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SILENT ASSASSIN

AUSTRALIA'S silent assassin is a deadly epidemic - but it's not the one you're thinking of.

It stalks an increasing number of us every day, preying on a new potential victim every five minutes.

In the 22 months of the coronavirus, about 2000 people have died of COVID-19 in Australia - about 90 deaths a month.

But the pandemic toll is dwarfed by the number of Australians dying of diabetes.

According to the latest data from the Australian Institute of Health and Wel-

fare, diabetes was the underlying cause of 4700 deaths in 2018 - almost 400 people a month - and a contributing factor in a further 12,000 deaths.

Today almost 1.4 million Australians are living with some form of diabetes, an estimated 500,000 have undiagnosed type 2 diabetes and a further 2 million have pre-diabetes.

The disease creeps up quietly on 331 of us every day - that's someone diagnosed every four and a half minutes.

A condition characterised by high levels of sugar in the blood, diabetes is a leading cause of crippling heart attacks,

strokes, amputations and blindness and costs Australia up to \$20 billion a year. But it doesn't have to be like this.

Not only is type 2 diabetes - more prevalent by far than type 1 diabetes - largely preventable, it's also viewed by an increasing number of experts as reversible.

Over the next two weeks, *The Canberra Times* and the ACM network will explore the latest evidence about Australia's silent assassin and introduce you to the experts exposing the bitter truth about our sugar addiction and the dietary myths making us fatter and sicker.

We'll also show you how you can reclaim your health by junking ultra-processed foods for a low-carb, healthy fat approach to nutrition.

Elite sports medical clinician Dr Peter Brukner, author of the book *A Fat Lot of Good* and founder of Defeat Diabetes, says Australians need to understand the damage they are doing to themselves: "We have to give people living with this chronic disease - and the millions of others facing the prospect of it - the information they need to take back control of their health".

INSIDE: MEET THE EXPERTS

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HELP US CATCH AUSTRALIA'S SILENT ASSASSIN

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It's the stalking killer we need to confront



Anita Beaumont

It may not inspire daily press conferences, case number updates, restrictions or mandates.

But should it continue on its current trajectory, the "silent pandemic" of the 21st century stands to affect 700 million people globally within 25 years.

Already, there are 460 million people around the world who have diabetes.

In Australia, it costs the economy as much as \$20 billion a year and affects 1.9 million people.

But only about 1.4 million know they have it.

"Arguably, the world has never experienced a health pandemic on this scale before," Professor Greg Johnson, the recently retired chief of Diabetes Australia, said.

"It has been said that if we can't slow this down and prevent people developing diabetes, it threatens to overwhelm our health system."

He said the numbers are growing, and they are "staggering", with type 2 diabetes accounting for 85-to-90 per cent of cases despite being "largely preventable" with the right support.

Type 1 diabetes, which cannot be prevented, accounts for between 10 and 15 per cent of cases, while gestational diabetes is the fastest-growing type of diabetes in Australia.

Diabetes NSW says one-in-four adults aged over 25 are living with diabetes or pre-diabetes.

"We hear a lot about COVID-19 now, as a pandemic," Professor Johnson said. "But we have certainly been saying for a long time that diabetes is the silent pandemic of the 21st century."

"The reason we say it is silent is because it is not as obvious or overt with new case numbers being announced every day. But the numbers for diabetes are absolutely on pandemic proportions."

Type 2 diabetes - which used to be called "adult-onset diabetes" - is increasingly affecting children, adolescents and young adults.

Diabetes Australia is the national body for people affected by all types of diabetes, and those at risk.

Professor Johnson said one of the "big myths" was that diabetes was not as serious as cancer or heart attacks.

"But diabetes is a big killer," he said. "It causes almost 4 million deaths around the world each year, and that's probably an underestimate."

Diabetes contributed to 11 per cent of Australian deaths in 2018, and 1.2 million hospitalisations.

Advocates and medical professionals were concerned COVID-19 outbreaks, restrictions and lockdowns would deter people living with diabetes from seeking health checks and advice for their condition.

But there have been more diagnoses of diabetes in the past year than ever before.

"It has been the biggest increase in the number of people with diabetes ever record-

THE EVIDENCE

- More than 1.4 million Australians have some form of diabetes
- It's estimated that up to a further 500,000 Australians have silent, undiagnosed type 2 diabetes
- Pre-diabetes affects almost 1 in 6 Australians aged over 25 (more than 2 million individuals)
- More than 120,000 people were diagnosed with diabetes in the 12 months to June 2021
- 331 Australians develop diabetes every day. That's one person every four and a half minutes
- Gestational diabetes is rising, affecting about one in 7 pregnant women
- Type 2 diabetes is more common than type 1 diabetes, accounting for 87 per cent of all diagnoses in 2020-21
- Diabetes is the seventh most common cause of death in Australia
- It's the leading cause of blindness in working-age Australians and results in more than 4400 amputations every year. (Amputations are 15 times more common in people with diabetes)
- People with diabetes are up to four times more likely to develop heart disease, which is the No. 1 cause of death for people with type 2

diabetes - contributing to almost two-thirds of all deaths in people with diabetes

- Diabetes costs the Australian economy as much as \$20 billion a year
- 58% of all cases of type 2 diabetes can be delayed or prevented with changes to diet

Sources: Diabetes Australia, Australian Bureau of Statistics, Australian Institute of Health and Welfare



ed in Australia, just in the past 12 months, and we don't really know why," Professor Johnson said.

"All we know is that the numbers are higher than they have been in any previous year. We have seen nearly 119,000 new diagnoses of diabetes across Australia in the past 12 months. Previously the highest was about 106,000."

People with diabetes are also at greater risk of serious illness, hospitalisations and intensive care should they be infected with COVID-19.

Prior to the virus consuming our lives and impacting the health system, about one in 4 hospitalisations in Australia were related to diabetes.

Professor Johnson said the last definitive published estimate of the effect of type 2 diabetes on the economy was "a few years ago".

"It was \$14.6 billion then, but diabetes would now cost the Australian economy closer to \$20 billion a year," he said.

Yet we do not have a national type 2 diabetes prevention program. The UK has one. As does the US. But not Australia.

The federal government recently released its latest Australian National Diabetes Strategy for 2021-2030, which conceded that remission of type 2 diabetes in adults could be achieved with dietary interventions such as "stepped food reintroduction" and low carbohydrate diets, as well as bariatric surgery.

"Diabetes is the most common chronic condition that general practice and our primary care system sees, and it has so many flow-on complications in terms of cardiovas-

cular health, contributing to heart attacks and strokes, to kidney failure and dialysis," he said.

"By and large, we underestimate diabetes, and we under-treat it. And it comes back to bite later on. It does lead to premature death in many cases - too many cases - around the world. It is a serious, silent pandemic."

About half of people who develop type 2 diabetes will have already had what is called "pre-diabetes".

But should this population have access to a structured, evidence-based lifestyle program, up to 60 per cent could be prevented from going on to develop type 2 diabetes.

"This is not some magic thing that just happens overnight," he said. "By the time you get type 2 diabetes, for most people, your glucose metabolism has been abnormal for many years already. With pre-diabetes - your glucose metabolism is disrupted but it is not bad enough to be diagnosed with type 2. Not everyone is guaranteed to go on and get diabetes, but all of those people with pre-diabetes are at very high risk of developing type 2."

"The evidence is clear that we can prevent up to 60 per cent of type 2 diabetes in that population with a healthier diet, healthier activity level and a weight reduction generally of around 5 to 7 per cent in body weight."

About two million Australian adults have pre-diabetes.

"Just imagine, if we could identify those two million people tomorrow and, over the next six months, give those 2 million people access to an evidence-based program," he

said. "We would see a serious reduction in the number of people developing type 2 diabetes over the next five-to-10 years."

"But we are not doing that at the moment. We are not identifying people with pre-diabetes, and we're not giving them access and encouraging them into prevention programs that are proven to work and help prevent the development of type 2 diabetes."

Professor Johnson said the funding was not there and governments had not come together on a national diabetes prevention program. Small, state-based programs were trying to target the issue.

"But it is just not on a scale that is going to seriously dent the numbers we are seeing," he said. "It is largely preventable to the extent that we have evidence that you can prevent the development of type 2 diabetes, or slow it down for many years, and the most powerful way to do that is through a structured behaviour change program that will address a healthier diet, a healthier activity level and a healthier weight."

A truly national effort by all governments and health services was required.

"What happens at the moment, too often, is that people are told - 'Don't worry too much about it, it's not too serious yet. Just go and watch your diet a bit,'" Professor Johnson said. "That is not good enough. That light touch will not achieve anything. We need a systematic approach and people need and should be entitled to know they can access a proven prevention program that might really prevent them from developing type 2 diabetes."

THE EXPERTS

Meet some of the highly regarded health professionals we've assembled to help us catch Australia's silent assassin



Dr Peter Brukner - Elite sports medicine clinician, author and founder of Defeat Diabetes



Prof Clare Collins - Laureate professor of nutrition and dietetics at the University of Newcastle



Dr James Muecke - Eye surgeon, co-founder of Sight For All and 2020 Australian of the Year



Prof Grant Brinkworth - Senior principal nutrition research scientist at CSIRO



Dr Pennie Taylor - Clinical dietitian and research scientist at CSIRO



Dr Paul Mason - Defeat Diabetes sports medicine and exercise physician



Annette Parkes-Considine - Registered nurse and diabetes educator



Dr Liz Fraser - General practitioner and co-founder of Low Carb Canberra



Prof Rob Moodie - Professor of public health at the University of Melbourne



Nicole Moore - Accredited practising dietitian and Defeat Diabetes expert

The facts: what you need to know

Anita Beaumont

So what is diabetes, anyway? Here are some basic facts from Diabetes Australia and Diabetes NSW.

Diabetes is a chronic condition that affects the way the body processes blood sugar, known as glucose. For our bodies to work properly, we need to maintain a healthy level of glucose in our blood, as it is the body's main source of energy.

This comes from the carbohydrate foods such as bread, pasta, rice, cereals, fruits, starchy vegetables, milk and yoghurt. When we eat these foods, our bloodstream carries the glucose around our bodies, where our cells convert it into energy.

Insulin, a hormone produced in the pancreas, breaks down the glucose so it can enter the cells. But if you have diabetes, it means your pancreas makes too little insulin, or none at all. As a result, the glucose you eat will stay in your blood instead of being turned into energy, and high levels of glucose in your blood can cause damage to your heart, brain, kidneys, eyes and feet.

There are three main types of diabetes, plus a condition known as "pre-diabetes".

Type 1 diabetes is an autoimmune condition in which the immune system activates and destroys the cells in the pancreas that produce insulin. While it is not known what causes this reaction, it is not linked to modifiable lifestyle factors, there is no cure, and it cannot be prevented. It represents about 10-to-15 per cent of all cases of diabetes, and is managed with insulin injections several times a day or with the use of an insulin pump. Onset is usually abrupt and the symptoms obvious. These include excessive thirst and urination, unexplained weight loss, weakness, fatigue and blurred vision.

In type 1 diabetes, the pancreas - a large gland behind the stomach - stops making insulin because the cells that make the insulin have been destroyed by the body's immune system. Without insulin, the body's cells cannot turn glucose - sugar - into energy.

In **type 2 diabetes**, the body becomes resistant to the normal effects of insulin or gradually loses the capacity to produce enough insulin in the pancreas. It tends to run in the family, and has been associated with modifiable lifestyle risk factors. Some people may be able to slow the progression of the condition through changes to diet and increasing physical activity. While type

2 diabetes usually develops in adults over the age of 45, it is increasingly occurring in younger age groups, including children. It is managed with a combination of regular physical activity, healthy eating, and weight reduction, but - as it is often progressive - many people will eventually need oral medications or insulin injections over time. Aboriginal or Torres Strait Islanders, people from the Pacific islands or with Indian or Chinese backgrounds are at greater risk of developing the disease. There is currently no cure, but effectively managing it with lifestyle modifications and medication can prevent diabetes-related complications. Research shows people with type 2 can achieve remission through healthy eating, regular exercise and weight loss.

Symptoms can include:

- Being excessively thirsty
- Passing more urine
- Feeling tired and lethargic
- Always feeling hungry
- Having cuts that heal slowly
- Itching, skin infections
- Blurred vision
- Gradually putting on weight
- Mood swings
- Headaches or feeling dizzy
- Leg cramps

Gestational diabetes mellitus occurs during pregnancy, and while most women will no longer have diabetes after the baby is born, some will continue to have high blood glucose levels after delivery. It is the fastest growing type of diabetes in Australia, affecting thousands of pregnant women who have an increased risk of developing type 2 diabetes in the future. The baby may also be at risk of developing type 2 diabetes later in life. Gestational diabetes can often be managed with healthy eating and regular physical activity. However, but some women may need medication (metformin) and/or insulin injections.

Pre-diabetes is a condition in which blood glucose levels are higher than normal, but not high enough to be diagnosed as type 2 diabetes. It has no signs or symptoms, and people with pre-diabetes have a higher risk of developing type 2 diabetes and cardiovascular disease. Two million Australians have pre-diabetes, and without sustained lifestyle changes - including healthy eating, increased activity and losing weight - about one in three will go on to develop type 2 diabetes.

Here's how we're going to help our readers defeat diabetes

WE WANT to help our readers understand the causes and consequences of type 2 diabetes and show how you can reclaim your health and improve your well-being.

Over the next two weeks our Silent Assassin series will bring you the latest scientific insights, informed opinions and practical diet advice from a range of experts, including medical professionals, health advocates and the authors of the bestselling *CSIRO Low-carb Diabetes Diet & Lifestyle Solution* and its new companion volume, *CSIRO Low-carb Diabetes Every Day*.

As an extension to the series, the ACM network - publisher of this newspaper - has partnered with Dr Peter Brukner and Defeat Diabetes to give our readers access to additional nutrition and exercise guidance

to help you build the healthy lifestyle that's right for you.

From Friday, December 3, every reader of the Silent Assassin series will have the opportunity to sign up to receive a free, three-month, no-obligation membership to the Defeat Diabetes app.

Launched in January 2021 by Dr Brukner and other medical professionals, Defeat Diabetes is an evidence-based program delivered via native mobile app and designed to help Australians diagnosed with type 2 diabetes and pre-diabetes.

Focusing on the benefits of a low-carbohydrate diet as the key to putting type 2 diabetes in remission, the app puts recipes, video lessons, masterclasses and cooking demonstrations at your fingertips.

Don't miss Friday's paper to find out how to register for the exclusive free trial.

And read more on Saturday about how Dr Brukner - a former team doctor for the Australian cricket team as well as AFL clubs Collingwood and Melbourne and Liverpool in the English Premier League - was inspired by his own health scare to write the book *A Fat Lot of Good* and launch Defeat Diabetes.

Already helping thousands of Australians learn, plan and eat their way towards a better life, the app features informative articles and practical nutrition tips from Dr Brukner, dietitian Nicole Moore and exercise physician Dr Paul Mason.

"Local research and overseas evidence is showing that a low-carb, healthy fat and protein diet can result in better glycaemic

control, reduced medication use, weight loss and, in many cases, remission of type 2 diabetes," Dr Brukner said.

Similar low-carb programs in the UK (diabetes.co.uk) and US (virtahealth.com) have reported success in reversing diabetes.

The Defeat Diabetes medical advisory panel includes more than 20 prominent orthopaedic surgeons, cardiologists, endocrinologists, gastroenterologists, GPs, dietitians and other health professionals who lend their expertise to the program.

In tomorrow's paper

Ophthalmologist and 2020 Australian of the Year Dr James Muecke writes exclusively for the Silent Assassin series on Australia's costly addiction to sugar.

We're eating ourselves to death, so let's stop sugar-coating it for our children

Poor diet causes more disease and death than tobacco and alcohol combined and yet we turn a blind eye to the dangers of sugar, writes eye surgeon **JAMES MUECKE**

I DOUBT there are any children these days who think smoking is healthy. Back in the 1950s though, cigarettes were considered socially acceptable. In the years following World War II, 80 per cent of men smoked. The realisation of the health dangers of smoking in the 1960s and the subsequent banning of advertising for cigarettes, the taxing of tobacco products and the rollout of hard-hitting and graphic awareness strategies have combined to make smoking a socially unacceptable habit. As a result, smoking and smoking-related diseases and deaths are on the decline in most countries.

I suspect there are plenty of kids and their parents who don't realise that sugar can be unhealthy. And yet, there are more than 8000 studies linking sugar to a range of serious but completely avoidable chronic diseases - most of which begin in childhood.

What are these diseases?

Tooth decay: 40 per cent of our 10-to-12-year-olds have decay in their adult teeth. Extraction of decayed teeth is the leading reason for days off school and surgical admissions for children.

Obesity: A quarter of Australian kids are overweight or obese. And there's a disturbing upward trend. The majority of today's children will have obesity at age 35 if we don't take action now.

Type 2 diabetes: Obesity is the biggest risk factor for this life-changing and life-threatening disease, which is diagnosed in more than 100,000 Aussies each year, and is now appearing in kids as young as three - a disease that not so long ago was known as "mature-onset diabetes". Although obesity is the biggest risk factor for type 2 diabetes, it's important to realise there are now more thin metabolically unhealthy people than there are overweight or obese metabolically unhealthy people. You may be thin on the outside but "fat" on the inside, without even knowing you are unhealthy.

What's causing this?

It's our diet. Our poor diet - a diet packed with sugar - is responsible for more disease and death than tobacco, alcohol and inactivity combined. Table sugar is what we usually think of when we think of sugar. But it's important to know there's another abundant form of sugar: refined carbohydrates. Products such as rice and flour, peeled white potatoes and foods prepared from these are sugar in disguise. Refined carbs are virtually pure starch and starch is just a long chain of glucose which breaks down into single glucose molecules when it reaches the gut. When you consume refined carbs you are, quite simply, consuming sugar.

Sugar and refined carbs are nutrient-poor and non-essential. There's not a single biochemical process in our bodies that demands we ingest them. And yet, they're the major ingredients of most packaged ultra-processed foods, or what I prefer to call ultra-processed food-like substances. These unhealthy substances make up 62 per cent of the US diet and 50 per cent of the British diet. I suspect the Australian diet is no different. Disturbingly, our federal government's Australian Guide For Healthy Eating, which is based on our Australian Dietary Guidelines, is packed with foods made from refined carbs, as well as foods that are relatively high in

sugar, and ultra-processed substances. Can this document truly be considered a guide to healthy eating?

How sugar causes poor health

Sugar, refined carbs and ultra-processed substances can lead to a condition known as insulin resistance. This is a complex metabolic process, so I'll keep it simple. Table sugar - sucrose - is made up of equal parts glucose and fructose. Let's look at glucose first. As soon as glucose is absorbed into the bloodstream from the gut, it triggers the release of the hormone insulin from the pancreas. And the insulin helps move the glucose into every cell of our body, where it's either stored or used as an energy source.

With prolonged and excessive consumption of sugar and refined carbs, the cells fill up with glucose. The insulin level rises to push more glucose into our cells, but a point is reached when the insulin can't push any more in. We are now resistant to the effect of insulin. We are insulin resistant. The resulting overflow of glucose into the bloodstream is taken up by the liver where it's stored as glycogen, and may eventually be converted to fat, which is then stored within the liver.

Fructose - that other half of table sugar - is what gives sugary products like fruit their sweet taste. It's not recognised as a food by the body and, when absorbed into the

Sugar and refined carbs are nutrient poor and non-essential. There's not a single biochemical process in our bodies that demands we ingest them.

bloodstream, doesn't trigger the release of insulin. Most of the fructose is metabolised by the liver, where the impact is toxic and can independently give rise to insulin resistance. Seed oils found in cooking oils and margarine and many ultra-processed substances can also directly lead to insulin resistance within the liver and the laying down of dangerous visceral fat in the abdominal organs. The increasing metabolic dysfunction driven by insulin resistance is seen externally as an increasing waistline. The progressive build-up of visceral fat caused by sugar and seed oils ultimately leads to a fatty liver and pancreas. In humans who consume excessive sugar, a fatty liver can appear within two months. And fatty liver and pancreas are key to the development of type 2 diabetes.

What is the result?

People with type 2 diabetes face years of unnecessary and expensive medical appointments, lost work and life opportunities and potentially devastating complications. Blindness is the most feared complication and the one I deal with every day at work. Diabetes is now the leading cause of blindness among working-age adults in this country. Fortunately, eye disease due to diabetes is rare in kids, although it has been reported. And the damage can certainly begin in childhood. Type 2 diabetes is also a deadly disease. In



2020 we lost 15 times more lives to it than to COVID-19. And we're 12 times more likely to die from COVID-19 if we have a diet-related chronic disease such as obesity or type 2 diabetes. This is a silent, deadly epidemic that's been largely ignored.

Why do we have this epidemic?

That's a long story involving religious ideology, corrupt science and the might of the corporate food industry. It's a disturbing 150-year history that culminated in the release in 1980 of the Dietary Guidelines for Americans, which discouraged the eating of saturated fat and cholesterol. The scientific evidence was not strong and indeed flawed and manipulated. To compensate for the lack of flavour caused by removing fat from food, carbs had to increase. This low-fat, high-carb dietary recommendation persists to this day across the globe, including in our Australian Dietary Guidelines.

As a result, cardiovascular diseases such as heart attack and stroke have soared and type 2 diabetes has seen a four-fold increase globally over the past 40 years, profoundly affecting some communities. In First Nations Australians we've seen an 80-fold increase in type 2 diabetes since 1980, with 7-year-olds now diagnosed. I've no doubt that the poor diet that Aboriginal people have been encouraged to consume is driving this catastrophic epidemic - a diet packed with refined carbs and ultra-processed substances and far removed from their traditional way of eating.

The impact of type 2 diabetes is also weighted toward lower socio-economic areas. In Greater Western Sydney, for example, half of all adults over the age of 24 have either pre-diabetes or type 2. For the first time in our history, we are overfed but undernourished. And it begins in childhood.

A dietary cure for a dietary disease

If tooth decay, obesity and type 2 diabetes are man-made dietary diseases, then surely there's a dietary cure? Yes, it should be as simple as reducing consumption of refined carbs, ultra-processed substances and, above all, sugar. But there are a number of factors making this a difficult goal to achieve - what I call my "Five As of Sugar Toxicity" (see above). What we need is courage, visionary leadership and decisive action, which I'd sum up with another three "As".

Awareness: We all need to be aware of the health dangers of sugary drinks and ultra-processed non-foods. Education has to begin in those formative first few years of school. Or even earlier, during pregnancy: glucose from the mother crosses into the blood circulation of the fetus, but insulin does not, and so our kids may be primed for a range of chronic and behavioural diseases before they're even born. For mothers who can breastfeed, the longer the better, to forge good metabolic health in their offspring.

I came to understand the addictive

THE CASE



Dr James Muecke, pictured, wonders if his **HEALTHY FOOD DIAMOND** diagram is a "more balanced" alternative to Nutrition Australia's established **Healthy Eating Pyramid** because it:



- Encourages the eating of foods containing healthy saturated fats, from both animals and plants
- Minimises cereals and highly refined grains, high-sugar fruits and starchy vegetables; and
- Avoids ultra-processed substances and unhealthy fats such as margarine and vegetable oils.

power of sugar and ultra-processed substances only recently, and I'm a medical doctor. Once you're aware, you can begin to reduce the amount of sugar in your kids' diet - to detox them. And, once you're aware that sugar is often used to alleviate stress, it's possible to replace it with healthier options to activate the feel-good centre. Send the kids outside to play. Music is also a powerful trigger. How good do we feel when we're listening to our favourite songs?

We also should be aware that type 2 diabetes is largely preventable. A comprehensive overhaul of our national dietary guidelines will help. This powerful but outdated, flawed and biased document informs what's fed to our kids, what they are taught at school and decisions made by health practitioners and policy-makers.

As one example, South Australia's "Right Bite Policy" for schools uses the Australian Dietary Guidelines for Children & Adolescents from 2003 as its source of nutritional advice. It encourages "plenty of cereals, grains, vegetables, legumes and fruits" - a carb-heavy diet. We also need to look at Nutrition Australia's "Healthy Eating Food Pyramid" which encourages a carb-heavy, plant-based diet and continues to discourage the eating of healthy fats. Don't get me wrong, I love my fruit and veg, but when you realise that Nutrition Australia is part of an industry

HELP US CATCH AUSTRALIA'S SILENT ASSASSIN



THE EVIDENCE

Dr James Muecke unpacks his "Five As of Sugar Toxicity", factors that give sugar its toxic impact.

