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## **FOOD FOR THOUGHT**

### **TELL-TALE TEETH: WHAT NEANDERTALS ATE**

With no toothbrushes or toothpaste let alone dental floss or oral hygiene products, Neandertal teeth were plaque heaven, that's the unsightly build up that makes teeth feel fuzzy to the tongue. Hardened plaque (dental calculus) is a goldmine for scientists who study human evolution. It "traps microorganisms that lived in the mouth and pathogens found in the respiratory and gastrointestinal tract, as well as bits of food stuck in the teeth, preserving the DNA for thousands of years," says Dr Laura Weyrich, lead author of a new paper published in the journal *Nature*. "Genetic analysis of that DNA 'locked-up' in plaque, represents a unique window into Neandertal lifestyle, revealing what they ate, what their health was like and how the environment impacted their behaviour." It also tells us they were locovores as well as omnivores.

An international team of researchers led by the University of Adelaide's Australian Centre for Ancient DNA (ACAD) and Dental School, with the University of Liverpool in the UK examined two Neanderthals from El Sidrón cave, Spain, and one from Spy cave in Belgium and found drastic differences in their diet that correlated with changes in their microbiomes. The samples range from 42,000 to around 50,000 years old.

"We found that the Neanderthals from Spy Cave in Belgium (on the edge of a steppe-like environment of grassy hills and plains, populated with megafauna) consumed woolly rhinoceros and European wild sheep, supplemented with wild mushrooms. On the other hand those from El Sidrón Cave (in dense mountain forest) showed no evidence for meat consumption, but appeared instead to have a largely vegetarian diet, comprising pine nuts, moss, mushrooms and tree bark," says Professor Alan Cooper, Director of ACAD.

"One of the most surprising finds, however, was in a Neandertal from El Sidrón, who suffered from a dental abscess visible on the jawbone. The plaque showed that he also had an intestinal parasite that causes acute diarrhoea, so clearly he was quite sick. He was eating

poplar, which contains the pain killer salicylic acid (the active ingredient of aspirin), and we could also detect a natural antibiotic mould (*Penicillium*) not seen in the other specimens.”

“Apparently, Neandertals possessed a good knowledge of medicinal plants and their various anti-inflammatory and pain-relieving properties, and seem to be self-medicating. The use of antibiotics would be very surprising, as this is more than 40,000 years before we developed penicillin. Certainly, our findings contrast markedly with the rather simplistic view of our ancient relatives in popular imagination.”

Neandertals, ancient and modern humans also shared several disease-causing microbes, including the bacteria that cause dental caries and gum disease. The Neandertal plaque allowed reconstruction of the oldest microbial genome yet sequenced (*Methanobrevibacter oralis*), a commensal that can be associated with gum disease. Remarkably, the genome sequence suggests Neandertals and humans were swapping pathogens as recently as 180,000 years ago, long after the divergence of the two species.

The team also noted how rapidly the oral microbial community has altered in recent history. The composition of the oral bacterial population in Neandertals and both ancient and modern humans correlated closely with the amount of meat in the diet, with the Spanish Neandertals grouping with chimpanzees and our forager ancestors in Africa. In contrast, the Belgian Neandertal bacteria were similar to early hunter gatherers, and quite close to modern humans and early farmers.

“Not only can we now access direct evidence of what our ancestors were eating, but differences in diet and lifestyle also seem to be reflected in the commensal bacteria that lived in the mouths of both Neandertals and modern humans,” says Professor Keith Dobney, from the University of Liverpool. “Major changes in what we eat have, however, significantly altered the balance of these microbial communities over thousands of years, which in turn continue to have fundamental consequences for our own health and well-being. This extraordinary window on the past is providing us with new ways to explore and understand our evolutionary history through the microorganisms that lived in us and with us.”

**Study:** Neanderthal behaviour, diet, and disease inferred from ancient DNA in dental calculus. *Nature* [10.1038/nature21674](https://doi.org/10.1038/nature21674)

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## WHAT'S NEW?

### TELL-TALE NUMBERS: WHAT AUSSIES ATE

Although generally not eating in a manner consistent with dietary guidelines, the CSIRO's 2016 study comparing the 1995 and 2011 national nutrition survey results found some positive changes in what Australians are consuming.

- **What's up?** Whole fruit, a greater diversity of vegetables, more beans, peas and pulses, less refined sugar, and increased their preference for brown and wholegrain cereals. Adult Australians also increased their intake of nuts and seeds. But on a less positive note, they also drank more wine (+44%). And both young and old tucked into lots more cocoa products (aka chocolate) – 32% more for younger Australians and 84% more for adults.
- **What's down?** Added sugar and butter. The reduced intake of added sugar is partly explained by a decrease in per capita consumption of sugar sweetened

beverages in Australia over time. Fruit juice consumption also markedly declined, especially for younger Australians.

