They can be high in fat, while containing no fibre.¹⁵ If you include meat and dairy products in your diet, avoid making them the centre of the meal. By packing your meals with good amounts of vegetables and wholegrain cereals, you can keep the energy density of meals down and your weight in a healthy range.

While some plant foods—such as avocados, nuts and seeds—are high in fat and should be eaten in moderation, it is a healthy fat that performs valuable roles in the human body.³³ Additionally, research suggests that animal fats may be more fattening than plant fats as plant fats appear to be more easily used by the body and are less likely to be stored as body fat.³⁴

LOSING WEIGHT—IF IT'S SO SIMPLE, WHY IS IT SO HARD?

If you've already put on excess body fat, the *cure* can be a little more challenging than *prevention*, depending on how overweight you are. Research has shown that in clinically obese people, the body will vigorously fight to keep the weight on, or put it back on once it's lost. When someone loses weight through lifestyle

change, the levels of some of our hunger-regulating hormones change, making the individual want to eat more.³⁵ These hormonal changes can persist for over a year. The body also becomes more fuel-efficient, using fewer kilojoules to do the same work.³⁶

Another hurdle is that the hypothalamus—our hunger control centre—also receives messages from *pleasure pathways* which influence our eating behaviour. If we see a food we've previously enjoyed, we'll experience a surge of dopamine (feel good chemical) urging us to eat it. Worse still, even if we don't really love the food, we'll still want to eat it if our brain associates it with a pleasurable experience. This is known as *comfort eating*. If our brain has learnt to associate food with love, affection or reward, then when we are feeling down or lonely we often turn to food in a subconscious attempt to improve our mood. The impact is heightened with sweet foods.^{37,38}

So what can be done about our body's efforts to sabotage our weight loss? Research has shown that aerobic exercise (such as walking, jogging, riding, swimming, dancing) impacts our hunger-regulating hormones in a way that decreases our hunger much easier than anaerobic exercise (such as weight lifting).³⁹ Studies have also established that when we get inadequate sleep or low quality sleep (as is caused by sleep apnoea), our levels of ghrelin increase—making us want to eat more.⁴⁰ So regular aerobic exercises and a good night's sleep are crucial in this battle against our hormones.

Long-term support from friends and family is also critical. With our body fighting our efforts, and our pleasure pathways wooing our hypothalamus, it's easy to give up. Ongoing encouragement and practical support are essential.⁴¹

It's also helpful to adopt strategies to change your environment and counteract the culture of over-eating that surrounds us. Simple things can be significant. If you make sure you've eaten before doing the grocery shopping, you're a lot less likely to give in to the temptation to buy those chocolate biscuits. Creating a safe food environment makes it a lot easier to make healthy food choices. It is a lot easier to resist having too many treats when they're not in your pantry.

And what about the famous and popular high-protein, low-carbohydrate diet—is it worth trying? This eating pattern will get you initial results, although much of it will be water loss, not fat loss. But long term this restricted diet may be unhealthy and as with most fad diets, the weight is likely to return,⁴² usually with some extra for good measure.



THE BOTTOM LINE

The long-term failure of dieting is well documented, but studies have also evaluated the strategies used by long-term successful weight losers. These people have made a conscious effort to make one or more of the following changes to their lives:⁴³

- ✓ **EAT MORE FRUIT AND VEGETABLES**
- ✓ **EXERCISE MORE**
- ✓ **EAT FEWER KILOJOULES**
- ✓ **EAT LESS FAT**
- ✓ **EAT FEWER SWEETS AND LESS JUNK FOOD**
- ✓ **HAVE SMALLER PORTION SIZES**
- ✓ **EAT LESS FOOD OVERALL**

Having a healthy body weight is a critical factor in protecting against a raft of lifestyle diseases, while also enabling us to engage fully in an abundant life. The basic secret is to balance energy input with output, but it helps if we understand the reasons this can be so difficult. Selecting your key strategies and organising your support mechanisms are valuable steps in the process.

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- 1 LIVING WELL**
WELCOME TO THE START OF GREAT HEALTH
- 2 GOOD EATING**
ESSENTIALS OF CHOOSING HEALTHY FOOD
- 3 A HEALTHY HEART?**
UNDERSTANDING CARDIOVASCULAR DISEASE
- 4 SUGAR ISSUES**
PREVENTING & REVERSING DIABETES
- 5 THE SILENT KILLER**
WHAT WE DO KNOW ABOUT CANCER
- 6 PLANTS & FATS**
EXPLORING PLANT-BASED DIETS



- 7 STAYING IN CONTROL**
HOW TO MAINTAIN A HEALTHY WEIGHT
- 8 MOVING WELL**
HOW TO MOVE SMART
- 9 LESS IS MORE**
ALL ABOUT ALCOHOL & CAFFEINE
- 10 WATER & SLEEP**
WHY HYDRATION & REST ARE UNDERRATED
- 11 SUNSHINE & BUGS**
SUNLIGHT & INTESTINAL BACTERIA
- 12 FEELING GOOD**
KEYS TO EMOTIONAL HEALTH
- 13 LIVING IN FREEDOM**
CARING FOR YOUR SPIRITUAL WELLBEING