Addiction: Sugar is as addictive as nicotine. It triggers the reward centre in our brains, releasing neurotransmitters such as dopamine, which makes us feel good and crave more. Sugar is the only addictive substance that we willingly give to our babies.

Alleviation: We often use sugar to feel better when we're down or anxious. Our brain needs to balance the stress hormone cortisol by releasing feel-good chemicals and sugar is good at triggering this.

Accessibility: Sugar is cheap and it's everywhere. We are being tested constantly - even at the counter of some pharmacies!

Addition: 75% of our consumables have added sugar - and there are at least 260 different names for it, so nutrition labels don't always help. The health star rating system is flawed: designed by the food industry and used by only 30% of manufacturers.

Advertising: "Breakfast is the most important meal of the day" is a slogan popularised in 1906 by John Harvey Kellogg to market his newly breakfast cereal, Corn Flakes. A century later, there's still no evidence to support the claim. Indeed, our kids will likely do better by avoiding cereal for brekkie. But there's no escaping the daily bombardment of ads for sugary and ultra-processed food and drinks.



fruit rather than the sugary juice. Nature has packaged fructose - the poison - together with fibre - its antidote. As well as filling you up, the fibre in whole fruit slows down the absorption of the toxic fructose component.

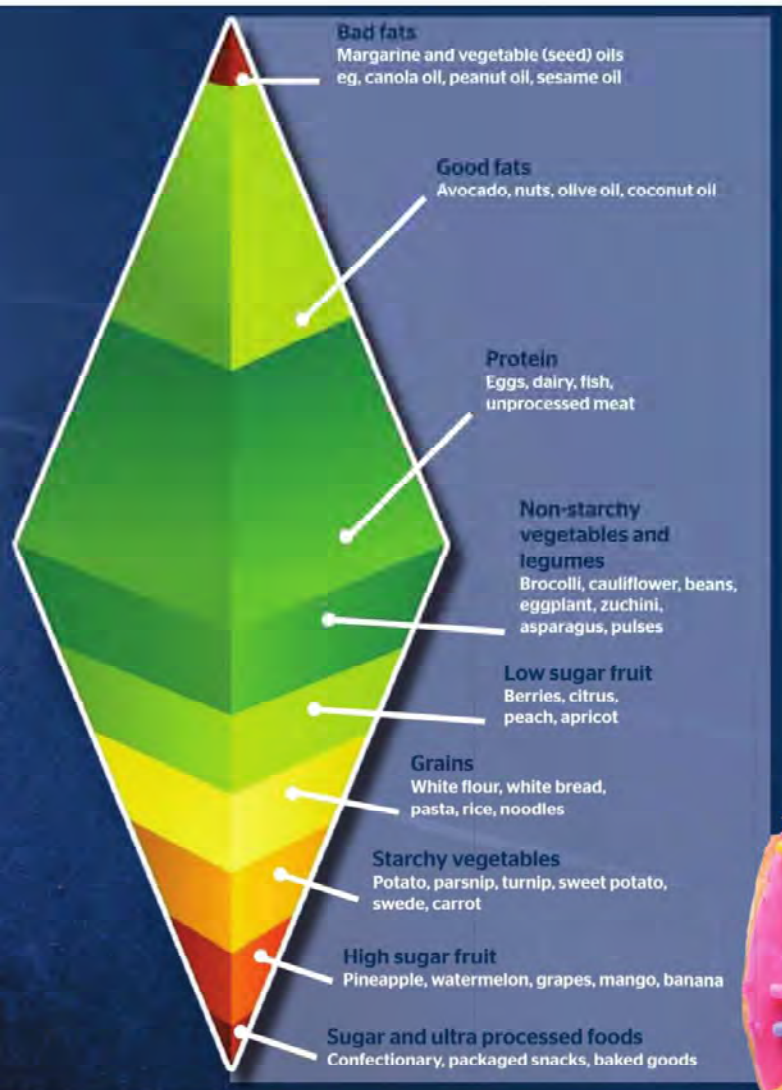
In the next review of the Australian Dietary Guidelines, the recommendations must be grounded in solid science, relevant to all Australians and free of food industry bias. The rampant marketing juggernauts of the ultra-processed food and sugary drinks industries must be reined in. Some 70 per cent of Aussie parents say they want government to help protect their kids from the predatory marketing of unhealthy products. Clearly, we still have a long way to go.

Assistance: Each and every one of us needs help. Doctors need it to educate and manage patients with diseases such as obesity and type 2 diabetes. Teachers need the appropriate

tools and training to guide young people towards a healthier future. Parents need assistance to know the best foods for their kids. The resources are out there for doctors, schools and parents.

Australians from every walk of life also need access to affordable fresh food - real food that reduces the risk of chronic disease. A recent international poll confirmed that the thing we care about most in life is our health. As parents, health practitioners, teachers and community leaders, we cannot afford to turn a blind eye any longer. Write to your school principal, your sports club or your local MP. Join a movement. It's time to act, and to set our children on the path to an Australia free from chronic diseases like type 2 diabetes.

Don't miss Friday's paper ACM - publisher of this newspaper - is partnering with Dr Peter Brukner and Defeat Diabetes to offer readers a three-month, no-obligation free trial of the Defeat Diabetes app, which puts nutrition advice, recipes and video tutorials at your fingertips. See Friday's paper for details. Dr Peter Brukner - Elite sports medicine clinician, author and founder of Defeat Diabetes



collaboration with a "vested interest in growing consumption of fruit and vegetables in Australia", is it any wonder they're pushing a plant-based diet?

We need to celebrate the natural saturated fats in our food, including those sourced from animals; fats that are critical to the health and development of our kids; fats like those found in unprocessed red meat, eggs and full-fat dairy; healthy saturated fats that are not associated with an increased risk of cardiovascular disease; fats that have been demonised for over 50 years.

Perhaps my "Healthy Food Diamond" (see above) is more balanced and provides a better guide as to how we should eat.

We also need to be aware that type 2 diabetes is potentially reversible. If your child had cancer, you'd want to know whether it could be put into remission. It's also your right to know that type 2 diabetes can be put into remission; that the humiliation and destruction that accompanies this insidious disease can be avoided.

There are proven dietary methods that put type 2 into remission. More than 100 controlled clinical trials show that a low-carb, healthy fat diet works to prevent and reverse type 2 diabetes. There's no evidence to show that the high-carb recommendations of our national dietary guidelines can prevent type 2 diabetes, a disease of carbohydrate

intolerance. We need to flip our current eating pattern on its head, shifting to a low-carb approach, with a good dose of essential satiating proteins and healthy fats.

Accountability: Business and industry need to do the right thing. They know children are hard-wired to like sweet things and they prey on sugar addiction and its withdrawal symptoms. Businesses flood our lives with junk food and sugar-loaded drinks, making it impossible for our kids to escape the lure.

Business and industry must also account for the amount of sugar they add to products. And they need to be made it clear so parents are not baffled by unidentifiable alternative names for sugar.

Schools are by no means innocent. They need to critically review what's sold in canteens and find other - healthier - ways to raise funds for sports equipment. Sports clubs need to find healthy food sponsors rather than rely on fast food, junk food and sugary drink industries. After all, even hyper-active kids can't outrun a bad diet.

Above all, governments need to be held to account. Our flawed health star rating system has to be overhauled and industry influence removed. It was a relief to see that orange juice was downgraded to two stars earlier this year. How can a drink with as much sugar as a glass of Cola possibly receive the healthiest 5-star rating? Encourage your kids to eat the whole

Silent epidemic tips the scales in 'Fatworth'

How one town is facing battle of the bulge

THE CASE

Madeline Link

Known and loved nationwide for its Big Golden Guitar and love of country music, Tamworth in north-west NSW is also making a name for itself as one of the fattest cities in Australia.

It has been even renamed Tim-Tam-worth for a day, has been cruelly dubbed "Fatworth" by some locals and once hosted an eight-metre tall, 300-kilogram Big Mac next to its war memorial. But the bustling regional centre has a serious problem with obesity - and it's growing.

The suburb of West Tamworth is officially regarded as the fattest in Australia. According to 2017-18 Australian Health Policy Collaboration data, a whopping 93.8 per cent of the suburb's residents are either overweight or living with obesity.

That's up from 79.8 per cent in 2014-2015.

Official figures show at least 3790 people in Tamworth are living with diabetes, more than in equivalent country cities such as Orange (2160) and Wagga Wagga (3650).

Retired GP Dr Lyn Allen has watched as Tamworth's milk bars and corner shops of the 1980s have been replaced by fast-food chains and reckons they've done a fat lot of good for local waistlines.

"I began working in 1980, and in 1980 we had very little diabetes," Dr Allen said.

"As the population has had access to a lot more fast-food and processed stuff in the supermarkets, diabetes has become a huge problem as with all the things that go with it.

"My first scales were 110 kilograms. By the time I retired in 2017, my scales were 250 kilograms."

Dr Allen said a "normal" weight was previously considered around the 70-80 kilogram mark. "If you look at someone who weighs three times that with the same sized heart, you can imagine the effect on their body," she said.

"If they were educated, maybe they would make another choice if they realised what it would do to them. Places like McDonald's, it's not everyday food. Just like junk in the supermarket, they eat it all the time."

So incensed was Dr Allen by the proposal to build a fourth McDonald's outlet in the city, she took her concerns to a council meeting to speak against the development.

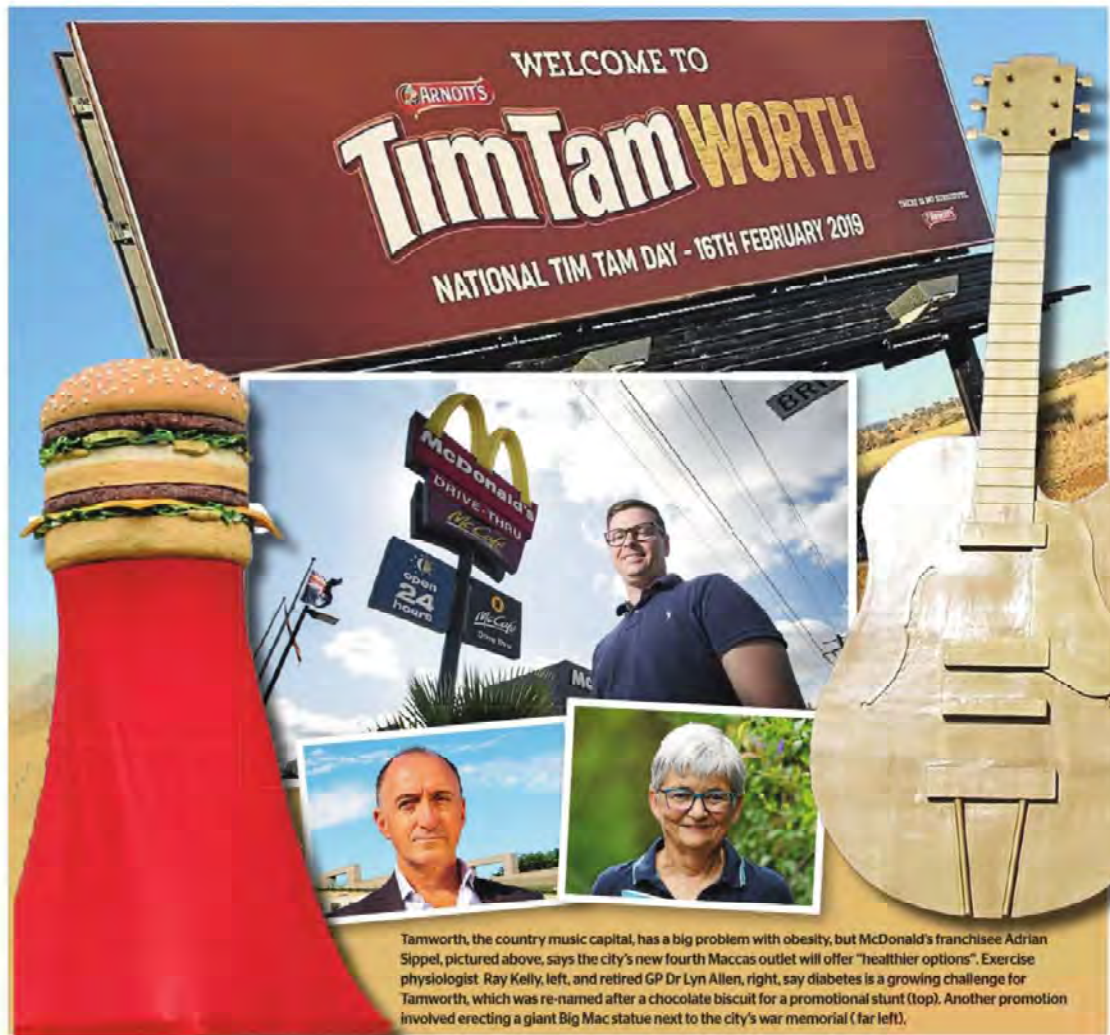
But the burger giant's local franchisee Adrian Sippel says fast-food restaurants alone cannot be blamed for the prevalence of diabetes.

He points to the healthier options his outlets offer.

"Over the past few years, we've included healthier options on our menus and have committed to helping our customers make more informed decisions about their food choices," he said.

"We have introduced salads and wraps, reduced the sugar content of our buns to just five per cent and offer healthier substitutes in Happy Meals including wraps, fruit bags and yoghurt.

"McDonald's has a long history of being part of the Tamworth community. We



Tamworth, the country music capital, has a big problem with obesity, but McDonald's franchisee Adrian Sippel, pictured above, says the city's new fourth Macca's outlet will offer "healthier options". Exercise physiologist Ray Kelly, left, and retired GP Dr Lyn Allen, right, say diabetes is a growing challenge for Tamworth, which was re-named after a chocolate biscuit for a promotional stunt (top). Another promotion involved erecting a giant Big Mac statue next to the city's war memorial (far left).

DIABETES	POPULATION
Burnie	1360 (6.8%)
Dubbo	3680 (6.2%)
Ballarat	6640 (5.7%)
Launceston	3930 (5.7%)
Albury-Wodonga	3360 (5.6%)
Wollongong	13,220 (5.5%)
Tamworth	3790 (5.4%)
Warrnambool	2020 (5.2%)
Bathurst	2500 (5.1%)
Wagga	3650 (4.9%)
Newcastle	8740 (4.7%)
Orange	2160 (4.5%)
Canberra (ACT)	19,530 (4.3%)

National average of people with diabetes is 5.9%.
Source: National Diabetes Services Scheme

support local sports clubs and encourage people to enjoy Macca's as part of a balanced lifestyle."

Tamworth's fourth McDonald's will open in December and is expected to inject more than \$5 million into the economy and create 120 new jobs.

Despite the city's health statistics and burgeoning burger business, Tamworth state MP Kevin Anderson reckons the community does a good job when it comes to food and exercise.

"I think we need to get better and look at what we do to get people moving," he said. "Schools are doing a great job with healthy tuck shops and eating options and alternatives, but there has to be education at home as well - what's being put on the table at home matters."

Asked if local, state and federal governments should play a bigger role in education about healthy eating, Mr Anderson said he felt there was "a lot of work going on already".

Active Kids vouchers were a great example of the work the NSW government had done, along with investment in sports infrastructure to encourage exercise.

Gomerol man Ray Kelly, an exercise physiologist who runs the Too Deadly for Diabetes program for Indigenous communities, is worried about increasing chronic health issues in younger age groups.

"People think that type 2 diabetes is bad now. It's nothing," Mr Kelly said.

"We will have a tsunami of mental health issues if we don't get onto it."

"For a start in Tamworth at every high school you would have a number of children with type 2 diabetes and diagnosed, but there would be many more in the early stages."

"At this stage what we are seeing is kids being diagnosed in their 20s and 30s. When I grew up in that area your 50s was young to be diagnosed.

These people have passed the healthiest years of their life and will spend the majority on medications and in poor health.

"What that means is seeing cardiologists and kidney experts, poorer mobility and mental health [and] it's a determining factor for dementia.

Mr Kelly, who recently co-hosted the SBS documentary series *Australia's Health Revolution* with Dr Michael Mosley, welcomed Diabetes Australia's recent formal acknowledgement that type 2 diabetes can be put into remission through weight loss achieved by dietary and lifestyle changes.

"I was like a dog with a bone after that ... I do want to change the world. People laugh

about it and say one person can't change the world, but you can't if you don't try," he said. "We taught people how to live with it and if you do that you set the bar low, but what if we set the bar high?"

Jen Avery is one Tamworth resident reclaiming her health after a type 2 diabetes diagnosis.

"It was probably 12 years ago I was diagnosed," Ms Avery said. "I was very overweight and I had an infection that wouldn't go away, so my GP did a test and I was diagnosed. That's when I started my struggle to manage it. I was pre-diabetic but no matter what I did it wouldn't go away. I went onto oral medications and then I went onto insulin.

"Honestly, I just went into denial. I didn't think it was a big deal. When I'm feeling a bit stressed I go to that place of 'it's not something life-threatening, I don't need to worry' but I do because of your eyes, kidney health, all those sorts of things. And I do need to worry about it."

Ms Avery says she has lost 25 kilograms and is inching closer to remission while following the Defeat Diabetes program led by sports physician Dr Peter Brukner.

"The difference between then and now is that I truly know I need to exercise and eat properly if I want to have a reasonable life," she said.

Since she began the program, she has come off insulin and feels "200 per cent better".

"I feel different, I recognise I have it but I don't think of myself as being sick. I know I have a chronic illness. I'm in control of it now, it's not in control of me."

HELP US CATCH AUSTRALIA'S SILENT ASSASSIN



How we're helping you reclaim your health

Almost 1.4 million Australians are living with some form of diabetes, another 500,000 have undiagnosed type 2 diabetes and a further 2 million have pre-diabetes.

Every day the disease creeps up quietly on 331 Australians - that's someone diagnosed every four and a half minutes.

Characterised by high levels of sugar in the blood, diabetes is a leading cause of crippling heart attacks, strokes, amputations and blindness.

But this deadly epidemic is not the one everyone's talking about.

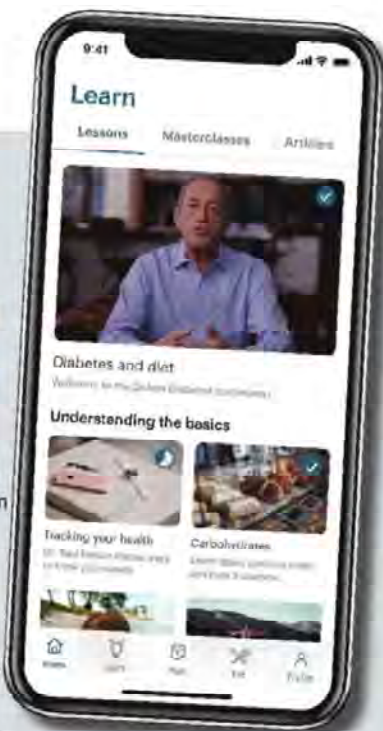
Through our Silent Assassin series of articles on this growing public health crisis, the ACM network - publisher of this masthead - wants to help readers better understand the causes and consequences of type 2 diabetes and show how you can reclaim your health.

We're also partnering with Dr Peter Brukner and Defeat Diabetes to give readers three months of free access to the Defeat Diabetes mobile app, which is designed to help Australians diagnosed with type 2 diabetes and pre-diabetes.

Focusing on the benefits of a low-carbohydrate diet as the key to sending type 2 diabetes into remission, the app puts diet and exercise advice, recipes and video lessons at your fingertips.

Scan the QR code published in today's paper to take up this special offer.

And look out in Saturday's paper for our profile of Dr Brukner - former team doctor for the Australian cricket team as well as AFL clubs Collingwood and Melbourne plus Liverpool in the



English Premier League - who was inspired by his own health scare to write the book *A Fat Lot of Good* and launch Defeat Diabetes.



IN TOMORROW'S PAPER: ONE MAN'S MISSION TO BUST THE BIG DIETARY MYTHS

The facts: what is insulin resistance?

Dr Peter Brukner

Insulin resistance is probably the single most important factor in our metabolic health. And have no doubt, poor metabolic health can lead to a cascade of other chronic health conditions, including diabetes, heart disease, stroke and even dementia.

First of all, insulin is an amazing hormone, without which, we would die. In fact, it has saved the lives of many thousands of type 1 diabetics whose bodies lose the capacity to make insulin. But insulin can pose a double-edged sword. While it can be life-saving for some, problems with its normal function, commonly called insulin resistance, is a dominant factor in many chronic and debilitating illnesses suffered by millions of Australians.

A major reason for this is because insulin resistance can lead to type 2 diabetes, the single biggest cause of kidney failure and blindness in Australia. Diabetes is also the most common cause of limb amputation in Australia, and doubles the risk of stroke and is a major cause of heart disease.

One of the most important functions of insulin is to remove glucose from the blood when levels are excessive. And when we are insulin resistant, it is unable to do this.

Let's look at the terms "insulin resistant" and "insulin sensitive". When insulin is working correctly in our body, we are said to be insulin sensitive. However, if our response to insulin is impaired, we are insulin resistant. To compensate for our insulin now not working properly, our body will release more. This is why high levels of circulating insulin usually indicates we are insulin resistant.

Unfortunately, in those with type 2 diabetes, this extra insulin is usually not enough, and blood glucose levels will remain high. In addition to the problems faced by the ongoing high glucose levels, these high insulin levels can also cause problems of their own. This includes causing high blood pressure and increasing the risk of several cancers, including bowel, pancreatic and breast.

Our diet is the main driver of insulin resistance. In particular, it is the consumption of processed foods, which contain vegetable oils and carbohydrates that drives this process.

First of all, a major driver of insulin resistance is the consumption of vegetable oils. While we have been told for a long time that these oils are healthy, the balance of evidence does not support this. These oils are

THE EXPERT

prone to something called oxidation, which can damage the liver, and directly contributes to insulin resistance.

While insulin resistance is a key driver of modern chronic disease, simple changes to your diet present an easy and proven way to improve it.

The most damaging form of carbohydrates in processed foods are undoubtedly the fructose-containing sugars. Like vegetable oils, fructose can also damage the liver, further exacerbating insulin resistance.

In the setting of insulin resistance, starchy carbohydrates which contain glucose then become a much bigger problem. Whereas when insulin is working properly, and the body is able to tolerate small to moderate amounts of glucose without issue, in the insulin resistant state, consumption of these

While insulin resistance is a key driver of modern chronic disease, simple changes to your diet present an easy and proven way to improve it.

foods will lead to excessive elevations of blood glucose, along with all the side effects. This is why those with type 2 diabetes are well advised to stay away from processed foods, which often contain vegetable oils, fructose containing sugar and starchy carbohydrates.

This approach of consuming a diet low in vegetable oils and carbohydrates has been proven to be effective in the management of type 2 diabetes. We now have good quality medical evidence demonstrating that more than 50 per cent of people with diabetes can reverse it following this kind of diet. So understand that while insulin resistance is a key driver of modern chronic disease, simple changes to your diet present an easy and proven way to improve it. Doing this could add years of health to your life.

Elite sports medicine clinician Dr Peter Brukner is the author of *A Fat Lot of Good* and the founder of Defeat Diabetes. For more information visit defeatdiabetes.com.au

'Remission' statement offers hope that killer can be arrested

Anita Beaumont

AUSTRALIA'S peak authority on diabetes has acknowledged the possibility that adults with type 2 diabetes could put the deadly disease into remission through weight loss achieved by "intensive dietary changes", or bariatric surgery.

In its first position statement on the issue, Diabetes Australia conceded that while type 2 diabetes was previously understood to be a progressive condition, several recent studies had challenged that view.

"We now understand that, in some cases, progression can be stopped or slowed," the statement said.

HbA1c - also known as the hemoglobin A1C test - is a simple blood test that

measures average blood sugar levels over three months.

"New research has shown it is possible for some people with type 2 diabetes to reduce their average glucose level to achieve an HbA1c of under 6.5 per cent and sustain them at that level for a prolonged period of time - at least three months - without the need for glucose-lowering medication," Diabetes Australia said.

"This is referred to as type 2 diabetes 'remission'. Remission is the best term to use - it does not mean that type 2 diabetes is cured or reversed. The underlying glucose intolerance may persist, an increased cardiovascular health risk may persist and, over time, glucose levels may return to levels indicating type 2 diabetes."