**Study:** [Changes in Food Intake in Australia: Comparing the 1995 and 2011 National Nutrition Survey Results Disaggregated into Basic Foods](#)

### **TOO MUCH SUGAR AND TOO FEW NUTS?**

Too much sugar and too few nuts are killing us, apparently. That's how [press reports](#) distilled a recent paper in the *Journal of the American Medical Association*. Hype and fear about good and bad foods probably does more harm than good. Emphasizing a single food or nutrient in isolation seldom leads to better health. What does work is to pay attention to overall dietary patterns. If you have real concerns about your health and nutrition, the best help comes from working with a smart dietitian.

### **Inconvenient Facts About Australia's Sugar Consumption**

The facts simply don't support such a simple "too much sugar" story. A new study in the *American Journal of Clinical Nutrition* finds in Australia, 4 independent data sets confirmed shorter- and longer-term declines in the availability and intake of added sugars, including those contributed by SSBs (sugar sweetened beverages). The findings challenge the widespread belief that energy from added sugars or sugars in solution are uniquely linked to the prevalence of obesity. Co-author [Dr Alan Barclay](#) says that people have been listening to guidelines in Australia. Those guidelines have, since 1980, been telling people to limit sugar. These data suggest they've been doing just that. But the population has been increasing its intake of confectionary (chocolate especially) and alcohol. So, simply demonizing or taxing sugar sweetened beverages might not solve the problem of obesity.

### **In Praise of Nuts**

On the other side of the equation, exalting the life-saving virtues of eating more nuts might help the nut growers ring up more sales. But it probably won't extend our lives. And that headline about "too few nuts" is grossly misleading. In the context of a healthy dietary pattern, like a Mediterranean diet, nuts contribute to good health. By themselves, not so much. – Thanks to Ted Kyle of ConscienHealth <http://conscienhealth.org/> for this report.

**Studies:** For the paper in *AJCN*, click [here](#). The *JAMA* study of dietary patterns is [here](#), along with a worthwhile commentary [here](#).

### **GLUTEN-FREE FAD DIETS MIGHT HAVE A DIABETES DOWNSIDE**

For millions of people who don't really need a gluten-free diet, eating less gluten might have a downside. Research presented at the AHA EpiLifestyle meeting yesterday found that people who ate less gluten had a slightly higher risk of developing type 2 diabetes. The investigators found no difference in the risk of weight gain.

A gluten-free diet is a no-brainer for someone with celiac disease or confirmed non-celiac gluten sensitivity (gluten intolerance). But gluten-free fad diets have reached far beyond folks with actual gluten sensitivity or celiac disease. Some people falsely believe it will help them lose weight or magically give them better health. This new data is a useful

reminder that food fads can have a downside and becoming fixated on demonizing a particular food or nutrient can lead to surprises down the road.

This research does not prove that gluten-free diets cause diabetes. All these data show is an association, not a cause and effect relationship. Maybe gluten helps to lower diabetes risk. Or maybe people who avoid gluten eat less fiber. But it's equally possible that something else is confounding these findings. Sorting those questions out will require more definitive research. Until then, avoid gluten if you must. But unless you have a confirmed sensitivity, cutting gluten is pointless. In fact, it limits your choices for whole grains. And whole grains have real benefits for health. Thanks to Ted Kyle of [ConscienHealth](#) for this report

**Studies:** For the abstract of this study, click [here](#). Further perspectives, click [here](#) and [here](#).

## REVERSING DIABETES

“While type 2 diabetes cannot be cured as such, it can be put in to remission in people who have been newly diagnosed. We use the word ‘remission’ rather than ‘cure’ because diabetes may return years later, either due to people slowly regaining weight or simply due to advancing age,” says Dr Alan Barclay in *Reversing Diabetes* (Murdoch Books).

- Clinical trials show that around one in eight people can put type 2 diabetes into remission for between 2 and 10 years by losing a significant amount of body weight following a healthy lifestyle.
- In the medium to long term (2 to 5 years), bariatric surgery is more effective than lifestyle interventions, helping between three and seven out of 10 people to go into remission.
- A review of clinical trials has shown that short-term (2 to 3 weeks) use of insulin by those newly diagnosed with type 2 diabetes can cause medium-term (2 years) remission in about four out of 10 people.

The Diabetes Research Group in Newcastle (UK) used magnetic resonance spectroscopy and imaging to explain the abnormal storage of fat and glycogen in pancreas, liver and muscle in type 2 diabetes. Too much fat within liver and pancreas prevents normal insulin action and prevents normal insulin secretion. Both defects are reversible by **substantial** weight loss. A crucial point is that individuals have different levels of tolerance of fat within liver and pancreas. Only when a person has more fat than they can cope with does type 2 diabetes develop. In other words, once a person crosses their personal fat threshold, type 2 diabetes develops. Once they successfully lose weight and go below their personal fat threshold, diabetes will disappear.