Remission of type 2 diabetes was more likely in people with a shorter duration of diabetes - less than five years, a lower HbA1c when attempting remission, and those not requiring insulin therapy.

Diabetes Australia said for people who were overweight or obese, remission of type 2 diabetes usually required "substantial" weight loss.

"While any amount of weight loss is usually beneficial, people are more likely to achieve remission if they lose around 10- to 15 per cent of their body weight. Weight loss may be achieved through intensive dietary change - such as a very low energy diet, other healthy behaviour modification, or bariatric surgery."

The organisation said type 2 diabetes

remission was "not realistic for everyone".

"Nor is it desirable for some people to stop taking certain glucose-lowering medications, as they have benefits beyond the management of blood glucose levels," Diabetes Australia said in October.

People with type 2 diabetes who want to attempt diabetes remission were advised to do so in "close consultation with their diabetes healthcare team", as intensive dietary and weight changes required careful management, monitoring and support.

"People who do not achieve or sustain remission should not feel that they have 'failed'," Diabetes Australia said. "The health benefits of weight loss and a reduction in HbA1c are significant even if remission does not occur."

HELP US CATCH AUSTRALIA'S SILENT ASSASSIN

CAUTION CAUTION CAUTION

'We can't just accept that we'll get sicker and fatter every year forever'

Sports medico Dr Peter Brukner talks to **ANITA BEAUMONT** about the health scare that inspired his mission to bust dietary myths and defeat diabetes

DR PETER Brukner's "cureka" moment came at a time when his days were spent on the tense sidelines of English Premier League games, scanning the field for signs of player injuries and any niggles as the head of sports medicine for Liverpool FC.

It was 2012, and if you had asked Dr Brukner OAM how he was going, he would have said he was "pretty good".

But - then aged 60 - the Melbourne doctor and Professor of Sports Medicine at La Trobe University had noticed he was getting a little thick around the middle, despite his best efforts to stay trim.

"The kids were starting to poke me in the guts and say, 'Come on Dad,'" Dr Brukner said.

"I'd just shrug my shoulders. I was eating a good, sensible, low-fat diet like I was supposed to do, and exercising regularly. I was functioning fine. I was OK. But the reality was that I probably wasn't quite as healthy as I might have let on."

At the time, the globally recognised Australian sports physician had a fatty liver, high triglyceride levels, and high insulin levels.

"I was metabolically unwell, and in retrospect, clearly pre-diabetic," he recalled. "I was overweight - borderline obese, and like many middle-aged men, I had probably put on half a kilogram a year for 30 years."

Dr Brukner had a family history of type 2 diabetes. He had seen what the chronic disease had done to his late father.

"I was pretty keen not to go down that track, and that was always in the back of my mind," he said.

Dr Brukner has worked as a sports physician for the Australian cricket team, Collingwood and Melbourne AFL clubs, the Socceroos, and the Australian athletics team during the Atlanta and Sydney Olympics.

Looking after injuries, and helping athletes prevent new ones, was a big part of his role. Then there was nutrition advice, psychology support and general medical help when the teams were competing away from home.

His athletes had a lot to lose. Money. Prestige. Opportunities. Career-ending injuries were perhaps their greatest, most significant threat.

"The pressure to make the right call for each of them, quickly and in front of millions of people watching around the world, was immense.

And it was all on Dr Brukner.

It was during his time at Liverpool FC that he decided to make a quick - potentially radical - call on his own health.

Dr Brukner had literally written the book on Australian sports nutrition - co-authoring *Food For Sport* in 1986. But as time moved on, he found sports nutrition was becoming a "bit dull".

It was essentially focused on carbohydrate and pasta parties the night before a marathon, washed down with Powerade and Gatorade during the games.

But it was stepping outside his comfort zone to dip his toe into a different way of eating that would switch his thinking "180



degrees". First for himself. Then others.

It was a personal experiment that would lead him to write the book, *A Fat Lot of Good*, and then put his name and reputation on the line to back Defeat Diabetes - an app that aims to help people improve their blood-sugar levels through diet.

"A colleague in South Africa, Tim Noakes - a very smart guy - had previously challenged accepted ideas and had been proven right," Dr Brukner said.

"So when he came out around that time and said he thought we'd been wrong about nutrition - that it was actually carbohydrates that were the problem, not fat, I remember thinking - 'Oh Tim, that can't be right.' The whole world couldn't have been wrong about nutrition for 30 or 40 years.

"But he inspired me to do a bit of reading. I started with *Good Calories, Bad Calories* by Gary Taubes, and I guess you could say that book changed my life."

Dr Brukner explained the book had addressed the fats versus carbohydrates argument, and how the politics of the low-fat movement had "won out" over the low-carb, low-sugar regime in the 1960s and '70s.

"Which I'd always assumed was on the basis of good science, good evidence," Dr Brukner said. "But in reality it was on the basis of money and politics."

We had all spent the past few decades trimming the fat off our meat and eating low-fat dairy, when there was a good argument that it was the "worst thing we could have done," because the food industry had simply replaced the fat with sugar.

"I found it really disturbing. I put that book down and thought that it just couldn't be right," he said. "It blew me away, and I needed to find out more. I dived into every book and research paper and article I could find, and the more I read the more I was convinced we'd gotten it wrong. That it was actually carbs and sugars and starches that have been the problem, not fat.

"We have had the low-fat, high sugar diet for 30 or 40 years, yet we have just gotten fatter and sicker ever since."

He decided he had nothing to lose but some excess weight, so he ran a little experiment on himself. He started and ended with blood tests. He checked his weight weekly.

"I stopped eating all sugars and starches - like rice, pasta, potato and bread - and I went back to eating the way my parents and grandparents had eaten - meat and fish and eggs and dairy, fruit and veg and nuts.



Without even trying. I was never hungry, I ate as much as I wanted to eat, and it was too easy.

"It was a breeze, and I enjoyed every meal I had. Carbohydrates make you hungry. They shoot your blood glucose up, and you pump out a whole lot on insulin, and then your blood glucose drops right down again. So two or three hours later, you're hungry again. That's why you're constantly snacking. "Fats and proteins make you feel full."

He said the fatty liver he'd had for a decade, as well as his triglyceride levels, all came back to "normal" within those three months. And he felt great.

"The only downside was that I'd gone down a size and had to buy a new wardrobe," he said. "I figured that was a small price to pay. But it confirmed to me that we had been on the wrong track. That if I could reverse all my issues in three months, surely other people could too."

He said as the weight started coming off, he began to feel more energetic. "My sleep improved. My exercise improved. I could concentrate better. I just felt better and better over those three months. At the end of it, I'd lost 13 kilograms in 13 weeks.

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HELP US CATCH AUSTRALIA'S SILENT ASSASSIN





Defeat Diabetes

<p>MEAT</p> <ul style="list-style-type: none"> Beef Lamb Pork Chicken Pancetta Prosciutto Bacon Salami Liver Brains Kidneys Heart <p>DRINKS</p> <ul style="list-style-type: none"> Water Coffee Tea Bone Broth Soda water <p>NUTS</p> <ul style="list-style-type: none"> Almonds Walnuts Brazil Nuts Hazelnuts Macadamias Pecans 	<p>VEGETABLES</p> <ul style="list-style-type: none"> Cabbage Cauliflower Broccoli Brussel Sprout Asparagus Zucchini Eggplant Olives Spinach Silverbeet Mushrooms Cucumber Lettuce Onions Capsicums Tomatoes <p>DAIRY</p> <ul style="list-style-type: none"> Cream Butter Cheese Cottage Cheese Greek Yoghurt <p>NON-DAIRY</p> <ul style="list-style-type: none"> Coconut Milk Cream Nut Butters 	<p>SEEDS</p> <ul style="list-style-type: none"> Flaxseed Chia Pumpkin Sunflower Sesame <p>FLOUR</p> <ul style="list-style-type: none"> Almond Flour Coconut Flour <p>FATS & SAUCES</p> <ul style="list-style-type: none"> Olive Oil Butter Cocoa Butter Avocado Oil Coconut Oil Lard Tallow Ghee Mayonnaise Mustard Pesto <p>SWEET</p> <ul style="list-style-type: none"> Stevia Xylitol Erythritol 	<p>FISH</p> <ul style="list-style-type: none"> Cod Crab Lobster Halibut Mackerel Mussels Oysters Plaice Salmon Sardines Scallops Shrimp <p>OTHERS</p> <ul style="list-style-type: none"> Avocado Eggs Spices Herbs Lemon & Lime Juice Dark chocolate Berries <p>FERMENTED</p> <ul style="list-style-type: none"> Kimchi Kombucha True Pickles Sauerkraut 	<p>GRAINS</p> <ul style="list-style-type: none"> Bread Cakes Cereal Chickpeas Corn Couscous Crumpets Lentils Legumes Noodles Muffins Muesli Muesli bars Oats Pasta Pastries Peas Pies Pizza Quinoa Rice Rice cakes Flour Energy bars <p>DRINKS</p> <ul style="list-style-type: none"> Fruit Juices Cordials Sports Drinks Energy Drinks Flavoured milks Tonic Water Colas Lemonade <p>ALCOHOL</p> <ul style="list-style-type: none"> Dessert wines Liqueurs Sugary mixers <p>FRUITS</p> <ul style="list-style-type: none"> Mango Pineapple Banana Grapes Dried Fruits <p>MEATS</p> <ul style="list-style-type: none"> Highly processed Hotdogs Nuggets Spam 	<p>SUGAR</p> <ul style="list-style-type: none"> Soft drink Confectionery Chocolate Cakes Biscuits Ice Cream <p>OTHERS</p> <ul style="list-style-type: none"> Margarine Flavoured yoghurts Frozen yoghurts Artificial Sweetener Anything deep-fried in seed oils <p>VEGETABLE</p> <ul style="list-style-type: none"> Canola oil Sunflower oil Safflower oil Cottonseed oil Rapeseed oil
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Dr Peter Brukner, left, wants Australians to eat real food. Above: as team medico, Dr Brukner checks Australian cricketer Michael Clarke during a Test match in 2014. Top: The Defeat Diabetes "traffic light" food guide. Pictures: Defeat Diabetes, Getty Images

He had felt "obliged" to share what he had learned.

"I'm not suggesting I discovered it - at all - but when you come across something like this, you want to spread the word and tell people," he said.

Dr Brukner began speaking at conferences, and writing about his experiences.

He founded a not-for-profit organisation called "SugarByHalf".

"Sugar is the one thing everyone agrees on - even the dietitians agree on sugar - so we developed a campaign encouraging people to reduce the amount of sugar they consume by half," he said.

"That has been going for a few years now - in schools and via a good corporate program."

Penguin approached him to write *A Fat Lot of Good*.

"Clearly, what we are doing now is not working. We are getting fatter and sicker and have been every year for the past 30 or 40 years," he said.

"If you were running a business, and your bottom line was getting worse every year for 40 years, surely at some stage you would say 'Hang on a minute, maybe we are

doing something wrong? Maybe we need to rethink things?' But no. We keep on doing the same thing, following the same diet, the same advice, and we have the same issues - only they just get worse and worse.

"It doesn't make any sense. We can't just accept that we are going to get sicker and fatter every year forever."

Dr Brukner said the "elephant in the room" was type 2 diabetes.

"It is a massive health issue in this country - and every western country. It is probably the biggest single health issue," he said.

"Traditionally, type 2 diabetes was regarded as a chronic progressive disease with no cure, no way of treating it other than medication. And its complications include kidney disease, eyesight problems, cardiovascular disease, amputations, dementia.

"But over time there has been some pretty good evidence, internationally, that treating type 2 diabetes with a low-carb diet can be very effective."

Dr Brukner had considered licensing one of the digital diabetes programs that had already garnered positive results in the UK and the US to help tackle the problem in Australia.

Instead, about 18 months ago, he assembled a core group of doctors and dietitians - backed by a panel of various medical specialists including cardiologists, public health experts, orthopaedic surgeons and gastroenterologists - to develop Defeat Diabetes.

It launched in January with hours of videos, articles, meal plans, recipes and cooking demonstrations offered by fellow sports physician, Dr Paul Mason, and accredited practising dietitian, Nicole Moore.

Dr Brukner said a simple survey of the app's initial cohort of subscribers showed that after three months, 62 per cent had put their diabetes into remission.

"Which, according to the medical profession, you couldn't do," he said. "Yet here we are showing that it can be done, that people have been able to reduce their medication or go off their insulin and get a whole lot better."

But their claims that low-carb diets can help put type 2 diabetes into remission have been met with some resistance.

Diabetes Australia has only recently released a statement defining what it accepts as "remission". The latest national diabetes strategy also conceded that remission of type 2 diabetes in adults could be achieved with dietary interventions such as "stepped food reintroduction" and low-carbohydrate diets - as well as bariatric surgery.

But the strategy says that more evidence is still needed to establish the longer-term effects of dietary-induced diabetes remission.

"The medical profession would rather chop out half your stomach as a means of losing weight than ... get you to quit carbs," Dr Brukner said. "But it is what we are taught, it is what we know, it is what we're good at, and it is very profitable."

Critics have argued that low-carb diets can rob people of much-needed fibre to prevent inflammation and bowel cancer, that they can lead to a rise in LDL (low-density lipoprotein) or "bad" cholesterol levels, and that the diet is unsustainable.

Dr Brukner disagrees. "A lot of people want to find fault with it. And I get that. If I'd been advocating a certain diet for 30 or 40 years - which I had been - it's not easy to turn around and say, 'I might have been wrong'. No one likes to admit that," he said.

"I found it very difficult to come to terms

with the fact I'd been giving the wrong advice. But ultimately, the evidence was so overwhelming that I had to take a deep breath and admit I was wrong. Science is always evolving."

Dr Brukner conceded some people had a "small rise" in LDL cholesterol, but that it was "more than compensated" by improvements in their HDL cholesterol and triglycerides.

"Which are probably even more important," he said. "Overall it has a positive effect. You can still have plenty of fibre on a low-carb diet, and I would argue that the results you get on a low-carb diet, and the way it makes you feel, is motivating enough to stay on it."

Dr Brukner said his team is embarking on some "proper research" on the efficacy of the Defeat Diabetes program through La Trobe University next year.

"We know it works. And we want to show that it works," he said. "We are doing that next year as the initial survey we did on our first cohort was just via email - so

The pharmaceutical industry and food industry are both immensely powerful in our society. They have a lot of influence on the medical profession, politics and government, and they don't want things to change. We have to counter that

Dr Peter Brukner

it's not counted as scientific research. But what it has done is given us an indication of whether we are on the right track.

"Sometimes I feel like I might be bashing my head against a brick wall with this stuff - then I'll get an email from someone saying 'You've changed my life' and it makes me realise it really is worthwhile."

But Dr Brukner said the "diabetes world" was slowly coming around.

Peak bodies globally were beginning to acknowledge that a low-carb diet was an "acceptable" approach in diabetes management.

"They are not saying it is the best yet. But, small steps. A few years ago they were all negative about it," he said.

"The pharmaceutical industry and food industry are both immensely powerful in our society. They have a lot of influence on the medical profession, politics and government, and they don't want things to change. We have to counter that.

"They have many millions of dollars to market and lobby. That's what we're up against.

"It's the tobacco debate all over again. We knew tobacco was harmful, yet the tobacco industry managed to delay and delay and delay and it took 30 or 40 years until something was done. The same thing is happening with sugar and processed food. It is a disaster. We are getting fatter and sicker. Two thirds of Australians are overweight or obese. A quarter of our kids are overweight or obese. It is tragic.

"And we know that diet is at the heart of it."

ACM, publisher of this newspaper, is partnering with Defeat Diabetes to offer readers a free three-month trial of the Defeat Diabetes app. Scan the QR code published in today's paper for details.

What you can expect on a low-carb diet

Dr Paul Mason

YOU might be surprised at some of the benefits of low-carbohydrate diets.

If you've got diabetes, you can expect **improved blood sugar levels** almost immediately. This is because most of the excess blood sugar comes directly from carbohydrates which are eaten. And simply by eating less carbohydrates, blood glucose levels can drop rapidly, even overnight. The improved blood glucose control is so pronounced that more than 50 per cent of people can reverse type 2 diabetes using low-carb diets.

It is important to note, however, that this improved sugar control may mean that you need to reduce the dose of your regular diabetes medications. Some of them, like insulin, cause your blood

sugar to drop, and if you remain on your usual dose, your blood sugar might go dangerously low. So make sure to stay in close contact with your doctor so your medication dosages can be closely monitored. Coming off medications can be great, but it's important to do it safely.

Low-carb diets also tend to **lower blood pressure**. Again, while this is usually a good thing, if you don't reduce your blood pressure medication once you don't need it, your blood pressure could go too low. And this could make you dizzy or even cause you to faint. So again, make sure you remain under the close supervision of your doctor if you're on blood pressure medication. Dietary changes can also affect blood thinning medications like warfarin, which might require a

change of dose. Again, speak to your doctor and make sure this is monitored.

I also see people commonly stopping medications for **reflux or heartburn** after starting low-carb diets. The most common type of these drugs are known as proton pump inhibitors. I was taught in medical school that these drugs have virtually no side-effects, but research shows several issues with their long-term use, including osteoporosis, pneumonia and dementia. The good thing is that reflux symptoms usually improve rapidly with low-carb diets, often in under a week. For example, a study that put probes down the throat to measure acid levels found a large reduction in acidity after just six days. But suddenly stopping these medications can lead to a rebound increase in acid

Some research suggests pain from knee arthritis might reduce by half with only 10 per cent weight loss.

secretion. So, it's best to gradually stop them with the help of your doctor.

Low-carb diets are well known for causing **weight loss**. While results can vary, typical weight loss over the first three months is usually six to 10 kilograms. People who start out heavier tend to lose weight more rapidly, with weight loss slowing as people approach a healthy

weight. It's important not to become too obsessed with the scales. Your weight may be stable, or even increase despite losing fat, because many people despite being overweight can have weak muscles and thin bones. Nutrition can improve this even without additional exercise. And that what you lose in fat might be offset by gains in muscle and bone. This seems to be more common in my female patients, who often tell me the scales aren't budging even as their clothes are getting looser. I this call a non-scale victory, and a reminder of the importance of a tape measure.

One surprising benefit of weight loss is **improved sleep**. When we lose fat around the middle, we also lose fat in other parts of our body, including our tongue. And it's a fat tongue which is

the main cause of the condition called sleep apnoea, where our airway is blocked during sleep, leading to tiredness no matter how long we spend in bed. Research shows the tongue visibly shrinking with weight loss, and I've had a lot of patients who've been able to stop using their CPAP machines for sleep apnoea after losing weight on low-carb diets.

Joint pain can also dramatically improve following weight loss on low-carb diets. Some research suggests pain from knee arthritis might reduce by half with only a 10 per cent weight loss. I've had patients cancel planned joint-replacement surgery because they no longer need it.

Low-carb diets have been shown to many conditions but always talk to your doctor, especially if you are on any prescription medication.

Fast food doesn't need to be junk

HERE are a few general rules you can apply to almost any fast-food outlet.

Stick to meat, cheese, and vegetables: Try to avoid breads, sauces and condiments.

Go for grilled, not fried: A number of fast-food restaurants now offer grilled, broiled or roasted chicken and beef options. Add a side of vegetables and you've got yourself a relatively healthy fast-food meal.

Limit the chips: Hot chips are full of starch and cooked in seed oils - not a good combination! Studies show that eating fries may trigger cravings for more.

Avoid the bun: Some places let you order a burger wrapped in lettuce leaves, or you can always remove the bun and eat the insides with a fork. Keep your burger simple, with meat, lettuce and tomato. Feeling hungry? Add some extra protein by opting for extra cheese or a double patty.

Choose salad: Salads remain some of the best low-carb items on fast-food menus. Opt for simpler salads that include meat, such as grilled chicken plus lettuce, tomato and cucumber, and ask for the dressing on the side. Avoid extras like creamy sauces, croutons, and tortilla strips. Pick a low-sugar salad dressing like oil and vinegar. You can also opt for no salad dressing if there are no healthy options.

Keep away from breadcrumbs: Chicken wings and other fried items will typically have a coating of wheat flour-based breadcrumbs. If you can, try to order your food with no breadcrumbs. Many chicken restaurants offer naked (traditional) chicken wings as an option. If you have no other choice, try to peel off the crumbs.

Watch the sauces and dressings: They are usually filled with sugar, so avoid sweet-tasting sauces and opt for fattier salad



dressings. Sometimes you can't avoid either - in some places they'll squirt tomato or barbecue sauce on automatically - so ask for no sauce or sauce on the side. Tzatziki, babaganoush, unsweetened chilli sauce such as sriracha, and tahini can be great options for healthier sauces.

Drink water: Avoid soft drinks, fruit juices and flavoured milks.

Choose breakfast carefully: Most breakfast items from fast-food outlets are loaded with carbs - toasties, pancakes, muffins, bagels, waffles and biscuits. Some fast-food outlets will have an option with eggs, bacon, mushrooms and tomatoes.

Hunger and cravings

Hunger represents the urge to eat food and is largely driven by our bodies' need for energy or nutrients. Unfortunately, when we eat the wrong foods, we often experience hunger when we already have a surplus of energy. This is largely due to the action of the hormone insulin. By eating the correct foods, insulin levels can be reduced, assisting us in losing weight without hunger.

Some patients are concerned about the lack of hunger on a low-carbohydrate diet. This is normal and skipping meals will enhance your weight loss. On the other hand, eating when you are not hungry means limits the amount of stored fat your body can burn. Don't make the mistake of "eating by the clock". If you are not



THE EXPERTS

Today's articles in our Silent Killer series on Australia's type 2 diabetes epidemic by Dr Peter Brukner and Dr Paul Mason of Defeat Diabetes look at the benefits of a low-carbohydrate diet and one of the challenges of cutting your sugar intake: cravings. ACM, publisher of this newspaper, is partnering with Defeat Diabetes to offer readers a free three-month trial of the Defeat Diabetes app. Scan the QR code in today's paper.

hungry, do not eat.

Hunger vs cravings: One problem many people have is not being able to distinguish between true hunger and cravings for sweet foods. When we eat sweet-tasting foods our brain releases a chemical called dopamine, activating neural reward pathways. Dopamine is involved in all forms of addiction and contributes to the urge to eat even when we are not hungry. Knowing this, modern food scientists produce food as desirable as possible by having their ratios of sugar, fat and salt

precisely crafted for maximal palatability (and addiction). This is said to be the "bliss point", and is why modern processed foods can be hard to resist.

Managing cravings: Unfortunately, giving in to these cravings only reinforces our addiction. To identify cravings try the "cheese test". If you think you are hungry, ask yourself if you would eat cheese, or another non-sweet low carbohydrate food. If you are just craving, and not truly hungry, you are likely to say no. You then know you are likely to be suffering

a craving. If you'd happily eat the cheese, then allow yourself to consume some healthy, low-carbohydrate food. This way you will find your cravings progressively reduce over time.

Sleep: Sleep deprivation can contribute significantly to cravings by altering levels of two key hormones which regulate hunger (leptin and ghrelin), worsening insulin resistance and impairing willpower. Studies show that those who get less than eight hours sleep per night are far more likely to binge on processed foods.

Beware 'Big Food', the new Big Tobacco

As shoppers and voters, we need to challenge the influence of ultra-processed food and drink manufacturers, argues

PROFESSOR ROB MOODIE

THE EXPERT

IF YOU walk into virtually any convenience store across Australia, you will be surrounded by wall-to-wall sugar. Row upon row of confectionery in all forms and sizes: highly sugared soft drinks, yoghurts, ice-creams, snacks and breakfast cereals. As you move towards the counter, even more appears, crowding your view. And as you pay, the cashier reminds you of the chance to buy three more "treats" for the cost of two.

You go along the street to your favourite café - the offerings change, but the sugar content doesn't: muffins, cookies, lines of delicacies jammed into the top row of the glass display cabinet.

You drive to - or through - one of the many fast-food outlets in your suburb and are surrounded by their visually appealing offerings, each one containing more calories than the last.

You walk into the supermarket, and there are two places that catch your eye: the checkout - where unhealthy food items are nearly eight times more likely to be discounted than healthy food items - and the end-of-aisle displays. Here, again, unhealthy goods

Ultra-processed food and beverage manufacturers along with their trade associations, who prioritise profits way, way ahead of people ... are squarely to blame for the very poor diets and the resultant poor health of millions of Australians.

Professor Rob Moodie

like chocolate and confectionery, chips and unhealthy drinks are designed to capture your attention and get you to reflexively stretch your hand and grab a packet.

These junk foods are officially known as ultra-processed foods and beverages. They almost aren't food at all, being made mostly from substances extracted from foods, such as fats, starches, and added sugars. They usually contain additives like artificial colours, flavours, and preservatives. Examples of these foods are breakfast cereals, frozen meals, sweet biscuits, soups, sauces and dressings, processed meat and seafood, fast food, cakes, ice-cream, frozen desserts and salty snacks. They include drinks too, like sports and energy drinks, soft drinks, juice drinks and nectars, and ready-to-drink tea and coffee. Just as we see in the United Kingdom and the United States, ultra-processed foods have taken over our shopping baskets here in Australia.

In the Australian population, nearly half of our energy comes from these ultra-processed foods. Older children and adolescents are at greater risk as they get more than half of their energy intake comes from these so-called foods and drinks.

Exploiting our addictions

This is all the result of a big game that has been going on for the past few decades, which

we, and especially our children, are being programmed by the ultra-processed food and beverage manufacturers and their retailers. In Michael Moss's new book *Hooked: Food, Free Will, and How the Food Giants Exploit Our Addictions*, the Pulitzer Prize-winning US author shows how "Big Food" is constantly innovating to manipulate and increase addiction-intensifying sensations in their products. They spend millions to design their products, generate their brand and market power, advertise to your children and to you. Then manufacturers and supermarket chains battle it out to make sure the most addictive products are placed prominently in-store, and that they're discounted so cleverly that you reckon you're getting a great deal.

Australian advertisers are highly inventive and innovative, and they get their highly persuasive messages to our children and to us through both traditional media and social media. The average Australian five- to eight-year-old is exposed to more than 800 unhealthy food advertisements on TV each year. The kings of Australian sport also double as the ambassadors of junk food and drinks. We should ask ourselves, why do sports promote such unhealthy messages?

More insidious is the advertising on social media, as it is more hidden from parental view. In many of the games children are enticed to play they are rewarded in exchange for time spent viewing full-screen ads. This form of advertising is so effective it can get children to choose a previously unfamiliar confectionary brand.

As a parent you probably have no idea how much your children are being influenced by junk food advertisers.

There are some pretty startling facts about the illnesses associated with the diets we've been advertised into: diabetes, heart disease and cancers being the main ones.

An estimated 4400 Australians a year have a foot or leg amputated due to diabetes. Imagine the headlines if this were caused by landmines. Diabetes is also the leading cause of blindness in working-age Australians. A quarter to a third of the estimated 1.8 million Australians with diabetes will develop eye disease. Imagine the outrage if this was result of a chemical spill.

What can we do about it?

So much of this is preventable. Diabetes is not inevitable. There are so many things that all of us across our community can be doing to prevent or alleviate this problem.

What can supermarkets do? They can provide much healthier checkouts that don't display chocolate, confectionery and soft drinks; place healthy food at end-of-aisle displays; allocate less shelf space to unhealthy items relative to healthy food and beverages; and they can offer fewer or lower discounts on unhealthy products.

What can sporting associations do? They can offer healthy drinks, pre-packaged snacks and sandwiches while still making healthy profits to keep their clubs running.

What can governments do?

When they make health policy, they can set nutritional guidelines excluding the corporations and their trade associations from these discussions. These entities are too compromised by conflicts of interest to be allowed to participate.



Governments can also substantially limit the advertising of junk foods and drinks to children - as has been done in the UK and elsewhere. They can develop effective front-of-pack labelling to guide shoppers to healthier alternatives. They can introduce a levy on sugar-sweetened beverages that has been adopted in 50 countries. This could then be used to support sporting associations rather than letting junk food and drink corporations sponsor them (as we did with taxes on tobacco).

They can institute effective, well-researched, long-running media campaigns that have worked so well with tobacco, road trauma and the prevention of skin cancers.

What's holding us back?

So, with all that can be done, why is so little happening? What is stopping Australia from protecting itself against diabetes?

The major cause isn't lack of hospital beds, or treatment, or ambulances - the giant elephant in the room is "Big Food". This is the constellation of ultra-processed food and beverage manufacturers, along with their trade associations, who prioritise profits way, way ahead of people. In my view they are squarely to blame for the very poor diets and the resultant poor health of millions of Australians.

We know from our experience with the tobacco industry that the greater the corporate influence, the less effective public health policies.

I have my own stories about the power of the junk-food and drink companies. In 2008 I was asked to chair the National Preventative Health Taskforce, and we were tasked with developing a strategy to reduce the damage done to Australians from poor diets, lack of physical exercise, tobacco and alcohol.

We didn't have to speak to the tobacco companies (they had been completely discredited by this stage) but we did have to include the junk food and fast-food companies, as well as the alcohol companies.

At the time I thought maybe their oft-cited mantra "we are part of the solution" was correct. But since then, over the past 13 years, all I have seen are these corporations and their trade associations delaying, lobbying, obfuscating and casting doubt on well-established

science to undermine the implementation of effective measures to reduce the harm of their products.

Not unlike the way fossil-fuel industries have undermined global (and local) efforts to diminish global warming. How do they do it? By using their lobbyists, who tread the corridors of power in Canberra in their hundreds, and through political donations.

So much so that many of our political leaders fear the corporations (and their PR, legal, tax and advertising and media cronies) more than they fear the voters (who actually are in favour of change). Interestingly, over the past 13 years, Australia has done well in reducing tobacco smoking (thanks to the lack of involvement of Big Tobacco in setting policy), and has done so poorly in reducing harmful diets and alcohol consumption.

You can make a difference

Given the institutional paralysis, it's up to us as individuals and communities. What can we do? We can learn about unprocessed and minimally processed foods (they are the ones you need in abundance) and avoid ultra-processed foods.

We can learn to be careful in supermarkets, to stick to the fresh produce sections, avoid the end-of-aisle and checkout promotions or the convenience store cashier who has been told to invite you to consume as much junk as possible.

As individuals, and even more effectively as communities, we can insist our children's schools and sporting clubs serve healthy food. We can advocate in parent groups to our local, state and federal governments to minimise the saturation levels of junk-food advertising to Aussie kids.

Diabetes is not inevitable. But it will spread even more in Australia as long as we continue to live in our sugared and ultra-processed society.

Diabetes prevalence, the loss of legs, the blindness, the associated heart disease and the premature deaths will stay with us unless we change our food environments, reduce the saturation level of advertising directed at our children, and kick the junk food manufacturers and retailers out of our national and local policy-making.

Professor Rob Moodie is deputy head and professor of public health at the University of Melbourne's School of Population and Global Health.



HELP US CATCH AUSTRALIA'S SILENT ASSASSIN



Feet first: Dr Peta Tehan, podiatrist and researcher based at the University of Newcastle, talks about diabetes-related amputations.

80 amputations a week tied to diabetes

THE EVIDENCE

Anita Beaumont

EVERY week in Australia more than 80 people undergo a diabetes-related amputation.

"The cost is around \$25,000 for an amputation, then \$8000 every year after that to the health system," Dr Peta Tehan, a podiatrist and researcher based at the University of Newcastle, said.

"But the biggest problem is that after someone undergoes a major amputation, their risk of death is around 50 per cent within five years.

"They don't survive it a lot of the time because they tend to be quite sick and have a lot of co-morbidities."

Dr Tehan said it costs more than \$600 million a year to care for people with diabetic foot ulceration - a largely preventable problem with the appropriate care and support.

"A loss of sensation, or a loss of blood flow, and then a wound that becomes infected - they are the three main things that really predict amputation," she said.

"If we can know about those and try our best to manage them, hopefully we can avoid amputation."

According to Diabetic Foot Australia's 2018-2022 national strategy, public hospital admissions, lower extremity amputations and deaths caused by diabetes-related foot disease cost the Australian health system an estimated \$1.6 billion a year.

Dr Tehan and her team of researchers are exploring new ways to test blood flow in feet to help diagnose issues earlier.

"What we want is for people with diabetes to not develop the loss of sensation or the arterial disease in the first place, which is complicated," she said.

"Ideally, you need to have really good blood-glucose control to prevent those complications from occurring. Control your weight, have a good diet, control your blood pressure and cholesterol.

"It is a lot to ask, and diabetes is complicated and lifelong. There is no holiday and people are human. But it is when the spikes in blood-glucose are ongoing and prolonged that we see those complications occurring."

Dr Tehan explained that diabetes affected multiple organ systems, including feet, which most of us take for granted.

"The problem sometimes is if people with diabetes lose that ability to sense their feet, that gift of pain is lost, so they don't know there is a problem," she said.

"That's where preventative strategies like checking your feet daily and having regular visits to the podiatrist and good footwear can help protect and make sure these complications don't occur.

"If we don't know it's there, we can't treat it. Treatment is normally things like exercise, and managing their cardiovascular risk factors - blood pressure and cholesterol, and looking at their diet."

But people with a diabetes diagnosis need not fear they were going to lose their feet.

"The majority of people with diabetes

The cost is around \$25,000 for an amputation, then \$8000 every year after that to the health system.

Podiatrist Dr Peta Tehan

never experience a foot ulcer, for instance," Dr Tehan said.

"It's a small number who do, but that number is far too high because it's preventable. Footwear is one of the biggest causes of foot ulceration."

A study into the diet quality of people with foot ulcerations found those who had been living with diabetes for more than 20 years had not seen a dietitian or diabetes educator since their diagnosis.

"So, they are not using these services that could help improve their blood-glucose control, which is contributing to the development of foot ulceration," Dr Tehan said.

"It's a missed opportunity. I think as health practitioners we need to be better equipped at managing behaviour changes and engaging with patients and enabling them to make good decisions.

"And patients need to know where they can go and get support at the right time"



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Know your fats and the healthiest ones to fuel your body

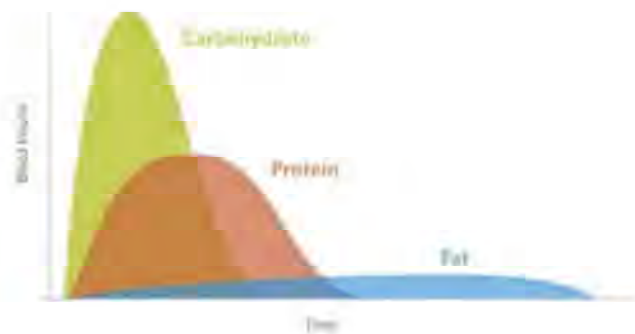
THE FACTS

Dr Peter Brukner

IN order to burn fat for fuel, we need to switch off insulin, which promotes fat storage and inhibits fat breakdown.

As you can see from the accompanying graph, eating carbohydrates causes a sharp rise in the production of insulin, protein considerably less so, while ingestion of fat is associated with minimal insulin production. So it makes sense to eat a low-carb, moderate-protein, high-fat diet.

If you reduce your carbohydrate intake to less than 30 to 50 grams a day, the body switches from using glucose as its major fuel source to using fat in the form of ketone bodies, hence the term ketogenic or "keto" diet.



So, if you want to have a high fat intake, which fats should be prioritised? We have always been told that saturated fats were the problem. But this is no longer considered to

be true. It is the polyunsaturated Omega-6 fats that are the problem. The major source of these unhealthy Omega-6 fats is vegetable oils or, as they should more accurately be

called, seed oils. When these oils are heated they are oxidised and give off toxic substances which damage the body's cells.

So if you want to burn fat for fuel, here's what you should do: 1) reduce carbohydrate intake below 50 grams a day; 2) maintain moderate protein intake; 3) increase your intake of healthy fats, and 4) decrease consumption of vegetable oils.

Healthy fats: meat, fish, seafood, dairy, eggs, nuts/seeds, avocados, olive oil, coconut oil, butter, lard, beef tallow, duck fat.

Unhealthy fats: vegetable (seed) oils, including canola, sunflower, corn, cottonseed, soy, safflower, grapeseed, rice bran oil; margarine; processed foods containing vegetable oils, such as dips, mayonnaise, canned fish in oil, hot chips, fried food, sliced bread, bakery goods.

|| This dietary information provided by Defeat Diabetes.

THE EXPERT



“Definitely reduce your junk food carbohydrates like soft drinks, lollies, cakes, takeaway, and pastries. But don’t restrict your wholegrain bread ... Far better to eat a slice of bread and not get to the point of bingeing on a burger and fries.”

- Professor Clare Collins

Nutrition and dietetics expert Laureate Professor Clare Collins, of the University of Newcastle, says the longer we continue to neglect diabetes the harder it’s going to be to fix. Picture: Marina Neil

How we can change our eating habits

Professor Clare Collins tells ANITA BEAUMONT that if you are going to reduce your carbohydrate intake begin by cutting out junk food and soft drinks not wholegrain bread.

WHEN the COVID-19 pandemic forced Australians to stay at home, we had to change our eating habits.

And we did, says Laureate Professor Clare Collins of the University of Newcastle.

Sales of fruit and vegetables increased as people spent more time preparing their own food at home, the nutrition and dietetics expert explains.

“We couldn’t go out for dinner, and people had to go out and walk because you couldn’t go anywhere.

“When we’re made to, we can change our habits. But what it tells you is that something major has to happen that makes it less attractive to go out and more attractive to do the basic things your parents and grandparents just did - which was cook with basic foods, look in the cupboard and base a meal off what you’ve got rather than ordering UberEats.”

Professor Collins says it’s been estimated that if every Australian ate as the national dietary guidelines recommend the burden of diseases caused by type 2 diabetes would be cut by 40 per cent.

“It is so stark. It is a real contrast to the lack of action,” she said.

“We used to say that for every person currently diagnosed with type 2 diabetes, there is actually another person who hasn’t yet been diagnosed. What is sad is that it doesn’t need to be the case - but the longer we go on neglecting a condition with a big



preventable component, the harder it is going to be to solve.”

A key problem the professor sees is how junk foods laden with fat, sugar, salt and preservatives “hijack” our appetites.

“We are not offered any protection from the onslaught of those foods or the marketing of them - except for the message - ‘just don’t eat it,’” she said. “And that’s everything against our biology, which - since we got up onto two legs - has been designed to find food to survive.

“That’s why you read all the horrifying statistics about more people developing obesity, and how the age is coming down when people have their first stroke, first heart attack or develop diabetes. But still, we don’t have any policies that are stepping up to address that.”

While there was evidence it was possible to put type 2 diabetes into remission with an “intensive” amount of rapid weight loss early after a diagnosis, Professor Collins

said simply quitting all carbohydrates to shed kilos was akin to “throwing the baby out with the bathwater”.

Large-scale studies in Finland, the US and China showed that a 10 per cent reduction in starting body weight - with at least half of that kept off in the longer term - could reduce the number of new cases of diabetes by nearly 60 per cent.

“Lose 10 per cent and keep off five [per cent] doesn’t sound like much,” she said. “But ... the average Australian is gaining a little bit of weight every year. To go from a trajectory of putting on a little bit of weight year in and year out to actually losing a lot of weight and keeping some of it off is a really big change in your dietary and physical activity patterns.”

People with type 2 diabetes should consult their doctor before embarking on a long-term low-carb diet.

“There is evidence for short-term restriction of carbohydrates,” she said. “Why might that work in the short term? Because it’s easier to recognise what foods have carbohydrates in them, and then you end up with a very narrow food intake. It’s a proxy for cutting down.”

But people who wanted to lower their carbohydrate intake should “make sure it’s the junk carbohydrates you are restricting, and not the wholegrain ones”.

“Definitely reduce your junk food carbohydrates like soft drinks, lollies, cakes, takeaway, and pastries. But don’t restrict your wholegrain bread, or lentils, and legumes and other wholegrain cereals, because wholegrains are protective against a whole range of other conditions like heart disease, and specific cancers - especially colon cancer.

“Far better to eat a slice of bread and not

get to the point of bingeing on a burger and fries.”

Professor Collins said reducing certain carbs and fats could help someone with type 2 diabetes but they should seek individualised support rather than rely on one-size-fits-all online diet programs promising big results that would “reverse” diabetes.

“The research is showing that with an intensive amount of weight loss, and making really big changes so your pancreas starts working better and you become more sensitive to the insulin your body is making, remission in that one-to-two year period is possible for some people,” she said.

“But most studies have used one of the fasting-type diets to achieve a rapid and big weight loss, and that type of diet needs medical and nutritional support.”

The total energy intake of some of these diets was about 500 calories a day.

“These diets can work - but they need a lot of support and they need to be supervised, because you can develop gallstones and you can develop inflammation.”

Professor Collins said after a couple of days on fasting and semi-fasting diets, the body began using its stores of glycogen.

“It’s a bit like a car - if you don’t put any petrol in the tank, it starts to get pretty low,” she said.

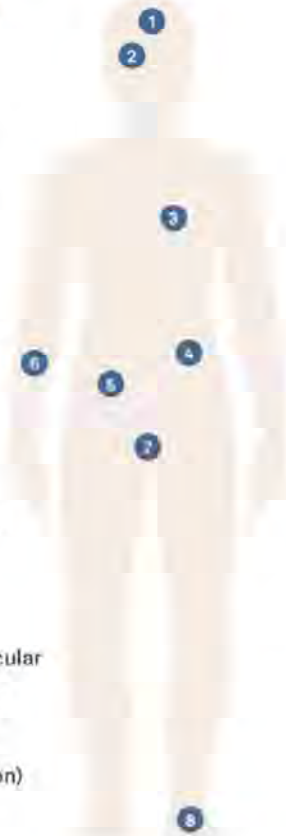
“But you are then metabolising predominantly fat stores, and when you are doing that you produce these chemicals called ketones as a byproduct.

“One byproduct - acetone, is fairly volatile, and when it goes into your blood and the blood flows through your lungs, you actually breathe it out and your breath smells like nail polish remover. There’s something about reducing ketones that helps people tolerate hunger.”

The potential damage that poorly controlled diabetes can do to the body

General high, low and widely fluctuating blood glucose levels can impact the body in several ways, potentially causing:

- 1 change in cognitive and brain function**, leading to increased stroke risk, cognitive impairment, depression, increased risk of dementia and Alzheimer's disease
- 2 eye disorders** including cataracts, damage to retina, nerve damage
- 3 heart disorders** including faster hardening of the arteries, heart attack, irregular heartbeat, high blood pressure, dizziness on standing
- 4 gastrointestinal issues** including delayed stomach emptying, diarrhoea, increased hunger, weight gain
- 5 kidneys and urinary disease or damage**, urinary tract infections, bladder not emptying
- 6 skin problems** including fungal infections, bacterial infections, diabetic rash, areas of increased pigmentation, areas of pigmentation loss
- 7 reproductive system function issues**, including fertility issues and erectile dysfunction
- 8 poor circulation (blood vessels) in the extremities**, leading to macrovascular (large blood vessel) disease, microvascular (small blood vessel) disease, peripheral nerve damage, pins and needles, muscle weakness, reduced reflexes, pain and/or numbness, slow healing (which can lead to foot problems, such as pain at rest, ulcers, gangrene and potential amputation)
- 9 increased risk of some cancers** including colon, breast, endometrial (uterine) and pancreatic.



THE CASE

People with condition often feel the shame

Anita Beaumont

DIABETES has an image problem. According to a Diabetes Australia survey, up to 80 per cent of people with diabetes report feeling blamed or shamed for having the condition.

This is perhaps felt most acutely by people with type 1 diabetes, which cannot be prevented and is not linked to modifiable lifestyle factors like diet and exercise.

The survey commissioned by Diabetes Australia revealed significant community misunderstanding about the disease.

It found as many as 85 per cent of people believed those with diabetes shouldn't eat sugary foods or drinks.

Only 43 per cent of survey respondents understood that not all people with diabetes were overweight.

Professor Greg Johnson, former chief of Diabetes Australia, says the stigma attached to type 2 diabetes was unwarranted and unfair.

"No one in Australia, no one in our community, would blame a woman for developing breast cancer - but being overweight and having an unhealthy diet is also a risk factor for breast cancer," he said.

"In fact many major cancers and chronic conditions have the same risk factors - overweight and obesity, unhealthy diets and physical inactivity.

"But with type 2 diabetes, we have a society that too often wants to point the finger at people for being overweight; that shames them with suggestions they are to blame for developing diabetes."

One of the big misconceptions was that type 2 diabetes was a disease of affluence and wealth.

"That is not true," Professor Johnson said. "In fact nearly 80 per cent of diabetes is in poor and developing nations. And it disproportionately affects socially disadvantaged people all around Australia. It is a much more complex problem."

The Australian Institute of Health and Welfare reports that type 2 diabetes is twice as prevalent among people in lower socio-economic areas - at 7 per cent - compared with the highest socio-economic areas, at 3.5 per cent.

Tiffany Petre, of The Obesity Collective, said people generally did not understand the science of obesity and related conditions like diabetes.

"We oversimplify the challenge to be just about personal choice, when there are also many strong social, biological and environmental drivers that affect people," Ms Petre said.

"There is a lot more going on than what most assume, so it would be great if people and clinicians were more aware of harmful assumptions.

"Oversimplifying the challenge by telling people to just 'eat less and walk more' - or assuming everyone should be able to figure it out on their own - isn't working.

"Stigma is harmful, unfair and actually makes matters worse in some cases where it may negatively affect people's relationship with food, exercise and healthcare."

THE EVIDENCE

Diet and exercise key to managing type 2

Professor Grant Brinkworth
Dr Pennie Taylor

TYPE 2 diabetes is the fastest-growing chronic disease in Australia, and affects the health of more than 1.5 million Australians, increasing their risk of major health complications and significantly reducing quality of life.

Many factors can contribute to the development of poor blood-glucose control and type 2 diabetes. These include non-modifiable factors - or factors that we can't control - such as age, gender, family history of diabetes and having a certain ethnic background.

However, the good news is that there are many other modifiable risks that we can control, including what we eat and drink, whether we smoke, how much exercise we do and how much sedentary time we spend in our daily lives.

These are major factors in determining your risk of type 2 diabetes and, if you already have the disease, how effectively you can control it.

In fact, diet and exercise remain the cornerstones for effectively reducing your risk of, and managing, type 2 diabetes.

Research repeatedly shows that effective diet and exercise strategies can substantially reduce your risk of type 2 diabetes, reduce your need for diabetes medication and, in some cases, even put type 2 diabetes into remission altogether.

However, all diet and exercise programs are not equal, and the vast amount and sheer variability in the information available, often from low-reputable, non-evidence-based sources feeds our desire to want to do right by our health.

But with so much confusion being generated, especially with readily available



This guide and the graphic above comes from the new book *CSIRO Low-Carb Diabetes Every Day* by Professor Grant Brinkworth and Dr Pennie Taylor (Macmillan Australia). RRP \$39.99.

access to online media, we need to have information sources we can trust and which are grounded in strong scientific evidence.

For more than 20 years, the CSIRO has

been conducting research and clinical trials into understanding the most effective diet and exercise strategies that can optimise improvements in blood-glucose control and the management of type 2 diabetes.

This information, combined with high-quality research conducted by other international research laboratories, has advanced the understanding of the effects of different foods and dietary carbohydrates, proteins and fats on weight control and risk factors for metabolic disease, including heart disease, poor blood-glucose control and diabetes.

This research has enabled us to develop an understanding of what works, and to bring you a diet and exercise plan that is based on the latest nutrition knowledge and scientific evidence for achieving effective weight control, promoting optimal health and managing type 2 diabetes.

Professor Grant Brinkworth and Dr Pennie Taylor are the authors of the bestselling *CSIRO Low-carb Diabetes Diet & Lifestyle Solution* and its new companion volume, *CSIRO Low-Carb Diabetes Every Day*.

RISK FACTORS

Non-modifiable: advancing age; gender (males are at greater risk); family history of diabetes; and ethnicity (people with Aboriginal and Torres Strait Islander, Middle Eastern, Asian, Pacific Island, Indian Subcontinent, African American, Latino or Native American background are at greater risk).

Modifiable: obesity, especially abdominal or visceral obesity (excess body fat stored in the abdominal region around organs); high blood pressure; abnormal blood cholesterol (fat) profile, such as high levels of unhealthy cholesterol - triglycerides and LDL (low-density lipoprotein) - and/or low levels of good cholesterol - HDL (high-density lipoprotein) cholesterol; elevated blood glucose levels; poor diet; low levels of physical activity and high amounts of sedentary time; excessive alcohol intake; and tobacco smoking.



Defeat Diabetes

Evidence shows a low carb approach can help send pre and type 2 diabetes into remission. Follow this handy food guide to better manage your blood sugars and find better health.

DefeatDiabetes.com.au

EAT PLENTY

MEAT • **Red Meat** Beef, lamb, pork, organ meats • **Poultry** Chicken, duck, turkey
 • **Cured** Bacon, biltong, jerky, Parma ham, prosciutto, salami **FISH** All fish and shellfish
VEGETABLES Asparagus, beans (green), broccoli, Brussels sprouts, cabbage, cauliflower, cucumber, kale, leek, lettuce, mushroom, onion, olives, capsicum, spinach, zucchini **EGGS**
FRUIT Avocado, blackberries, raspberries, strawberries **DAIRY** Cream, sour cream, all cheeses, full fat milk and Greek yoghurt (avoid reduced fat) **FATS & OILS** Butter, ghee (clarified butter), tallow (beef fat), duck fat, lard (pork fat), goose fat, coconut oil, olive, avocado, macadamia oil (dressings only) **DRINKS** Water, black coffee, tea, bone broth, soda water, mineral water

EAT SOME

STARCHY VEGETABLES Beetroot, butternut squash, carrots, peas, pumpkin **FRUIT** Apples, apricots, blueberries, lemon, limes, oranges, kiwi fruit, peaches, pears, plums, rockmelon, watermelon, tomatoes **NUTS & SEEDS** Almonds, macadamia, hazelnuts, Brazil nuts, walnuts, pistachios, peanuts, cashews, sesame seeds, chia seeds, linseed, pumpkin, sunflower, flaxseed
FLOURS Almond flour, coconut flour **CONDIMENTS** Low sugar tomato & BBQ sauce, Dijon mustard, seeded mustard, tamari, tabasco **ARTIFICIAL SWEETENERS** Natural (monk fruit, stevia, erythritol, xylitol) **ALCOHOL** Dry wines, white spirits (gin, vodka), low carb beer

EAT LITTLE

SUGAR, FAST FOOD, PROCESSED FOODS (Not limited to) ice cream, lollies, chocolate, cakes, crisps, pastries, sauces, biscuits, fruit yoghurt, muesli bars **PROCESSED MEATS** Highly processed sausages, luncheon meats **FRUITS** Mango, pineapple, banana, grapes, dried fruits
STARCHES & CEREALS Wheat, barley, rye, sorghum, quinoa, polenta, rice, corn, millet, oats, buckwheat, breakfast cereals, muesli, rice cakes, pasta, couscous, gnocchi, noodles, potatoes, potato chips, sweet potato, bread, crumpets, muffins, crackers **LEGUMES** Alfalfa, clover, peas (all types), chickpeas, lentils, mesquite, carob, tamarind, beans (soybeans, navy, mung, broad/fava, lima, lupins, kidney and borlotti) **FATS & OILS** Margarine, 'butter' spreads, vegetable/seed oils (canola, sunflower, safflower, cottonseed, rapeseed, soybean, corn)
ARTIFICIAL SWEETENERS Diet drinks, Equal, Splenda, Sucaryl **DRINKS** Soft drinks, cordials, fruit juices, sports drinks, energy drinks, flavoured milks, nut milks **ALCOHOL** Dessert wines, liqueurs, sugary mixers (tonic, cola, Red Bull), beer, cider



Find out more about sending type 2 diabetes into remission

DefeatDiabetes.com.au

HELP US CATCH AUSTRALIA'S SILENT ASSASSIN

CAUTION CAUTION

Take a weight off your joints to avoid surgery

Knee specialist Dr Doron Sher finds a low-carb, low-sugar diet helps patients lose weight and halt diabetes, NATALIE CROXON reports

THE EVIDENCE

AN ORTHOPAEDIC surgeon has found a low-carbohydrate, low-sugar diet is helping his patients defer surgery - and divert them off the path to type 2 diabetes.

Sydney knee specialist Dr Doron Sher had relatively young patients experiencing issues and knew they could avoid a knee replacement if they lost weight, because that would reduce the load on the joint.

However, he found these patients were returning to him having not lost the weight, despite their best efforts.

"So what we were looking for was something to understand why the dietary advice wasn't working and that's when we came across the whole concept of insular resistance and inflammation," Dr Sher said.

Dr Sher, working with exercise physician Dr Paul Mason, had these patients take on a low-carbohydrate, low-sugar diet that avoided processed foods.

"We finally understood why people weren't losing weight and then we could help them lose weight," Dr Sher said.

"And once they've lost weight, they then get rid of a lot of the inflammation in their body, then they don't have the knee pain and they can defer their surgery for months, years."

Many of these people would eventually need knee replacement surgery due to having already developed arthritis, he said, but having lost the weight that eventual surgery was much less risky.

They were less likely to experience anaesthetic complications, less likely to get infections, and less likely to have the artificial components put into their knee fail.

"So from every perspective, if they can lose weight and delay their surgery, they're going to be better off in the long run," Dr Sher said.

These patients are also often on track to developing type 2 diabetes, but following the diet recommended by Dr Sher's colleagues can prevent their insulin resistance getting worse and thereby halt their development of the disease.

"This diet obviously has more far-reaching benefits than just weight loss and the impact it has on their knees and other joints," Dr Sher said.

"It's like an overall health diet."

Type 2 diabetes occurs when the body becomes resilient to the effects of insulin - the hormone that converts glucose into energy - and eventually loses the ability to produce enough insulin.

While genetic risk factors play a role in the disease, Diabetes Australia says it is also often associated with lifestyle.

The risk of developing the disease is heightened for people who are overweight, have high blood pressure, do not do enough physical activity, have a poor diet, or carry extra weight around their waist (an 'apple' body shape).

Type 2 diabetes, which accounts for about 85 per cent of all diabetes and is on the rise, can lead to heart attacks, blind-

Orthopaedic surgeon Dr Doron Sher has found a low-carb, low-sugar diet has helped patients not only lose weight, but avoid type 2 diabetes.



ACM, publisher of this newspaper, is partnering with Defeat Diabetes to offer readers a free three-month trial of the Defeat Diabetes app. SCAN THE QR CODE IN TODAY'S PAPER.

ness, kidney failure, and a host of other physical and mental health complications.

Dr Sher has followed the low-carb, low-sugar dietary approach with his patients for about five years now, having practised as a surgeon for two decades.

He said he could think of at least 15 to 20 patients just off the top of his head who had lost "significant" amounts of weight following this way of eating.

While it was not a magic bullet in solving their health problems, he said it was a "very useful" tool.

Dr Sher is careful to point out that he is not a dietitian or sports medicine doctor (he refers his patients to experts in that area when they need to lose weight) but he can

outline the basic principles of a diet that helps individuals lose weight and avoid developing conditions like type 2 diabetes.

These include avoiding sugar and carbohydrates, and being aware of "hidden" sugars in processed foods.

Dr Sher said it is better for the patient to get back to a more simple diet where they are actually cooking their own food.

He said they should aim for mainly a protein-based diet - so fish, meat, chicken, seafood, along with green leafy vegetables.

"Avoid starchy foods, like potatoes and rice, certainly avoid bread ... every slice of bread has about three teaspoons of sugar in it," he said.



Do we

PROFESSOR GRANT BRINKWORTH and **DR PENNIE TAYLOR**, authors of the CSIRO Low-carb Diabetes Diet and Lifestyle Solution, answer frequently asked questions about low-carbohydrate diets to help those starting their low-carb diet journey.

CARBOHYDRATES are one of the three core macronutrients in our diet - the others being protein and fat. Carbohydrates come in three main forms:

Sugars, which are the carbohydrates

THE EXPERT

DIABETES CENTRE



Diabetes educator Annette Parkes-Considine, of Hunter Diabetes Centre, says a diabetes diagnosis is not "all doom and gloom" with the right care and support.



need carbohydrates in our diet to live?

typically found in many of the discretionary foods we eat, such as biscuits, chocolates, lollies, flavoured yoghurts, breakfast cereals, sugar-sweetened drinks, honey, fruits and fruit juices. However, naturally occurring sugar, such as fruit sugar (fructose) and milk sugar (lactose), is acceptable, as long as we consider the amount in our total daily carbohydrate allowance. These are naturally occurring, but they are sugars that will cause blood glucose levels to rise if too much is consumed.

Starches, which are essentially long chains of sugars or glucose molecules in their simplest forms, are found in plant-based foods such as breads, cereals, rice, potatoes and pasta.

Fibre, which is found in the cell walls of foods that come from plants, as well as in foods such as wholegrain bread,

wholewheat pasta, unprocessed muesli and legumes.

It is well established that fibre is important as part of a healthy, balanced diet because it promotes good bowel health and reduces the risk of constipation and bowel cancer.

So, it is not recommended to eliminate carbohydrates completely from the diet, particularly fibre. That is why the CSIRO Low-carb Diabetes Diet includes a limited amount of high-quality, high-fibre, low glycaemic index (low-GI) carbohydrate foods to ensure that the diet plan meets daily fibre recommendations.

The other important reason we eat carbohydrates is that they can be a key energy source for our body. This is because when we eat carbohydrates we break them down into glucose molecules, which we use

for energy to allow us to perform our daily living activities.

However, glucose that we don't use gets converted to glycogen and stored in the liver and muscles for later use through the action of the hormone insulin; and when our glycogen stores are full, the excess glucose is converted to fat.

This is where the issue can arise because our storage capacity of glucose is quite limited.

If excessive amounts of carbohydrates are being eaten and sufficient exercise is not performed to burn off this fuel (which is the case for many people in today's society), once glucose storage limits are reached, the excess glucose is simply converted to fat.

Over time this fat accumulates in and around our vital organs, such as the liver

and heart, which underlines many of the health problems associated with diabetes.

Unlike fat and protein, which are essential for many of our body tissue structures and functions, the main role of carbohydrate in the body is as an energy source. However, when there is not sufficient energy from carbohydrates, we simply don't just run out of energy.

Instead, the body will use protein and fat for energy. This is why following a dietary pattern lower in carbohydrates is a viable approach because we switch to using fat as our main energy source, with research suggesting this may have superior health advantages to a traditional high-carbohydrate diet.

█ An extract from *CSIRO Low-carb Diabetes Every Day*. Published by Macmillan Australia. RRP \$39.99.

Nurse calls for early action to slow the diabetes threat

Anita Beaumont

THERE is an "absolute tsunami" of type 2 diabetes hurtling towards us, and it is terrifying, Annette Parkes-Considine says.

But the registered nurse and credentialled diabetes educator is quick to point out that a diagnosis is not all "doom and gloom" as she pushes for changes allowing people to access support and medications earlier to slow, and perhaps even prevent, the progression of type 2 diabetes.

"Everyone comes to me the first time and says they know someone who knows someone who had an amputation and ended up on dialysis and went blind," Mrs Parkes-Considine, of Hunter Diabetes Centre, said.

"I give them that reassurance that with good management, the long term risks are greatly lowered. I give them the tools they need to look after their diabetes. I teach them about their medications. I teach them that while it tends to be a progressive condition, we can slow down that progression with medications, diet, and movement."

Mrs Parkes-Considine, who herself has type 1 diabetes, said one person every five minutes was diagnosed with type 2 diabetes in Australia.

"And for every one we know of, there is two who don't know they have it," she said.

With good management, the long term risks of type 2 diabetes are greatly lowered.

Annette Parkes-Considine

"But at the moment, you have to wait until you've actually developed type 2 diabetes before you can access any support.

"The person with type 2 has to have an HbA1c of seven before a lot of medications can be initiated. That needs to be lower so we can prevent the complications, so we can prevent the progression of that condition."

Mrs Parkes-Considine explained that people with pre-diabetes, or those in the early stages of type 2 diabetes, must wait until their blood sugars reached that higher level before they could access certain medications and "enhanced primary health care plans".

"These care plans offer five visits to use to see a dietitian, a diabetes educator, or another allied health service," she said.

"So they are basically waiting until that person develops diabetes before addressing these issues. But if they had access to dieti-

tians and medications before they reached those type 2 diabetes levels, we would be so much better off."

Mrs Parkes-Considine said someone close to her had been told by her GP that unless she lost weight, she was all but guaranteed to develop diabetes.

"I asked her if they'd given her a diagnosis of pre-diabetes? 'No'. Did they send you off to a dietitian? 'No'. Exercise physiologist? 'No'. Did they start you on some medication to prevent the onset of diabetes? 'No'. Did they give you any idea of how to go about losing weight, because what you're doing isn't working?' 'No'.

"I got a copy of her pathology and we went through everything. She lost weight and she is now also on medication to prevent the onset of diabetes, and - so far, so good.

"But we shouldn't be waiting to get people in that pre-diabetes phase to see a dietitian to change their diet, to move more, and start medications to slow down that progression.

"We need to be more proactive rather than reactive. We need to work as a team.

"The pressure on the health system is going to be enormous otherwise."

Mrs Parkes-Considine said that while there were a lot of diets that dangled the carrot of "remission", her advice to patients was to choose the diet right for them. The one they would stick to.

"I don't like to set people up to fail. They already feel like they are a failure anyway because they developed type 2 diabetes," she said.

"So what I always tell patients is that whatever changes we make have to be double forever.

"What we advocate is a team approach, and that includes a GP, dietitian, an exercise physiologist, a diabetes educator, and if that person has complications or hard-to-manage diabetes, an endocrine review, so we are all singing from the same hymn book."

Mrs Parkes-Considine said there was a lot of "victim blaming" when it came to type 2 diabetes.

"That really upsets me," she said. "I get a lot of 'guilty' people in my room who feel it is their fault. That they brought it on themselves. And I think a lot of that internal negativity comes from society and the generalisation of type 2 diabetes."

Mrs Parkes-Considine called for more sympathy, and empathy, while pointing out that people diagnosed with lung cancer were rarely shamed for their diagnosis, even if they had been a smoker.

"No one in their right mind would put their hand up to have diabetes," she said.

"Even skinny people can get type 2 diabetes, just like some people who are obese don't develop diabetes."

HELP US CATCH AUSTRALIA'S SILENT ASSASSIN

THE CASE

The quick and easy way to calculate those carbs

Nicole Moore
Defeat Diabetes dietitian

THERE are three types of carbohydrates:

1. Simple carbohydrates release sugar quickly into the blood, raising your blood sugar. They include honey, syrups, added sugar, coconut sugar, agave nectar, table sugar, milk, sweet foods such as soft drinks, sweet biscuits and cakes and lollies.
2. Complex carbohydrates are absorbed more slowly than simple carbs, but still impact your blood-sugar levels. Complex carbs include things like corn, bread, pasta, rice, potato and fruit.
3. Dietary fibre moves slowly through the digestive system. Very little fibre is digested, so it has little impact on your blood sugar. It can be found in fruits, vegetables and whole grains (although we don't consume wholegrains on a low-carb diet).

The key difference between total carbs and net carbs is that total carbs include all the different carbs in a food or meal - complex carbohydrates, simple carbohydrates and dietary fibre.

The net carb is the total of all carbs that the body can fully digest and convert into sugar, impacting our blood-sugar levels. Since fibre is not absorbed in our bloodstream, to get the net carb, we subtract the total fibre from the total carbs.

In Australia and New Zealand, our nutritional labels list fibre separately from carbs. So, where it states carbohydrate (per serve or per 100g), this is the same as net carbohydrate.

The Australian nutrition panel for one cup of raw almonds contains 11.8g net carbohydrate per serve. Dietary fibre (16.2g) is listed separately. To work out the total carbohydrates, you'll need to add (net) carb (11.8g) and fibre (16.2g) to get the total carb (28g).

However, the United States and Canada include fibre as part of total carbs, so when they list total carbohydrate (per serve or per 100g), it really is total carbohydrates.

The North American nutrition panel for one cup of raw almonds contains 28g total carbohydrate per serve. So to work out the net carb, subtract fibre (16.2g) from the total carb (28g) to equal net carb (11.8g).

Turn exercise pain into pleasure

Dr Peter Brukner
Defeat Diabetes founder

I have been a sports physician now for more than 30 years, so I've watched a lot of people gain enormous benefits from exercise.

I've also seen a lot of people struggle to establish an exercise habit, and even more than that, maintain it.

There is enormous benefit to regular exercise - from better sleep and mental concentration, to having more energy and just generally feeling 'better'.

But I'm not here to ramble on about why you should incorporate exercise into your life, I'm here to tell you how you can do it.

■ **Enjoyment.** It's not important what type of exercise you do, just find one you enjoy. If you like to swim, then swim. If you don't enjoy it, you won't stick at it, and are very unlikely to make this a routine.

■ **Try out different things** (walking, yoga, light weight training). Trying different things is crucial to figuring out what you do like, and this will help enormously with step one.

■ **If you're a social animal,** find someone or a group to exercise with. It's harder to not turn up for a session if someone else is expecting you, and relying on you for their own exercise. Group exercise doesn't have to be in a gym, either; there are a number of exercise classes held in parks (especially



If you're a social animal, try exercising with someone else.

during this time), as well as online if you don't fancy leaving the house at 6am.

■ **Remember it doesn't have to be vigorous!** Don't think you need to become a marathon runner, a brisk walk is completely fine.

■ **Go slowly** (for example start maybe twice a week and build up your exercise until it simply becomes a habit).

■ **Aim to slowly build up to 150 minutes of moderate activity a week,** or 75 minutes of intense activity. Try doing this by setting little targets for yourself; this could mean on Monday you try for 20 minutes of moderate exercise, then on Tuesday, you do 30 minutes, Wednesday 35 minutes, and

so on. Gradually build this up each day until it equals 150 minutes (which is really only 2.5 hours for the entire week).

■ **Make incidental walking** part of your daily routine. Try leaving the car at home if you can, and walking to the shops instead of driving. You could also park some distance from work and take the stairs instead of the lift once you get there. Any chance to get your step count up is going to give you big rewards when it comes to your fitness, because it's the little things that eventually add up and create big change.

■ **Take the stairs or at least a few flights;** whether this be

at your apartment building, inside your home, at work, wherever really! I don't expect you to walk up to the 53rd floor, but choosing the stairs where you can instead of taking the lift will again add up and your fitness will be far better off for it.

■ **Instead of meeting a friend for coffee,** suggest a walk. Meeting for a walk is a great way to get some fresh air, catch up on everyone's news and feel energised afterwards. But if you're like me, you'll still want to sneak in that coffee.

■ **Include some resistant-strength training.** This is especially important as you get older in order to maintain muscle strength and balance. This could include some light weight training, bodyweight exercises or some pilates - anything that gets the muscles activated throughout the movement. We have a whole lesson on exercise on the Defeat Diabetes program, where I take you through some basic (but beneficial) exercises.

■ **You don't need fancy**

equipment. Buying all the bells and whistles when you're beginning your exercise journey is unnecessary, not to mention expensive. And if you're hoping some shiny new equipment will keep you motivated, in my experience, that's not how it works. Start out with the basics, for example with some body weight exercises like push-ups and sit-ups, and when you do feel like progressing, look into getting some equipment, because by that stage it is likely your routine has already become a habit you'll stick to.

■ **Set goals** (for example to walk up the stairs without feeling breathless). Realistic goals help measure success and keep you motivated.

■ **Celebrate your achievements.** When you've reached your goal, celebrate it! Acknowledge how far you've come, and let those around you know you've achieved it too. After all, your support system wants you to succeed.

As a wise (and rich) man once said ... Just do it!



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Encourage eateries and supermarkets to come clean on 'bad' carbs

Juanita Greville

WE are an eat-out and eat-fast generation. Cafes, restaurants, places to grab a takeaway or a sandwich, supermarkets that stock frozen meals we can microwave are our regular haunts.

We are time-poor with a packed schedule of work, kids, exercise, family, socialising.

Cooking from scratch often isn't on the radar.

We look for shortcuts in supermarkets filled with aisles and aisles of highly processed

food that makes our lives easier, if not healthier.

And too little of it is low-carb, added sugar-free with good protein and good fats - the diet of choice to rein in diabetes.

No wonder the rate of diabetes has escalated.

Try this the next time you are in an eatery: assess how much of what is offered is "white" carb. That is, blood-sugar spikers.

You'll most likely find white bread, white rice, white potatoes (chips, anybody?),

white pastries, white cakes, white pies, white burgers, white donuts, white pizza, white noodles. The list is nearly endless.

Even pasta sauces have sugar added to them, then they are paired with white pasta.

Now look for how many "wholegrains" are offered. If you're lucky you'll find one or two on a menu unless you're in a health food joint.

You might find gluten free, but a lot of those are "white" too - white rice flour, white potato flour.

Even "wholemeal" bread is often part white refined flour.

The only good white food I've found regularly on a menu is cauliflower.

It's getting better.

"Clean eating" has become a thing and more restaurants are offering alternatives that aren't loaded with simple carbohydrates, but they can be costly. In a tug-of-war with carb-heavy, cheaper options they often lose.

I've never seen a diabetes-friendly designation on

a menu the way you see DF, GF or V, and restaurants often don't seem to stock alternatives to refined carbs (believe me, I've asked).

That's unlikely to change until more people speak up and request better choices. So the next time you or a diabetes-prone friend struggles to find something to eat on a menu, politely suggest the eatery does something about it.

If more of us do that - and we then buy it - more places will start stocking it.

Chicken and green vegetable soup

Ingredients

- 1 tbsp olive oil
- 1 leek, white part only, sliced
- 1 garlic clove, crushed
- 1L chicken broth
- ½ bulb fennel, finely sliced
- ½ cup sugar-snap peas, slices
- 1 bunch asparagus, chopped
- 1 lemon, zest only
- 200g cooked chicken, shredded
- 1 tbsp miso paste
- 3 cups spinach
- ¼ cup fresh parsley, chopped
- 30g parmesan cheese
- Salt and pepper to taste

Method

1. Heat olive oil in a medium pot over medium heat. Add the leek and garlic and cook for five minutes until soft and broken down.

2. Pour in the chicken broth and bring to a boil. Plunge in the fennel, sugar-snap peas and asparagus and reduce the heat to simmer. Leave to cook for 10 minutes.
3. Add in lemon zest, chicken, miso and spinach, allowing the spinach to wilt and chicken to heat through. This will take about five minutes. Season to taste with salt and pepper.
4. Serve with grated parmesan cheese.

Tip: This is a versatile recipe that works with many types of vegetables. It's a great way to use up anything in the crisper that needs eating.

■ Carbs 13.4g per serve, Protein 60.4g per serve, Fat 18.2g per serve, Fibre 5.5g per serve

■ Serves 2, Prep 10 mins, Cook 20 mins.

Recipes supplied by Defeat Diabetes



Ultimate low-carb lasagne

Ingredients

- 6 large zucchinis, sliced lengthways, ½ cm thick
- 1 cup mozzarella cheese, grated

Meat sauce

- 1 tbsp olive oil
- 100g bacon, chopped
- 1 brown onion, chopped
- 1 carrot, chopped
- 1 celery stalk, chopped
- 3 garlic cloves, minced
- 2 tbsp tomato paste
- 500g ground beef
- 500g ground pork
- 2 ½ cups passata
- 2 cups beef stock
- 2 bay leaves
- Sea salt, black pepper
- White sauce
- 1 cup ricotta
- 1 cup parmesan, grated
- 1 egg

Method

1. Prepare the meat sauce by heating olive oil in a large pot. Add the finely chopped bacon and allow to cook and caramelise for 5 minutes. Add the finely chopped onion, carrot, celery and garlic and cook over a medium heat, stirring occasionally, for 10 to 15 minutes.
2. Add the tomato paste and allow to cook for 2 minutes.
3. Add the beef and pork mince to the pot, breaking

up the chunks with the back of your spoon, avoid stirring too frequently. you want the meat to build up some colour.

4. Pour in passata and beef stock. Add the bay leaves.
 5. Turn the heat on high and cover with a lid, allowing the meat sauce to come to a boil. Then reduce the heat to low and leave to simmer, partially covered (just pop the lid slightly off centre) for 2-3 hours.
 6. Preheat the oven to 200°C/392°F. Place the sliced zucchinis in a grill tray or baking tray. Place in the oven for 25 mins to dry out. Set aside.
 7. Prepare the white sauce by combining ricotta, parmesan and egg in a bowl.
 8. To assemble the lasagne, spread a thin layer of the meat sauce on the base of a 18 x 28cm baking dish.
 9. Layer the zucchini slice on top and spoon a thick layer of meat sauce to cover. Spread a layer of the white sauce and a light sprinkle of mozzarella. Add another layer of zucchini to cover, followed by the meat sauce and then the white sauce and mozzarella. Continue until you run out of ingredients.
 10. Cover the top with mozzarella and bake for 40 mins, turning the oven to grill setting for the last 5 minutes to brown the top.
 11. Remove from the oven and allow to sit for 10 minutes and then serve.
- Carbs 10.9g per serve, Protein 46g per serve, Fat 37.2g per serve, Fibre 2.5g per serve
- Serves 8, Prep 30 mins, Cook 3h

Zucchini, olive and feta bread

Ingredients

- 2 large zucchinis, grated (300g of zucchini before grating)
- 2 cups blanched almond meal
- 6 sprigs thyme, fresh, leaves picked
- 2 tsp baking powder
- 2 eggs
- ¼ cup butter, melted
- 1 lemon, zest only
- ½ cup kalamata olives, pitted
- 100g feta cheese, crumbled
- 2 tbsp pumpkin seeds
- ½ tsp salt

Method

1. Preheat the oven to 180C/356F and line an 8 x 4 inch loaf tin with baking paper.
2. Place grated zucchini in a clean muslin cloth, and squeeze out as

much liquid as you can. Set aside.

3. In a large bowl combined the almond meal, thyme, salt and baking powder. Set aside.
4. Beat the eggs in a small bowl then add to the almond mixture. Pour in the melted butter and stir to combine.
5. Fold in the zucchini and lemon zest, followed by the kalamata olives and feta.
6. Spread into the prepared loaf tin. Sprinkle over pumpkin seeds and extra thyme.
7. Bake in the oven for 45 to 50 minutes until a skewer inserted comes out clean. If the skewer does not come out clean, leave it in the oven for another 10 minutes. If the top is beginning to brown too much, place a sheet of foil over the top.
8. Leave in the tin to cool for 15 minutes before turning out onto a wire rack to cool completely. Slice into 10 slices and store in the fridge for 3 days or freeze for up to 3 months.

Tip: Freeze individual slices and pop them straight in the toaster to defrost when you need a quick brekkie.

Tip: The key to this recipe is squeezing out as much liquid as possible from the grated zucchini. This will prevent the loaf from being too wet.

Tip: To prevent dryness use large or extra large eggs and blanched almond meal.

■ Carbs 7.9g per serve, Protein 8.2g per serve, Fat 22g per serve, Fibre 2.8g per serve

■ Serves 10. Prep 20 mins. Cook 55 mins



HELP US CATCH AUSTRALIA'S SILENT ASSASSIN

GP on a mission to prescribe 'real food'

THE EXPERT

Steve Evans

TYPE 2 diabetes can creep up on us quietly until it's there doing unpleasant things to our bodies we need to know more about it.

There is no reason for it to end this way as diabetes is often avoidable.

Decades before full-on diabetes strikes, people can be pre-diabetic. There are no symptoms for this but blood tests show ominous signs.

Enter the so-called Silent Assassin.

Being overweight is a risk factor, particularly when the fat is around the waist.

And so is being physically inactive.

Diabetes Australia said that type 2 diabetes "can be prevented or delayed in up to 58 per cent of cases by maintaining a healthy weight, being physically active and following a healthy eating plan".

There is agreement among doctors about this but not about the foods that are best for us.

Canberra GP Liz Fraser is on a mission to help people cut carbohydrates - bread, potato, pasta, rice, sugar and the like.

Dr Fraser says that type 2 diabetes can be reversed with a low-carb diet.

Instead of the medication which some doctors prefer, shunning carbs is an alternative in her book.

Part of her argument is that eating meat and eggs instead makes you feel fuller than if you eat starchy foods like potatoes. It's not quite weight loss without pain but her argument is that it offers full stomachs and satisfied appetites for most people.

In contrast to conventional advice, she advises patients to eat "real food".

"It's not the fat that we eat

that's the problem. It's the sugar and starch that we eat," Dr Fraser said.

"The point is to eat real foods - meat, nuts, dairy, cheese, seafood. It's not about deprivation. It's about choosing the quality of what you eat."

Co-founder of a group called Low-Carb Canberra, she's a devotee of cutting out carbohydrates like potatoes, rice and pasta, or at least cutting them down drastically.

These foods get quickly digested into glucose so they are very efficient at bumping up the amount of glucose in the blood (and remember the problem for diabetics is that they don't produce enough insulin to cope with the sugar, so the more sugar in the blood, the bigger the problem).

And, of course, one way to reduce sugar in the blood is to cut down the amount of sugar

you eat. That almost goes without saying.

There is widespread agreement among doctors that hyper-sweetened fizzy drinks are one of the causes of diabetes among young people - something which didn't happen a generation or so ago.

Instead of rice, pasta and potatoes in particular, Dr Fraser suggests meat - yes, steak and roast chicken - and oily fish. Cheese also fits into her recommended diet. It is, she says, "healthy fat".

Diabetes experts have passionate arguments and disagreements about diets. Those who blame carbs are annoyed at doctors who in their view haven't seen the light.

But all agree that the most important thing is to stop eating junk food and get away from sweetened beverages. "That's a no brainer,"

according to Professor Christopher Nolan of the Australian National University Medical School.

"Get away from high-calorie foods like biscuits, cakes, chips, take-out foods, pastries. A lot of take-out food is really bad.

"Instead, eat healthy food - fresh food. Go to the vegetable section of the supermarket, the meat section. Take it home and cook it yourself!"

It's true that fruit has sugar in it but because fruit takes effort and time to digest, it isn't as bad as mainlining sugar through fizzy drinks, fruit juices, or sweets.

"The important thing is that you move from that junk diet which is too easy to get. That's the best thing you can do - and then add exercise."

Exercise helps you lose weight - but the amount of exercise you need to com-

pensate for a Tim-Tam is substantial (about half an hour of brisk walking, depending on your weight).

But exercise has another benefit: it heightens the ability of the body to make good use of the insulin it needs.

"Exercise gets you fitter and improves your insulin sensitivity, meaning you need less insulin to process glucose" Professor Nolan said.



GP Liz Fraser encourages her patients to eat well to avoid diabetes. Picture: Elesia Kurtz



ACM, publisher of this newspaper, is partnering with Defeat Diabetes to offer readers a free three-month trial of the Defeat Diabetes app. SCAN THE QR CODE FROM THE AD IN TODAY'S PAPER

What types of food are considered low-carbohydrate?

THE FACTS

PROFESSOR Grant Brinkworth and Dr Pennie Taylor, authors of the *CSIRO Low-Carb Diabetes Every Day*, answer frequently asked questions about low-carbohydrate diets to help those starting their low-carb diet journey.

It is important to remember that hardly any foods contain only one nutrient, and most contain a combination of carbohydrates, protein and fats in varying amounts.

Typically, high-carbohydrate foods are those in the breads and cereals food group, such as rice and pasta; legumes; and starchy vegetables, such as corn, potatoes and sweet



Professor Grant Brinkworth



Dr Pennie Taylor

potato. Dairy foods, in particular milk and yoghurt, are also higher in naturally occurring carbohydrates, as are fruits (with the exception being berries).

These foods should not be avoided but consumed in controlled portions to keep your total carbohydrate level lower in your

total diet, as they do provide other nutrients including fibre and protein.

Low-carb foods include those containing less carbohydrate than those listed earlier and are also a rich source of protein: meats, fish, poultry, eggs and tofu.

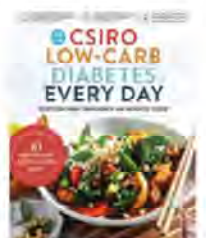
Plain cheeses are also low in carbohydrate compared to other dairy sources.

A wide range of low-carb vegetables are also good sources of fibre, including asparagus, broccoli, broccolini, cabbage, cucumber, lettuce, spinach, tomato and zucchini to name a few.

Fats and oils have virtually no carbohydrate and can also be good sources of healthy (unsaturated) fats, such as, nuts, seeds, avocados and olive oil.

Foods such as ghee, coconut oil, palm oil and processed meats and fatty meat cuts are also low in carbohydrate but are not recommended at this time because of their higher salt and saturated fat content and the continuing debate around the potential health effects of rising low-density lipoprotein cholesterol levels.

An extract from *CSIRO Low-Carb Diabetes Every Day*. Published by Macmillan Australia. RRP \$39.99.



Aussie burger bowl with tomato and basil sauce

Ingredients

- ▮ 2 teaspoons extra virgin olive oil
- ▮ 1 cos lettuce, leaves separated
- ▮ 1 large Lebanese cucumber, thinly sliced
- ▮ 250g cherry tomatoes, halved
- ▮ 2 drained tinned beetroot, cut into wedges
- ▮ 1 small red onion, thinly sliced
- ▮ ½ cup (125ml) tomato and basil sauce

Kangaroo burger patties

- ▮ 550g minced kangaroo (see note)
- ▮ 1 x 55g free-range egg
- ▮ 2 cloves garlic, crushed
- ▮ 2 teaspoons dried oregano
- ▮ 3 tablespoons almond meal

Method

1. To make the kangaroo burger patties, combine the mince, egg, garlic, oregano, almond meal and ¼ teaspoon freshly ground black pepper in a mixing bowl, then use your hands to work the mixture together well.
2. Divide evenly into eight portions, roll each portion into a ball, then flatten with the palm of your hand until 1cm thick.
3. Heat the olive oil in a large frying pan over medium-high heat.
4. Add the kangaroo burger patties, in batches if necessary, and cook for 2–3 minutes on each side, or

until cooked through.

5. Divide the lettuce, cucumber, tomatoes, beetroot, red onion and burger patties between four bowls. Top with tomato and basil sauce and serve.

Tip: Kangaroo mince is a lean meat and an excellent source of iron and protein. You can use extra-lean minced beef if you prefer.

Units per serving

- ▮ Breads, cereals, legumes, starchy vegetables: **0**; Dairy: **0**; Lean meat, fish, poultry, eggs, tofu: **1.5**; Low-moderate carb vegetables: **3.5**; Healthy fats: **3**.
- ▮ Serves 4; Preparation: 15 minutes; Cooking: 6 minutes; Difficulty: Easy



Chicken fattoush salad with almonds and mint

Ingredients

- ▮ 2 rectangular wholemeal mountain bread wraps, torn into 5 cm pieces
- ▮ ½ cup (90g) natural Greek-style yoghurt
- ▮ 2 tablespoons white wine vinegar
- ▮ 1 tablespoon sumac
- ▮ Juice of ½ lemon
- ▮ 400g roasted lean chicken breast, shredded (see note)
- ▮ 500g cherry tomatoes, halved
- ▮ 1 baby cos lettuce, roughly chopped
- ▮ 5 radishes, thinly sliced
- ▮ 4 spring onions, thinly sliced
- ▮ ½ cup roughly chopped flat-leaf parsley, plus extra to garnish
- ▮ ½ cup roughly chopped mint, plus extra to garnish
- ▮ 2 teaspoons sesame seeds
- ▮ ½ cup (80g) unsalted roasted almonds, roughly chopped

Method

1. Preheat the oven grill to high.
2. Spread the mountain bread over a large baking tray and grill for 3–4 minutes, until golden brown. Set aside.
3. Combine the yoghurt, vinegar, sumac,

lemon juice and ¼ teaspoon freshly ground black pepper in a small bowl to make a dressing.

4. Place the chicken, tomato, lettuce, radish, spring onion, parsley, mint, sesame seeds, most of the almonds (reserving a few for garnish) and the toasted mountain bread in a large bowl and toss gently to combine.
 5. Add the yoghurt dressing and toss again gently.
 6. Divide the salad between four bowls, top with the extra herbs and the remaining almonds, season with freshly ground black pepper and serve.
- Tip:** You can cook your own, or purchase pre-roasted whole chicken or cooked shredded chicken at the supermarket. Find them in the deli section.

Units per serving

- ▮ Breads, cereals, legumes, starchy vegetables: **0.5**; Dairy: **0.5**; Lean meat, fish, poultry, eggs, tofu: **1**; Low-moderate carb vegetables: **2.5**; Healthy fats: **2.5**.
- ▮ Serves 4; Preparation: 10 minutes; Cooking: 4 minutes; Difficulty: Easy

Cashew Weet-Bix and yoghurt whip

Ingredients

- ▮ 2 x 20g Hi-Bran Weet-Bix
- ▮ 100g natural Greek-style yoghurt
- ▮ 1 cup (250ml) calcium-enriched almond milk
- ▮ 1 tablespoon cashew butter (see notes)
- ▮ 1 teaspoon pure vanilla extract
- ▮ ¼ teaspoon ground cinnamon, plus extra to sprinkle
- ▮ 160g strawberries, thinly sliced (see notes)

Method

1. Blitz the Weet-Bix, yoghurt, almond milk, ½ cup (125ml) water, cashew butter, vanilla, cinnamon and half the strawberries in a blender on high, until smooth and well combined.
2. Serve in two glasses with the remaining

strawberries on top, sprinkled with a pinch of cinnamon.

Tip: As strawberries are a low-carb fruit, you can use them in your low to moderate-carb vegetable list. When purchasing nut butters, it is important to look at the food label. A good-quality nut butter will have no added sugar and less than 400 mg salt per 100g (moderate salt) or less than 120 mg per 100g (low salt).

Units per serving

- ▮ Breads, cereals, legumes, starchy vegetables: **1**; Dairy: **1**; Lean meat, fish, poultry, eggs, tofu: **0**; Low-moderate carb vegetables: **1**; Healthy fats: **2**.
- ▮ Serves 2; Preparation: 7 minutes; Cooking: Nil; Difficulty: Easy



HELP US CATCH AUSTRALIA'S SILENT ASSASSIN

CAUTION CAUTION CAUTION

THE CASE Food for thought: are our national dietary guidelines really fit for purpose?

Some experts say the Australian Dietary Guidelines need an overhaul in light of our epidemic of type 2 diabetes.

ANITA BEAUMONT weighs the differing perspectives,

DOUR national nutrition guidelines give carbohydrates too much space on the plate in light of Australia's type 2 diabetes crisis?

That's the view of some of the prominent contributors to our Silent Assassin series, which has been exploring the causes and consequences of the type 2 diabetes epidemic stalking millions of Australians.

Eye surgeon Dr James Muecke and sports physician Dr Peter Brukner have questioned why the official Australian Dietary Guidelines give so much weight to carbs and suggest the current recommendations are contributing to a rapid rise in type 2 diabetes.

British television presenter and author Dr Michael Mosley expressed similar concerns in his recent TV series for SBS.

But not all nutrition and diet experts agree.

Overseen by the National Health and Medical Research Council, the Australian Dietary Guidelines are under review - the current ones were published in 2013 - but the process is not due to be completed until 2024, and there are fears our diabetes problem will worsen while we wait.

An ophthalmologist who has made it his personal mission to raise awareness of diabetes as Australia's leading cause of preventable blindness, 2020 Australian of the Year Dr Muecke says type 2 diabetes is a disease of carbohydrate intolerance but Australians - including those with the disease - are "being told" to follow a high-carb diet under the existing guidelines.

"We are all being encouraged to consume up to 65 per cent of our daily intake of calories as carbs, despite the fact there's no evidence to show that such an eating pattern can prevent type 2 diabetes," he said.

Dr Muecke claims the dietary recommendations, which inform national policy, are born out of "weak and unreliable epidemiological data", and that the science behind the guidelines was biased "at multiple levels".

"This body of scientific evidence, on what Australians should eat to achieve health, is certainly not as robust as we've been led to believe," he said.

"The guidelines discourage the eating of foods containing natural saturated fat, and this has in turn led to the production of thousands of 'low-fat', 'fat-free', and 'cholesterol-free' products. It has spawned an entire industry. Many of these food-like substances are highly processed and loaded with sugar and refined carbohydrates to enhance the flavour lost by removing fat. And to replace the satiety factor of fat.

"For the first time in our history, we are overfed but undernourished."

Helping the unhealthy

Dr Brukner, former team doctor for the Australian Olympic and cricket teams and founder of Defeat Diabetes, said the current dietary guidelines "get a lot right" in terms



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of restricting sugar and ultra-processed and processed foods.

But the insistence that saturated fats should be restricted, and the focus on higher carbohydrate foods needed to be addressed.

"They claim the dietary guidelines are for 'healthy Australians', and healthy Australians are probably in the minority," he said.

"Most people, especially older people, have some sort of metabolic abnormality like diabetes, hypertension, things like that. Yet the guidelines don't address those issues at all. And there are no other guidelines for those people, so by default, they tend to go with these ones anyway.

"If they got the guidelines right, they'd actually be appropriate for healthy and unhealthy people."

While he understood the process of reviewing and establishing new national nutrition guidance took time, he worries that chronic conditions like type 2 diabetes will worsen in the interim.

"Every day counts," Dr Brukner said. "But the important thing is that they get these guidelines right this time. I'm just not confident they will."

Dr Mosley criticised the Australian Guide to Healthy Eating Diagram in his TV series, *Australia's Health Revolution*. He suggested carbohydrates took up "too much" of the daily recommended diet.

He suggested the carbohydrate portion of the guidance took up "too much" of the daily recommended diet.

"We were taught to pile our plates with starchy foods, but it's the white refined carbs in this food group that can really make your blood sugars soar," Dr Mosley said. "If you're healthy, you can certainly eat starchy foods. But if your blood sugars are raised, you might want to cut them down."

'Unholy trinity' of fat, salt, sugar

But nutrition expert Laureate Professor Clare Collins, of the University of Newcastle, says it isn't the proportion of healthy carbohydrates that is the problem, but rather the "sometimes" food group - pictured just off the

Meeting the challenges of diabetes

THE EXPERT

Justine Cain

The COVID-19 pandemic has taught us a lot. We have seen, over the past two years, how strong the Australian health system is. Time and again our health system has innovated and adapted to meet evolving challenges. Potentially many thousands of lives have been saved.

That gives me hope we can meet the challenges of the 21st century's other health epidemic, diabetes.

There are now more than 1.9 million Australians currently living with all types of diabetes and that number continues to increase. Almost 120,000 people have been diagnosed with all types of diabetes in the past 12 months alone. It is a serious lifelong chronic condition that can have a massive impact on mortality and cause a range of debilitating complications. It is a contributing factor in more than 10 per cent of all deaths in Australia and is the leading cause of vision loss, limb amputation, kidney failure and heart disease.

Diabetes also comes with a hefty price tag. It is currently estimated to cost the Australia economy almost \$17 billion per annum but that will rise as more people develop the condition in the years ahead.

The good news is we know what needs to be done. The new National Diabetes Strategy 2021 - 2030 outlines clear policies that can reduce the impact of diabetes and, as the COVID-19 pandemic has shown, great things are possible when we focus on meeting a health challenge.

First, as a community we need to do more to prevent type 2 diabetes. We know type 2 diabetes can be prevented or delayed in up to 58 per cent of people. A number of Australian states are currently running type 2 diabetes prevention programs, but we need national leadership and access to funding to achieve a national impact. Concerningly, there are almost 2 million people who are living with prediabetes and are at high risk of developing type 2 diabetes. We need to help as many people as possible reduce their risk.

We can also do more to ensure people are diagnosed early so the condition can be managed. Up to 500,000 people are living with silent, undiagnosed type 2 diabetes. A number of hospital-based programs have cost-effectively diagnosed tens of thousands of people who might otherwise only have become aware

of the condition when a serious complication started to develop. Adopting these programs more broadly would have major impact.

Reducing the impact of complications is an area that requires urgent action, particularly coming out of COVID-19, where lockdowns and other pandemic measures disrupted normal health care. Australia already has world-class diabetes blindness prevention (KeepSight) and amputations prevention (FootForward) programs. We can take what we have learned from these programs and apply them to other challenges like reducing the impact of chronic kidney disease on people with diabetes.

In the past couple of years there has been welcome attention on improving the quality of care in residential aged care. One area we would like to see more focus on is improving the specialised diabetes care residents can access. At least 20 per cent of people in residential aged care live with diabetes. They have a right to high-quality consistent aged care wherever they live in Australia. This is essential to giving people the quality of life they deserve.

Finally, we need to do more to address the impact of diabetes on First Nations communities where people are up to four times more likely to develop type 2 diabetes and much more likely to die from the condition. First Nations people are developing type 2 diabetes younger than ever which makes them even more susceptible to complications. We need to offer culturally appropriate support and care much earlier to give people the best chance of minimising the impact of the condition.

Meeting the challenges of the diabetes epidemic will not be easy, but nor is it impossible. We have seen what our health system can achieve when it is focused on meeting the challenges of a health epidemic, and we can do it again.

Justine Cain, right, is group CEO of Diabetes Australia.



diagram's "plate": the chocolate, chips, soft drinks, pies, biscuits, cakes and ice-creams.

"Those foods, which aren't even on the plate, is where the unholy trinity of fat, salt and sugar come from - and on average they make up one-third of our dietary intake in Australia," Professor Collins said.

"It has even been quantified that if we could click our fingers and magically get people to eat like the recommendations suggest - where the biggest change is upping the vegetables and fruit, and decreasing the junk foods - the burden of disease attributed to diabetes would drop by 40 per cent.

"People, to me, are looking in the wrong place. They are chasing a false notion that

the problem is with the Australian Guide to Healthy Eating quadrant that has the healthy carbs. It's not. The problem is the ultra-processed junk foods that dominate our diet.

"If people were more open-minded and looked at the evidence, they wouldn't be focusing on what food groups to cut out from the core foods. They'd be going after ultra-processed foods - some of which are now so processed, the combinations of how they hit your taste buds are not found in nature and that's why they are hyper-palatable and you can't stop eating them."

Professor Collins says only one person in 20 eats the recommended amount of vegetables and fruit.

Australian Guide to Healthy Eating

Enjoy a wide variety of nutritious foods from these five food groups every day.

Drink plenty of water.

Grain (cereal) foods, mostly wholegrain and/or high cereal fibre varieties

Lean meats and poultry, fish, eggs, tofu, nuts and seeds and legumes/beans

Use small amounts



Source: www.eatforhealth.gov.au

Only sometimes and in small amounts



Vegetables and legumes/beans



Fruit

Milk, yoghurt, cheese and/or alternatives, mostly reduced fat

who have spent four to five years at university to be able to help people implement the best available evidence," she said.

"Yet we don't put any checks in place for the companies that shove ultra-processed food down people's throats.

"There is something fundamentally wrong that we can flood the food supply with what's not good for us and what is contributing to our national disease burden, without providing any way of at least letting people get the advice personalised to them to help them deal with it."

A spokesperson for the National Health and Medical Research Council (NHMRC) said the current review of the Australian Dietary Guidelines would take about four years, anticipating the new guidelines would be released mid-2024.

The process to appoint members to the expert review committee involved "many steps," including scrutiny by the independent Dietary Guidelines Governance Committee.

Nutrition an 'evolving science'

"Nutrition and the evidence which underpins the Australian Dietary Guidelines is an evolving science," she said.

"New evidence and the need to improve dietary patterns has prompted the Australian government to seek a review of new evidence and revise the 2013 guidelines. Reviewing the guidelines will ensure that Australians are provided with the most current evidence, as well as practical information on the recommended dietary patterns for good health.

"One of the challenges with the current guidelines is that less than five in 100 people eat enough vegetables and fruit. NHMRC will carry out a range of activities to make sure all relevant information is considered and prioritised for inclusion in the review."

The review would include: a "stakeholder survey" to understand how the guidelines were used and identify possible topics for review; scoping of literature to determine if new evidence was available to add further support or question recommendations in the current guidelines; and a review of dietary guidelines from other countries.

"The expert committee represents a wide range of expertise to ensure the evidence and the final recommendations are accurate and appropriate for Australians," the NHMRC spokesperson said.

"The review process also includes a number of quality checks to ensure that the dietary guidelines meet the NHMRC standards including: independent methods experts, risk of bias assessments, public consultation, independent expert review and consideration by NHMRC Council.

"It is not possible to pre-empt the outcomes of the review at this stage."

A spokesperson for Dietitians Australia said the national guidelines were intended as a "framework" for eating among the healthy population, as well as those with common health risks such as excess weight.

"They are not intended to provide prescriptive dietary advice for those who have a medical condition," she said. "For those experiencing type 2 diabetes, we recommend they gain individualised dietary advice from an Accredited Practising Dietitian."

Professor Collins said Australia hadn't had a national nutrition policy since 1991. A national nutrition and physical activity "document" is due to be released imminently.

"But again, it's not a policy but a plan," she said. "Guidelines that are just words on a page that don't spill across to policy that relates to the food supply are toothless, really. We really need a nationally funded and implemented policy that goes across sectors and settings and ages and stages and chronic disease risk; one that looks at the food supply and nutrition-related health in a way that really is promoting health and wellbeing for the Australian community."

"And those are the proportions we know really reduce your chronic disease risk," she said.

"My concern is that when we ignore all the junk foods that are off the plate, and say, 'Oh it's that proportion there on the Australian Guide to Healthy Eating that's focusing on healthy carbs' that is the problem. The trouble then is that people get that message of not eating 'evil' bread and potatoes, and when they realise they can't stand it, they don't go looking for a couple of slices of wholegrain bread, they are much more likely to binge on junk foods.

"The message needs to be that yes, the ultra-processed carbohydrate foods that are also high in salt, high in added sugar and high in unhealthy fats - we definitely should cut down on them.

"If we avoid those, and focus on the less processed carbohydrates, the burden of disease would drop enormously.

"You can have all the diagrams you like and argue about whether that percentage of the carbs should be smaller or bigger, but that is not the issue. The issue is you have to kick the junk foods off average Australians' plates so they are not the main driver of diet-related ill

health. Not just in our country, but in most high-income countries in the world."

Professor Collins says the evidence for low-carb diets demonstrates that those strategies can help people "get started".

"But in the long term, it's about coming back to a dietary pattern that boosts your nutrient intake as well as one that you can live with permanently," she said. "And in all those patterns, the main focus is avoiding the ultra-processed foods."

Reviewing the guidelines

As one of three team leaders involved in "systematic reviews" during the development of the 2013 national dietary guidelines, Professor Collins had a team of 30-plus dietitians with PhDs on the task.

"There were 55,000 abstracts that we had to screen - something like 22 systematic reviews - and we generated 180 evidence-based statements. It was a really strict process. Those statements were then used by the committee to generate the guidelines.

"It is a huge, laborious, costly, hard-work task, and when people criticise it glibly, it shows they haven't had the experience... of

these type of systematic reviews."

Professor Collins is not involved in the current review.

"The reason it took so long for them to appoint a new expert committee was because they checked everyone's credentials, and even their research grants, so you could not get on the committee if you had worked with the food industry," she said.

"Lots of people would have had their feelings hurt by not being selected. I've been around for a long time, and I have worked with different companies doing contracted reviews, so someone like me would not get picked.

"Last time there were some people from the food industry - and that was the government's choice, not the committee's choice - and this time there are absolutely no representatives from the food industry, and that should be applauded."

Professor Collins said Medicare offered chronic disease plans that allowed five visits to allied health professionals - but less than 1 per cent were for dietetic consults.

"So we don't even refer people to what has been shown to work - which is medical nutrition therapy counselling by the people

HELP US CATCH AUSTRALIA'S SILENT ASSASSIN

Surgery when there's no other option

THE CASE

Anita Beaumont

BARIBIATRIC surgery is often a last resort for type 2 diabetics who have "tried everything" but experts say its effects on insulin levels tend to be immediate and sustained.

Diabetes educator Annette Parkes-Considine, nutrition and dietetics Laureate Professor Clare Collins, and obesity surgeon Dr Dhan Thiruchelvum all agree that better early education about what constitutes a healthy diet and lifestyle is necessary to tackle the type 2 diabetes crisis from the ground up in Australia.

But better and more affordable access to the medications and surgeries that can help people with type 2 diabetes live a longer, healthier life was also vital.

"Bariatric surgery needs to become more accessible and affordable," Mrs Parkes-Considine, of Hunter Diabetes Centre, said.

"We know that it's not an easy option, but in a lot of cases, there is no other alternative. They've tried everything.

"But you pretty much need to have private health insurance to get it. A lot of people are having to take money out of their super to have the surgery that will help them - and that's not fair."

Laureate Professor Clare Collins, of the University of Newcastle, said there was evidence that supported people adopting healthier lifestyles for diabetes prevention, for management of chronic disease and treating obesity - but it was "very difficult" to access this support.

"We have evidenced-based treatment - bariatric surgery

- but you can't get it if you're from a low socioeconomic background because it is not available in a public hospital," Professor Collins said.

Bariatric surgery includes laparoscopic adjustable gastric band, sleeve gastrectomy and gastric bypass operations. The surgery allows only small meals, that satisfy like larger ones.

It is considered a highly effective treatment for obesity where diet and exercise haven't resulted in weight-loss. In terms of diabetes, its effects are immediate.

Dr Thiruchelvum, of Newcastle Weight-Loss Surgery, explained that a day after bariatric surgery, he was already adjusting patients' medications for diabetes.

"This is because there are the immediate effects of the bariatric surgery, and then there are the weight loss ef-

We know that it's not an easy option, but in a lot of cases, there is no other alternative. They've tried everything.

fects," Dr Thiruchelvum said.

"The immediate effects are seen straight away. On day one after surgery, we are already reducing their insulin or stopping their oral hypoglycaemics, because there are weight-independent factors of how bariatric surgery works."

He explained that changes in hormones - essentially

"gut signalling" hormones - changed the way the body processed sugar.

In 2014-15, there were about 22,700 admissions to hospital for weight loss surgery, up from about 9300 in 2005-06. About 90 per cent were performed in private hospitals.

Dr Thiruchelvum said the population had become overly reliant on processed and ultra-processed foods.

"There is a very poor understanding of how bad a lot of these food groups are," he said.

"We are just not made to eat highly refined, processed food. But they are quick and convenient, and they come be someone's entire diet."

Dr Thiruchelvum said while surgery may seem extreme, the complication risks of bariatric surgery were "no different" to the

removal of a gallbladder.

"Once people become morbidly obese, there is nothing that works as effectively as bariatric surgery for the amount of weight that is lost, and also the persistence of that weight loss," he said.

Dr Thiruchelvum said a lot of problems with nutrition started during childhood.

"If you were a small child and raised on an ultra-processed diet and that is all you know, and you were never educated about a normal diet and you became obese, as hard as you try - most will struggle to get their weight down and keep it off," he said.

"I have a box of tissues in my consulting room for the fact that so often patients will get upset because they blame themselves for the problem - because that is what society says - and that stigma is prevalent"

What to know about breakfast

THE EXPERT

Dr Peter Brukner

REAL foods - such as meat, fish, eggs, dairy, vegetables, fruit, nuts and seeds and olive oil - are nutrient dense and good for your health.

The same cannot be said for processed foods, which usually contain empty calories, as well as significant amounts of our two main enemies: sugar and vegetable oils.

Processed foods usually contain one or more of the following:

- sugar (or sugar equivalents)
- unhealthy fats (especially vegetable oils)
- artificial flavourings
- emulsifiers

"Processed" covers all foods that are pre-boxed or in wrappers, and includes processed grains.

Think of products like breakfast cereals, baked goods, chocolate and other confectionery, ice-cream, cakes, biscuits and crackers, popcorn and corn chips, potato chips, sugar-sweetened beverages, diet drinks, fruit juice, margarine, pasta, pizza, rice, bread and grains, honey and commercial sauces and dressings.

Breakfast cereals

Most children and many adults start their day with a breakfast cereal.

These cereals are marketed heavily to children with free giveaways and dubious health claims.



SUGAR CONTENT OF POPULAR BREAKFAST CEREALS

The World Health Organisation recommends a daily sugar intake for children of no more than 6 teaspoons a day.

Cereal	Teaspoons of sugar per serve (50g)
Frosted	5
Froot Loops	4.75
Coco Pops	4.5
Crunchy Nut	4
Nesquik Cereal	3.75
Sultana Bran	3.5
Just Right	3.5
Nutri-Grain	3.25
Milo Cereal	3.25
Sustain	2.5
All-Bran	2
Special K	1.75
Cheerios	1.75
Carmen's Fruit and Nut Muesli	1.5
Corn Flakes	1
Rice Bubbles	1
Weet-bix	0.5
Vita Brits	0.05



No parent concerned about the health of their child would give them dessert for breakfast. And yet that's exactly what most breakfast cereals are.

Above you will see a table of the most popular breakfast cereals in Australia from lowest to highest

sugar content, with the number of grams of sugar per 100 grams, and the teaspoons in a typical serving (50 grams).

The World Health Organisation recommends a daily sugar intake for children of no more than 6 teaspoons a day.

A child starting the day with a serve of Coco Pops or Frosted is already close to the ideal daily amount of added sugars.

Breakfast biscuits, which are basically breakfast cereal that can be eaten without adding milk, are becoming increasingly popular.

Popular brands include Red Tractor, My Yummy Lunchbox and Belvita as well as the cereal

equivalents (NutriGrain, Weet-Bix etc). These biscuits contain 15-30 grams of sugar per 100 grams, or 2-4 teaspoons of sugar per 50 gram serving

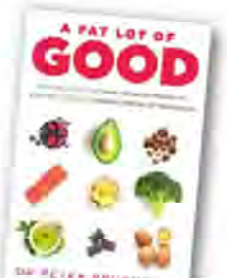
Liquid breakfasts are also full of sugar.

A 250 ml box of Up&Go, for example, contains 19.1 grams of sugar or 4.8 teaspoons.

One box of Up&Go on the way to school or work and you're already close to your recommended sugar intake for the day! Up&Go also contains sunflower and canola oils as well as a thickener, maltodextrin, with an extremely high GI.

Just stick to real food.

Dr Peter Brukner is a sports medicine clinician and founder of Defeat Diabetes. This is an edited extract from his book **A Fat Lot of Good** (Penguin Life, RRP \$34.99).



HELP US CATCH AUSTRALIA'S SILENT ASSASSIN

Pour some sugar (tax) on me: Could diabetes rates be curbed by a health levy?

THE CASE

Anita Beaumont

PROPOSALS to introduce a sugar tax to address obesity and other chronic health problems like diabetes are a "last century solution to a modern-day problem," the Australian Beverages Council says.

Given sugar-sweetened drinks offer "no nutritional value", organisations including Diabetes Australia, the Cancer Council, the Heart Foundation, Stroke Foundation and Kidney Health Australia have all previously called for these products to attract a tax - or health levy - in a bid to raise "hundreds of millions of dollars" a year to fund prevention programs.

But the chief of the Australian Beverages Council, Geoff Parker, says this tax would not only hurt households, but have little impact on the rates of obesity and diabetes.

"This type of discriminatory and regressive tax lacks any evidence from anywhere in the world in providing public health benefits," he said.

"Countries that have introduced similar taxes have failed to see a meaningful impact on obesity and diabetes rates, and many have repealed them - including Denmark, Norway and other Nordic countries.

"Residents in the UK also aren't getting thinner or lowering the incidence of diabetes since the UK's sugar tax, and prevalence rates of obesity in Mexico have increased since they introduced their tax.

"This lack of real-life evidence is one of the reasons the federal government doesn't support a tax on households, particularly at a time when many families are facing extreme hardship because of the economic impacts of the pandemic."

Mr Parker said calls for a tax on sugar-sweetened

drinks also ignored recent peer-reviewed research in the *Journal Nutrients* that showed that over a 20-year period, Australians were drinking 30 per cent less sugar as they shifted to low- or no-sugar beverages like sparkling and plain water.

"In fact, since 2015 sales of low/no sugar drinks have exceeded those of regular sugar drinks and the gap continues to widen," he said.

The industry's "sugar reduction pledge", launched in June 2018, was a commitment by the nation's largest drink companies to reduce sugar across their portfolio by 20 per cent by 2025 - a goal he said the industry was already on the way to exceeding.

"This is the first time an industry has united to reduce sugar and shows the drinks industry is stepping up to play its part and is ahead of the rest of the items in the shopping trolley in being responsive and responsible," Mr Parker said.

"The drinks industry en-

We absolutely need taxation to be a disincentive.

courages other sectors of the food supply to also step up and launch their own pledges and play their part in addressing a complex, multi-factorial problem like obesity and diabetes."

Professor Greg Johnson, formerly of Diabetes Australia, said while taxing sugar across the whole food chain was "more complex", a sugar-sweetened beverage tax would have a high level of public and community support, and would be relatively easy to do.

"It could raise hundreds of millions a year, and that money could be well spent on prevention programs for a range of different health concerns," he said.

"Fundamentally, what we have to do is have a healthier food supply. Too much of our food supply - all the foods that are accessible and bought by Australians every day - is processed food with too much added fat, added sugar and added salt.

"It's not just about sugar. For diabetes, it's about all three."

In NSW, sugary drinks have been phased out of vending machines, cafes and catering services in the state's health facilities as the government attempts to reduce obesity rates.

The sale of sugary drinks was also recently banned in public hospitals in Western Australia.

Professor Johnson said more attention needed to be paid to the promotion of junk foods that were "cheap, well-marketed and over-consumed" - especially to children.

"Instead of those foods being occasional foods, they have become everyday foods.

And that's a big contributor to our health problems in Australia," he said.

"We have a complex problem here that is linked to modern lifestyles.

"People's stress levels, the foods we eat, the excessive production and promotion of highly processed foods with fat, sugar and salt; the sedentary lifestyles we live in front of screens and being less physically active - all of these things are significant contributors to this pandemic of diabetes.

"A tax on sugar isn't going to do that in and of itself. There is not one solution to a big and complex problem."

Laureate Professor Clare Collins, a nutrition and dietetics professor at the University of Newcastle, would like to see the manufacturers of ultra-processed junk foods do more to "prove the products are safe."

"Or just put a tax on them," she said.

"We absolutely need taxation to be a disincentive."

It's time to take sweet revenge

THE EXPERT

Dr Peter Brukner

SUGAR is killing us and we need to do something about it. The dietary changes we've made over the past 30 years have been a disaster for our health, leading to epidemics of obesity, type 2 diabetes and other chronic diseases.

This has largely been due to our increased intake of two foods that are detrimental to our health: sugar and vegetable oils. For many years, sugar was a luxury item - "white gold" - enjoyed only by the rich. With the industrial revolution in the 19th century, sugar refineries could produce refined sugar in large quantities at a fraction of the previous price.

This allowed the development in the 20th century of the confectionery and soft drink industries.

The major source of added sugars, especially among children and teenagers, are soft drinks, sports drinks, energy drinks and flavoured water and teas.

How much sugar do we consume?

On average, each Australian has 64 grams (16 teaspoons) of added



SUGAR CONTENT OF POPULAR SOFT DRINKS

The World Health Organisation recommends a daily sugar intake for children of no more than 6 teaspoons a day.

Drink	Serving size (ml)	Sugar (teaspoons per serve)
Coca-Cola	375	10
Coca-Cola	600	16
Sprite	600	15
Fanta	375	10.5
Solo	600	18
V Energy Drink	500	13
Red Bull	250	7
Mother	500	13
Gatorade Fierce Grape	600	9
Powerade Mountain Blast	600	8.5
Vitamin Water Essential	500	7
Lipton Ice Tea Peach	500	7

sugar per day. Teenagers consume significantly more.

In 2011-12, Australians consumed an average of 105 grams of total sugars per day. Just over half of this was free sugars (60 grams, equivalent to approximately 15 level teaspoons of white sugar) with the balance (45 grams) being the intrinsic sugars within intact fruit plus the naturally occurring sugar in milk.

Just over half (52 per cent) of all free sugars consumed were from beverages, led by soft drinks, sports and energy drinks (19 per cent), fruit juice and fruit drinks (13 per cent), with the sugar added to beverages such as tea and coffee

contributing 7.3 per cent and cordials 4.9 per cent.

At 14-18 years, the average daily intakes of free sugars were 92 grams for males and 70 grams for females (23 and 17 teaspoons respectively).

Sugar-sweetened drinks

These are the major source of added sugar in the average Australian diet, especially among teenagers. In a 2011-12 Australian Bureau of Statistics survey, almost half (44 per cent) of all Australians aged two years and over had consumed sweetened beverages on the day before: 34 per cent had drunk

sugar-sweetened beverages and 10 per cent artificially sweetened beverages (diet drinks).

In an average week, 62 per cent of Australian children drink fruit juice/drinks at least once, 58 per cent consume carbonated soft drinks, 32 per cent drink cordial and 29 per cent consume frozen drinks.

Within the Australian population, consumption of sweetened beverages increases with age from childhood, peaking in the teenage years, then declines among adults with age. More children (47 per cent) than adults (31 per cent) consume sugar-sweetened beverages.



Dr Peter Brukner is a sports medicine clinician and founder of Defeat Diabetes. This is an edited extract from his book *A Fat Lot of Good* (Penguin Life, RRP \$34.99).

HELP US CATCH AUSTRALIA'S SILENT ASSASSIN

CAUTION CAUTION CAUTION

We're fatter and sicker, but there's hope

New data shows diabetes is spiralling out of control around the globe. But there are ways Australians can reclaim their health

PETER
BRUKNER
COMMENT



Just imagine there was a medical condition that:

1. Affected 1.5 million Australians between the ages 20 and 79
2. Was the leading cause of blindness, kidney disease and amputations
3. Was thought to be closely associated with cardiovascular disease and dementia/Alzheimers
4. Was the direct cause of death of more than 23,000 Australians annually
5. Cost the country \$12.36 billion per year

And what if medical research showed there was a treatment that significantly reduced the impact of the disease and resulted in approximately half those diagnosed with the disease putting the condition into remission?

Wouldn't that be amazing? If that were the case, you would expect it to be the medical discovery of the century, on the front page of every newspaper, Nobel prizes for those who discovered it, advocated by every health practitioner, supported by governments who loved the idea of all those reduced medical costs.

If only.

The medical condition is type 2 diabetes which, according to the latest global update from the International Diabetes Federation, affects more than 8 per cent of Australian adults.

Worldwide, since 2000, the estimated prevalence of diabetes in adults has more than tripled, from an estimated 151 million (4.6 per cent of the global population at the time) to 537 million (10.5 per cent) today.

If this trend continues, the number will jump to a staggering 783 million (12.2 per cent) by 2045.

The treatment referred to above is a restricted carbohydrate eating program. By reducing the carbohydrate intake for those with type 2 diabetes, blood glucose control improves.

It is thought that persistently elevated blood-glucose levels cause many of the complications of type 2 diabetes, such as blindness, kidney disease, amputations, cardiovascular disease and dementia.

So what are carbohydrates? There are two types of carbohydrates: sugars and starches. The obvious sources of sugar are soft drinks, confectionary and the sugar you add to your tea or coffee. But sugar is everywhere.

Most processed foods contain added sugar and many foods and drinks that we have always considered "healthy", such as breakfast cereals, fruit yoghurts, fruit juice, energy drinks, flavoured milk, barbecue sauces, to name a few, are full of sugar.

Starches are just bunches of glucose molecules stuck together. When you eat starchy



food such as rice, pasta, potatoes or white bread, the body's digestive system breaks the starch down into

glucose and is absorbed by the bloodstream.

The only difference between the glucose from sugars and the glucose from starches is that the glucose from starch is absorbed more slowly into the blood.

Type 2 diabetes is a disease of carbohydrate intolerance. Common sense would suggest that the simple solution is to restrict carbohydrate intake.

Just look at the condition of gluten intolerance. Those who cannot tolerate the gluten contained in foods simply avoid gluten in their diet and usually control their disease very well.

So the official recommended diet for those with type 2 diabetes would be one that restricts the intake of carbohydrates.

Wrong.

Unfortunately, because of our belief (now largely disproven) that we need to reduce cholesterol and saturated fat in our diet, we have ignored the carbohydrate issue and recommended a low fat, high carbohydrate diet for everyone, including those with carbohydrate intolerance (diabetes).

We were told 50 years ago, on the basis of some very dubious research, that fat was



the cause of heart disease, the so-called "diet-heart hypothesis".

The food industry responded by producing a wide range of low-fat, highly processed and ultra-processed foods. Unfortunately, when manufacturers removed the fat from food, it affected the taste, so sugar was substituted for fat.

We have been on a low-fat, high-sugar diet for the past 50 years and the results have been disastrous. We have been getting fatter and sicker ever since.

We have been on a low-fat, high-sugar diet for the past 50 years and the results have been disastrous. We have been getting fatter and sicker ever since.

The 10th edition of the International Diabetes Federation Diabetes Atlas, which gathers information on the burden of diabetes from countries across the world, reports that 6.7 million adults worldwide are estimated to have died due to diabetes or its complications in 2021 - just over 12 per cent of deaths from all causes. Approximately one-third of those deaths occurred in people under the age of 60.

WORLD OF WORRY

- One in 10 of the world's adults (aged 20 to 79 years) - 537 million people - are living with diabetes. This number is predicted to rise to 643 million by 2030 and 783 million by 2045.
- 3 in 4 adults with diabetes live in low- and middle-income countries.
- Diabetes was responsible for 6.7 million deaths in 2021 - 1 every 5 seconds.
- Health spending on diabetes grew to at least \$US966 billion globally - a 316% increase over the past 15 years.
- 541 million adults have impaired glucose tolerance, which places them at high risk of type 2 diabetes.
- In Australia diabetes affects more than 8 per cent of adults.
- More than 23,000 Australian deaths in 2021 were attributable to diabetes.

Source: International Diabetes Federation Diabetes Atlas 10th edition December 2021. Picture: Shutterstock



The overall direct cost of diabetes worldwide is \$1.344 trillion, a 316 per cent increase in cost over the last 15 years.

These figures demonstrate why, more than ever, we urgently need to revise our dietary advice: to stop demonising cholesterol and fat; reduce the intake of processed and ultra-processed foods; and get back to eating the way our grandparents used to eat before the era of ultra-processed junk food.

We need to focus on meat and fish, non-starchy vegetables and low-sugar fruits such as berries, eggs, full fat dairy and nuts.

Results from low-carb programs in the United Kingdom and United States have shown high remission rates of type 2 diabetes, and preliminary results from our Australian Defeat Diabetes program show similar encouraging results.

Low-calorie meal replacements and bariatric surgery have also been shown to be effective in reducing the impact of type 2 diabetes.

However the former is difficult to sustain due to constant hunger, while the latter is associated with significant side effects and is very much a last resort.

The fats and proteins in a low-carb eating program prevent hunger, making the low-carb option sustainable for the longer term.

Fortunately, there are now increasing numbers of people with type 2 diabetes who have benefited from a low-carb lifestyle and are influencing their doctors and dietitians to re-examine how they manage those with type 2 diabetes.

Type 2 diabetes is, I believe, the biggest single health challenge we face in this country. Fortunately, there is now hope for the thousands of Australians with this condition.

Professor Peter Brukner is the author of *A Fat Lot of Good* (Penguin Books) and founder of Defeat Diabetes

TYPE 2 DIABETES Podcast examines epidemic

How changing her diet helped nurse Jen reclaim her health

Tom Melville

AS A registered nurse, Jen Avery knows all about the complications that can come with type 2 diabetes.

As one of almost 2 million Australians living with type 2 diabetes, she admits those complications worry her.

"I do feel anxiety because you know what can happen," the 63-year-old said. "You know about kidney disease, you know about diabetic retinopathy, you know about peripheral neuropathy, and the increased risk of heart disease. You know all of that stuff."

Ms Avery shares her story in the latest instalment of the ACM podcast, *Voice of Real Australia*. The episode also features Newcastle University nutrition expert Laureate Professor Clare Collins and sports medicine clinician and Defeat Diabetes founder Dr Peter Brukner, prominent contributors to ACM's Silent Assassin series on the causes and consequences of Australia's type 2 diabetes epidemic.

Ms Avery traces her diabetes to the years after the birth of her first child. Worried her polycystic ovaries would make it difficult to conceive again, she saw a fertility specialist.

"The specialist suggested that I take some medication, and that medication just banged the weight on me," she recalled. "And then from then on, that was my downhill slide. I started to get high blood pressure and then

insulin resistance and then, bang, I've got type 2 diabetes."

People living with the condition face a range of terrifying potential complications - including having limbs amputated, strokes, heart attacks and going blind.

The annual cost to Australia's health system has been put at \$20 billion.

Despite the huge burden and rising cases, with the right treatment and management, people with type 2 diabetes can lead long and healthy lives.

One of the medications often used is insulin, a hormone produced naturally by the body which helps with glucose absorption. When the body doesn't make enough insulin or doesn't use it properly, insulin can be prescribed.

Ms Avery says insulin doesn't work for her and she feels doughy and sluggish when she's on it.

"Insulin and I equals 'let's put on 20 kilos without even thinking about it,'" she says. "I'm not saying that insulin isn't a good treatment, because it's all we've got, and it can make a big difference to people's lifestyles. But with me it wasn't working. All it was doing was putting me in the cycle of putting on weight, and then having to have the insulin increase because of the increased weight."

At her heaviest, she weighed 116 kilograms. But changing her diet helped Ms Avery come off insulin entirely.



Jen Avery with her husband Alan. Jen shares her story of living with type 2 diabetes on the latest instalment of the Voice of Real Australia podcast.

She began following the Defeat Diabetes program in late 2020, including its recipes for low-carb and healthy-fat meals. Since then, she has lost a significant amount of weight and her diabetes is now in partial remission.

There are two other medications she takes but is working with her endocrinologist to come off those too. She now weighs about 80 kilograms.

"I discovered that my body responds to low-carbohydrate high-fat and that's how I can lose weight and that's how I can manage my blood-sugars," she said. "I'm learning to make lots and lots of better choices."



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Legislation Policy and Programs

Aboriginal and Torres Strait Islander Children and Families Advocate (Executive Level 1.2) Position Number: E1226

The Justice and Community Safety Directorate (JACS) is seeking applications from suitably qualified people for the role of Aboriginal and Torres Strait Islander Children and Families Advocate. The role will operate differently from other executive roles, as it is expected that the Advocate will work autonomously and have the ability to express independent views to improve services for Aboriginal and Torres Strait Islander children and families, while adhering to public service values and expectations.

Working with children, families, community and across government, the Advocate will seek to improve services and outcomes for Aboriginal children and families involved in the care and protection system, through systemic and individual advocacy.

This is an interim role created to support Aboriginal and Torres Strait Islander children and families ahead of the statutory office of ACT Aboriginal and Torres Strait Islander Children and Young People Commissioner being created. A co-design process is currently underway with respect to that statutory office.

Remuneration: The position attracts a remuneration package ranging from \$227,836 to \$237,649 depending on the current superannuation arrangements of the successful applicant. This includes a cash component of \$196,249 (Executive 1.2).

Contract: This position will be available for up to nine months.

Eligibility/Other requirements: This is a designated position in accordance with s42, Discrimination Act 1991 and is only open to Aboriginal and/or Torres Strait Islander people. Aboriginal and/or Torres Strait Islander heritage is considered essential and therefore a Confirmation of Aboriginality may be requested.

Contact Officer: All enquiries regarding this position should be directed to Gabrielle McKinnon (02) 6205 31258 or via email to gabrielle.mckinnon@act.gov.au

For further information, please visit www.jobs.act.gov.au

Applications Close: Friday 18 February 2022.

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NATIONAL DIABETES WEEK

Why this GP is going against the grain

THE EXPERT VIEW

Dr Liz Fraser

DID you know that when farmers want to fatten cattle or pigs, they feed them grain? Wagyu beef, anyone?

Or if you want to give a goose a fatty liver, you force corn down its throat? Hmmm, paté de foie gras.

Have you ever wondered why many dietitians insist that you eat porridge with banana to lose weight? Why do they give you meal plans with 45 per cent to 65 per cent of your dietary daily energy as carbohydrates?

The Australian Dietary Guidelines, that's why. But is that really going to get your weight or diabetes under control? Let's consider some basic biochemistry.

Carbohydrates like starch in grains might not taste sweet but they consist of long chains of glucose, which is a kind of sugar. Once you chew and swallow the starch, your digestive tract breaks it down into glucose which quickly appears in your blood. We call it blood glucose or blood sugar.

As the accompanying table shows, how the sugar equivalents of the carbs you eat might affect your blood sugar is shocking.

Now I'm going to say something outrageous: Glucose. Is. A. Poison.

It's not a potent poison. We can buy it by the kilo. And it's not a fast poison. It kills you very slowly. The many complications of diabetes such as damage to the heart, brain, eyes, kidneys and nerves are driven by high blood sugar, and can be prevented by keeping blood sugar within the normal range.

Because glucose is a poison, our bodies carefully control how much glucose is in our blood. At any one time, there should be only one teaspoon (about four grams of glucose) in your five litres of blood.

So imagine what happens when you eat lots of carbs in foods made from grains. How does your body manage when 15 or 20 teaspoons of sugar from your meal of porridge and banana, or rice or pasta surges through your blood three times a day for a couple of decades?

In order to cope with those blood sugar surges, your pancreas goes into overdrive, producing lots of insulin, the blood sugar-lowering hormone. But high levels of pancreatic insulin means that you will store the excess dietary sugar as fat in your liver (just like geese) and in your muscles (like that cow, or pig). So, you get fat. (Humans are not so different to other animals.)

RECIPE FOR 'NO-GRAIN' BREAD

Baking it easy: no need to dread life without bread

Dr Liz Fraser

WHILE I used to love the smells from bakeries, these days they don't interest me.

Years ago, I noticed that the aroma of freshly baked bread promised plenty but failed to deliver what I really needed: satisfaction.

Porridge never stuck to my ribs. I was hungry and reaching for a snack by 10.30am. That stopped when I first quit carbs.

An omelet with cheese, bacon and veggies at breakfast easily gets me through to lunch. No need for biscuits or a muffin by mid-morning.

While I might not eat bread these days I still enjoy baking, especially in winter.



Dr Liz Fraser says she knows some folk "will go ballistic" when she suggests grains are not essential in your diet. Picture: Elesia Kurtz

Food Item	Glycaemic index	Serve size g	How does each food affect blood glucose compared with one 4g teaspoon of table sugar?
Basmati rice	59	150	10.1
Potato, white, boiled	96	150	9.1
French fries baked	64	150	7.5
Spaghetti	39	180	6.6
White boiled sweet corn	60	60	4.0
Frozen peas, boiled	51	80	1.3
Avocado	62	120	5.7
Apple	39	120	2.3
Unsalted Small slice	74	30	3.0
Broccoli	15	80	0.2
Eggs	0	60	0

Other foods in the very low glycaemic range would be chicken, oily fish, almonds, mushrooms, cheese, meat

This infographic prepared by Public Health Collaboration UK, a charity dedicated to improving public health through better lifestyle information, shows the approximate effect various foods may have on blood sugar in terms of a 4 gram teaspoon of sugar

Then one day the pancreas can no longer do its job properly. With too much sugar for too long, the pancreas pegs out and we call

it type 2 diabetes. Another name is sugar intolerance. It's a long, slow death made longer and slower by giving anti-diabetes

medications that lower blood sugar without solving the underlying problem, which is too much carbohydrate and sugars in the diet.

Exactly as the Australian Dietary Guidelines say. How did we get to this insanity? Let's call it "grainwashing" - the propaganda that grains are good for you. We know sugary cereal for breakfast is a blatant con, but the guidelines still insist that oats and banana are great, because, you know, "whole grain".

Whole grain is said to be better for you than refined grains, because the whole grain still has fibre. But when the whole grain is digested it becomes sugar in your blood. Checking your blood sugar after eating a bowl of porridge or two slices of toast will show you what happens when you consume those so-called healthy whole grains.

The Dietary Guidelines are based on studies that compare refined grains with whole grains. Unfortunately, they ignore all the research about low-carb diets that include no grains. By the way, there is no carbohydrate, including any grain, that is essential for any human diet.

You can't survive on zero protein or zero fat, but you can survive on zero carbohydrate.

Isn't it time we ditched the outdated dietary guidelines, especially for people with obesity and type 2 diabetes who are so sugar-intolerant? I know, there are some folk who will go ballistic when I suggest that you don't need any grains, or their products. But there are no essential grains, and there are many people, even whole populations, who live well without grains.

"But," I hear you cry, "I can't live without ...!" Fill in the blank: bread, rice, pasta and so on. If you've ever tried eating real, whole foods, focusing on meat, fish, poultry, eggs and cheese with non-starchy veggies and nuts, you'll know it's filling and satisfying. After a while you stop craving sugar and the soon-to-be-sugar foods like cereal, bread, pasta, rice and other starchy stuff.

If you really can't live without certain foods, there are low-carb alternatives like grain-free bread. Or you could eat real, whole foods with no grains. Plenty of us ignore the dietary guidelines and we are doing very well, thank you very much.

Dr Liz Fraser is a GP in Canberra. She writes regularly for Australian Doctor magazine about her low-carb approach for patients diagnosed with diabetes or pre-diabetes.

If you need a bread substitute there's a bazillion no-grain, low-carb recipes out there. Here is my version of Dr Peter Brukner's three-seed bread.

It uses eggs and bicarb to get a bread-like texture, a lot like pumpernickel.

It's simply sensational toasted with butter or brie melted over it. It's rich in protein, healthy fats and fibre.

And because it's made without grains, it won't mess up your blood sugar, nor leave you unsatisfied and craving more.

HOW TO MAKE NO-GRAIN BREAD

Line a rectangular bread tin with baking paper. Preheat oven to 180 degrees.

You will need 110 grams of sunflower and pumpkin seeds. Optional: soak the seeds for a few hours, then drain.

Mix the following ingredients in a large bowl:

- 110 grams of linseed, sunflower seed and almond meal (aka LSA)
 - 70 grams of coconut flour
 - 50 grams of psyllium husk
 - 50 grams of chia seed
 - 1 tablespoon of baking powder
 - half a teaspoon of salt
- Then whisk together the following wet ingredients:
- 4 eggs
 - 350 ml of water

Combine wet and dry ingredients with:

- 75 grams of butter, melted

Method: add the wet ingredients to the dry ingredients, stir in your soaked and drained seeds, then add the melted butter. Mix well to create a firm dough.

Transfer the dough to the baking tin, using your hands to fashion the loaf shape.

Bake for 40 to 45 minutes until golden and a skewer in the centre comes out cleanly.

Set aside to cool for five minutes then transfer to a wire rack to cool completely.

Enjoy with butter or cheese!

Dr Liz Fraser is a member of the advisory panel of Defeat Diabetes.

NATIONAL DIABETES WEEK

I stopped worrying and learned to love fat

THE EXPERT VIEW

Dr Liz Fraser

I AM a GP, trained to recommend low-fat diets and when these fail, to prescribe the medications that reduce cholesterol, lower blood pressure and tame unruly blood glucose.

My journey to thinking otherwise has involved unlearning decades of unhelpful and often frankly wrong information.

I had to learn how our bodies use energy. Basically, if you eat fat and have low insulin levels, then you burn fat. If you eat sugar and carbs, the resulting spike in insulin signals your body to store excess carbs as fat. And it's super-easy to overeat sugar and carbs.

For me personally, a low-fat diet with less meat, lots of whole grains, and legumes in volumes normally associated with sainthood didn't work. I experimented with what I ate, while I read and read and read nutritional science.

I stopped trusting the official dietary advice that extols the virtues of the rainbow. I focused on whole, nutrient-dense, real foods like meat (with the fat), chicken and fish, eggs, cheese, and non-starchy vegetables.

What I don't do is scoff lots of deep-fried food. Nor is what I eat obviously greasy. I've learned it's OK to sauté in butter or other animal fat and leave the skin on the chicken and the fat on the chop. Pork crackling and baked chicken skin are treats that needn't be feared. I prioritise real food and leave the processed junk well alone.

I note how I feel (better) and that I enjoy food (immensely). Fat equals flavour, as celebrity chef Kylie Kwong used to say. I feel satisfied and I don't snack. Sometimes it still feels a little bit naughty cooking with lard or coconut oil, but it tastes great while my weight is stable and my energy good.

It has been quite a journey, unpeeling the myths of saturated fat, cholesterol and heart disease. There's still much to learn about the mysteries of dietary fat, but most importantly, my food world is rich and tasty. I'm no longer afraid of the good fats.

Overcoming fat phobia

For decades many people have been terrified of fat. Not just body corpulence, but dietary fat. There are few things scarier than your GP saying "Your cholesterol is a bit high". In our collective minds, eating fat = cholesterol = imminent heart attack. The cure is obvious: go on a low-fat diet, lose weight, lower your cholesterol, live forever.



Since 1984 or so, we've had low-fat dietary guidelines which recommend don't-eat-the-chicken-skin, cut the fat off your steak and chops, use low-fat dairy, and if you must, a scrape of cholesterol-lowering margarine. All this is supposed to keep us healthy. When it doesn't, cholesterol lowering medications in the polypharmacy (many pills) will keep our hearts ticking.

So how come we have record levels of chronic disease, including type 2 diabetes, obesity and fatty liver disease? And why are we seeing these once adult-only problems in children? In the US, it's estimated that only 12 per cent of the adult population is metabolically healthy. So, almost nine in every 10 adult Americans have at least one metabolic problem, such as obesity, high blood pressure, cholesterol problems, diabetes or pre-diabetes or fatty liver.

And Australian adults are not far behind the US. What went wrong?

Frankly, the low-fat dietary guidelines are wrong. Eating less fat does not help when that fat is replaced with sugar, or things soon-to-be sugar, such as bread, rice, pasta and cereal. Lots of carbohydrates are a fast-track to the blood-glucose-insulin rollercoaster, leaving you hungry sooner.

Trying to eat less fat doesn't work if you eat ultra-processed refined carbs designed to trigger food cravings. Low-fat has not stopped the nation's metabolic health crisis. Let's have a brief tour through some of the science which suggests that low-fat guidelines are part of the problem.

Less fat, more obesity

Twenty years ago, prominent American dietary guru and academic Walter Willett observed that a substantial decline in dietary fat consumption had corresponded with a massive increase in obesity. His 2002 paper concluded that diets high in fat do not appear to be the cause of obesity and reductions in dietary fat are not the solution.

But the dietary guidelines didn't change. In 2010, a team of scientists conducted a meta-analysis of epidemiologic studies that showed no significant evidence for concluding that dietary saturated fat is associated with an increased risk of heart disease or stroke. That same year, the team showed replacing dietary fat with carbohydrate exacerbates all the metabolic problems associated with insulin resistance and obesity, such as increased triglycerides, small LDL particles, and reduced HDL cholesterol. They con-

cluded that limiting dietary carbohydrate improved all features of metabolic disease.

In 2020, a review for the *Journal of American College of Cardiology* examined the recommendation to limit dietary saturated fat. Sifting through the evidence, the authors found no benefits from reducing dietary saturated fat for cardiovascular disease and total mortality. Additionally, they noted the protective effects of saturated fats against stroke. Among their conclusions: full-fat dairy and unprocessed meat are not associated with heart disease. Meanwhile, the US Dietary Guidelines (to which Australian guidelines kow-tow) still recommend limiting saturated fat.

Despite the evidence, the myths persist. We all know that butter and fatty meats will kill you. But it's the sugar we should be scared of - and the fries, pizza, donuts, soft drinks, sweets and icecream - the cheap, convenient junk that sort of resembles food but provides little nutrition. Meanwhile, it's a national tragedy that our dietary guidelines continue to scare us away from real foods such as meat, eggs and full-fat dairy.

‡ Liz Fraser is a Canberra GP and a member of the Defeat Diabetes advisory panel.

Benefits of dietary approach to dietary disease are plain to see

COMMENT

Dr James Muecke

BLINDNESS is the most feared complication faced by people with type 2 diabetes and the one I deal with at work every day. Diabetes is now the leading cause of blindness among working-age adults in Australia.

There are three proven methods for putting type 2 diabetes into remission: bariatric surgery, very low calorie diets and low-carbohydrate diets.

Bariatric surgery involves

changes to the digestive system designed to limit caloric intake and promote weight loss. It can put type 2 diabetes into remission, but patients require lifelong dietary supplements to combat the accompanying nutritional deficiency. And it's a major abdominal procedure on a normal organ for what is in essence a dietary disease.

So, why not take a dietary approach to a dietary disease?

Very low calorie diets are 800 calorie per day starvation diets which require calorie

counting and are quite simply not sustainable as they require a lifelong demand on willpower. They are also dependent on ultra-processed food-like substances which are designed to benefit the manufacturer and are the very antithesis of real food.

Low-carbohydrate diets are my pick. There have been more than 100 controlled clinical trials that show low-carbohydrate "real food" diets work to prevent type 2 or put it into remission.

There are no such trials to show that a wholly plant-

based diet can put type 2 diabetes into remission. Low-carb diets are enjoyable, sustainable, nutritionally rich and avoid hunger and the need for calorie counting.

Ahead of the release late last year of the 2021-30 National Diabetes Strategy, I shared a database of low-carb diet studies with the expert advisory group working on the strategy, along with the plea "Should the opportunity for remission not be offered to every patient with type 2 diabetes?" I'm delighted that "remission" was

included under one of the major goals of the strategy.

Sadly, health practitioners have been band-aiding type 2 diabetes with medications that don't put type 2 into remission, don't extend life and can potentially hasten the devastating complications of this disease.

I worry that vested interests have not only shaped what we eat and driven chronic disease in our society, they've also shaped how we treat these diseases.

Eligible patients with type 2 diabetes should be given

an opportunity to put their disease into remission, an opportunity that's free from vested interests.

Healthcare professionals must be given the opportunity to guide their patients through an effective and clinically proven dietary solution to their condition.

‡ Dr James Muecke is an Adelaide-based ophthalmologist and co-founder of the eye health charity Sight For All. He was Australian of the Year in 2020.

NATIONAL DIABETES WEEK

I'm a GP who prefers to de-prescribe

THE EXPERT VIEW

Dr Liz Fraser

AGEING is a tough gig. Aches and pains, a pot belly, creaky knees, a grumpy gut, then the insidious assaults of cardiovascular disease and diabetes. Let's not forget forgetfulness, poor sleep and low mood. At times it all seems too hard.

Fortunately, the doctor has a pill for every ill. Well, almost. Doctors are trained to prescribe. We make a diagnosis and, voila, here's your prescription.

Except the pills are not the cure. At best they are mitigation, a bandaid that slows the inevitable progression of the indignities of age. What's worse, the pills have a habit of multiplying. Too many meds is called polypharmacy. We all know an older person taking handfuls of pills, and they don't seem to get better, just slowly worse.

But what if you could age healthier? Maybe the afflictions described above are not inevitable? What if they are preventable? Or reversible? What if, through the power of diet and lifestyle, the prescriptions become redundant and can be de-prescribed?

Many of the diseases of ageing can be linked to metabolic syndrome, a cluster of five conditions that tend to travel together: abdominal obesity (a fat belly); high glucose levels (not quite diabetes); high blood pressure; high blood triglycerides; low HDL cholesterol.

As a doctor, once you see one of these conditions you look for the others. But metabolic syndrome is so much more: it also clusters with other diseases such as fatty liver, depression, osteoarthritis, stroke, Alzheimer's, cancer. The list goes on, and

more of these diagnoses typically leads to more medication, unless you see that these conditions are not simply due to age, but share underlying causes, such as poor diet and lifestyle.

Then you stop seeing them as separate conditions that need another prescription and start seeing the underlying metabolic derangement. Metabolic syndrome is important because it points toward increased risk of cardiovascular disease, it's driven by excess dietary carbohydrates and it is reversible.

Diet and lifestyle are key. By "diet", I don't mean calorie restriction and living on a lettuce leaf a day. Nor do I mean tubs of porridge and bananas, so beloved of dietitians. Or more bloody legumes, or crackers with a scrape of margarine. Because, let's face it, the low-fat, high-carb dietary guidelines that Aussies have laboured under for decades are a big part of the problem.

The remarkable thing is, when you correct the metabolic problems with the right dietary approach, the metabolic syndrome and its related conditions get better. And you need much less medication.

These conditions are, in the memorable words of US paediatric endocrinologist Dr Robert Lustig, "food-able, not drug-able".

What Dr Lustig means is that the right foods can reverse the diseases of the metabolic syndrome, while the drugs are only drugging.

The dietary approach is simple: you decrease sugars, carbohydrates and processed junk foods. You focus on whole, real foods. You eat meat, poultry, fish, eggs, full-fat dairy, nuts and non-starchy vegetables. In



Jane Williams, left, with GP Dr Liz Fraser. Picture: Sithixay Dithavong

short, you ignore the dietary guidelines that say "consume lean meat, limit red meat, choose low-fat dairy and eat lots of grains".

The guidelines recommend 45 to 65 per cent of daily energy be consumed as carbohydrates. That's about 250 grams of carbs daily - the metabolic equivalent of about 60 teaspoons of sugar. Every day. That's insanity. Instead, lower-carb diets (less than 26 per cent or 130 grams of carbohydrate daily)

or low-carb diets (0 to 50 grams of carbs daily) have been consistently shown to correct all the parameters of metabolic syndrome, as well as the associated conditions.

Many of the diseases of ageing mysteriously disappear when people eat low carb. OK, it's not mysterious. It's physiology. You lower your glucose intake, reduce your body's need to produce high levels of insulin, lower metabolic stress and inflammation,

your grumpy gut improves, your waistline shrinks, blood pressure comes down, your joints ache less, and you feel better. With any luck, your doctor recognises your achievement and de-prescribes some of those pills.

It sounds like magic. But it works. As a GP, I've seen my patients do it. The right diet is powerful medicine.

Dr Liz Fraser is a Canberra GP and a member of the Defeat Diabetes advisory panel.

A CASE STUDY: JANE WILLIAMS

At age 58, Jane was ready to lie down and die. With a multitude of diagnoses, including morbid obesity (BMI of 43), pre-diabetes, high blood pressure, depression, chronic back pain and an arthritic knee, Jane's days were punctuated by painkillers, anti-depressants and other psychotropic medications.

The icing on the cake was the diagnosis of fatty liver. Jane's GP used the term "metabolic syndrome", pointing out that much of her misery could be improved with the right diet.

Jane was already working out at the gym with a personal trainer. What she did next was gradually remove the carbs from her diet. Bread was the last of the starchy carbs to go. Over two years, Jane reversed the markers of metabolic syndrome, including insulin resistance. Her liver returned to normal. In this time, she lost 28 kilograms - 26 per cent of her previous body weight. She's kept it off for four years. Even COVID didn't derail her. She wasn't super-strict. She enjoyed a faceplant into a birthday cake for her 60th. And she pays for the occasional indulgence with a flare of once familiar aches and pains.

Still, the changes she's made are enough to keep her off the orthopaedic surgeon's wait list and reduce the number of pills. And she can see how much better off she is than many of her peers, the ones for whom dietary and lifestyle change seem too hard.

Mental health the silent complication of diabetes epidemic

FOR 19-year-old Sebastian Harris, the constant pressure to be carefully managing his type 1 diabetes can feel overwhelming.

"I sometimes feel that no matter what I do, my diabetes can be extremely hard to control," Mr Harris said.

"Some weeks my blood glucose levels can be unreasonably low or unreasonably high and it doesn't make any sense, no matter what you do.

"It makes me question whether I am managing it well. I know in the long run

Nobody chooses diabetes.

Justine Cain

it will be fine but, in that moment, it's hard not to feel defeated."

Mr Harris, from the Gold Coast, was diagnosed with type 1 diabetes three years after his younger brother learned he had the same condition.

"You want to switch off and forget about it, but you

can't do that with diabetes," Mr Harris, an ambassador for Diabetes Queensland, said.

"There's no holiday from it. The consequences if you do try to ignore it can be life-threatening.

"We need to make sure people are aware of the issues, both physical

and mental."

According to data from Diabetes Australia, almost 700,000 people living with diabetes experience a mental or emotional health challenge every year.

Diabetes Australia Group CEO Justine Cain said diabetes mental health was the most prevalent, yet least recognised, diabetes complication.

"Concerningly, the latest figures show that about 400,000 people living with diabetes report difficulties accessing mental health

care," Ms Cain said.

"That's a lot of people who aren't getting the help and support they need."

Using National Diabetes Week (July 10 - 16) to highlight the issue, Ms Cain called on Australians to rethink how they viewed diabetes.

"More than 1.1 million Australians report being blamed or shamed for living with diabetes and more than 360,000 say this impacts their ability to live well with the condition," she said.

"Nobody chooses diabetes and nobody should be

blamed or shamed for living with it."

Better community awareness of mental health challenges like diabetes distress and burnout, and encouraging people with diabetes and their doctors to discuss their mental health would help.

"Diabetes mental health challenges are widespread, but they are rarely discussed as part of routine diabetes care," Ms Cain said.

"They really are a silent diabetes complication."

For more information visit headsupdiabetes.com.au