The group's current [DiRECT study](#) is a cluster randomised controlled trial to find out how well reversal of type 2 diabetes works when done by Practice Nurses in General Practice in the UK. It will also investigate how durable the return to normal glucose control is, how people cope with the programme and what underlying changes in liver and pancreas determine outcome. If you want to find out more about it, visit the [DiRECT website](#).

**Chief investigators:** Professor Mike Lean, Professor of Human Nutrition at Glasgow University and Professor Roy Taylor, Professor of Medicine and Metabolism at Newcastle University.

## PERSPECTIVES WITH DR ALAN BARCLAY

### SUGAR DIABETES?

There is a wide-held belief that people who consume too much added refined sugar will develop diabetes. Similarly, there is a common belief that people with diabetes need to limit or avoid added sugar to manage their condition. To help address these common diabetes myths, two globally recognised experts on sugars (Dr Mike Lean and Dr Lisa Te Morenga) recently reviewed the evidence for the [British Medical Bulletin](#). They analysed the evidence using four theoretical rationales for why, in principle, added sugars might be of concern with respect to (type 2) diabetes.

#### **1. Sugar causes, or contributes to causing, diabetes.**

There is a lack of experimental evidence from randomised controlled trials in humans for a causal role for added sugars in the development of type 2 diabetes (T2DM). There is an association between consuming 1–2, 355 mL regular (i.e., 10% added sugars) sugar-sweetened beverages (SSBs) a day and the risk of developing type 2 diabetes in observational studies, but it is “...small and substantially reduced when data are adjusted for BMI [Body Mass Index].” There are also associations between consuming intensely (“artificial”) sweetened beverages and risk of type 2 diabetes, but there isn’t an association between fruit juices (which contain around 10% sugars) and risk of diabetes. “These studies provide strong evidence that the association between SSBs and T2DM relies on associated lifestyles and patterns of food and drink consumption, rather than on the sugar itself.”

They conclude that: *“given the multifactorial causes of weight gain, sugar reduction as a stand-alone action is unlikely to impact strongly on diabetes incidence.”*

#### **2. Sugar consumption aggravates glycemia with diabetes.**

Randomised controlled trials do not provide any evidence that consumption of added sugars has any detrimental impact on blood glucose management in people with type 1 or type 2 diabetes, and there is in fact some evidence that moderate consumption (less than 60g per day, or around 10% of energy) may improve glycemic control.

They conclude that: *“despite a common assumption that sugar must be hazardous for people with T2DM, the evidence says otherwise.”*

#### **3. Sugar consumption promotes macrovascular complications of diabetes.**

Randomised controlled trials provide evidence that when people with and without diabetes are given large amounts (average of 124 grams per day, or around 24% of energy) of free sugars their total, LDL and HDL cholesterol, and triglycerides, increase slightly (0.02–0.16 mmol/L), and their diastolic blood pressure increases (1.4 mm Hg). However, despite these small but statistically significant effects on cardiovascular disease risk factors “Studies among people with diabetes found no effect of SSBs on heart disease.”

They conclude that: *“the evidence supports limitation of free sugar to 10% EI [energy intake] to reduce macrovascular complications for people with T2DM.”*

#### **4. Sugar consumption promotes microvascular complications of diabetes.**

High blood glucose increases the risk of microvascular complications of diabetes like retinopathy, neuropathy and nephropathy. However, there is no evidence from randomised controlled trials that sugars increase the risk of microvascular complications of diabetes.

They conclude that: *“Reducing glycaemia does reduce the progression of microvascular complications of T2DM, but the relatively low glycaemic index of sucrose would not suggest any special role.”*

### **Lean and Te Morenga’s overall conclusion**

*“The media noise generated by belief-based claims that sugar is as toxic and addictive as tobacco or heroin arises from a poor grasp of scientific methods and evidence. The media debate has also undermined consumer understanding of healthy nutrition. There is now a widespread belief that sugar is the sole cause of rising rates of obesity and diabetes. This, unfortunately, plays directly into the hands of the food industry, by providing new opportunities for it to peddle highly processed nutrient-poor foods to confused and concerned consumers.”*

Sugar does not cause diabetes and people with diabetes do not need to avoid it completely. However, it’s prudent to consume less than 10% of energy from added/free sugars to limit unwanted calories and reduce the risk of tooth decay whether or not you have diabetes.



Alan Barclay PhD is a consultant dietitian. He worked for Diabetes Australia (NSW) from 1998–2014 and is a member of the editorial board of *Diabetes Management Journal* (Diabetes Australia) He is author/co-author of more than 30 scientific publications, and co-author of *The Low GI Diet: Managing Type 2 Diabetes* (Hachette Australia) and *The Ultimate Guide to Sugars and Sweeteners* (The Experiment, New York). You can read a review of his latest book, *Reversing Diabetes* (Murdoch Books), in [Glycosmedia Diabetes News](#)

## **VIEWPOINTS FROM THE CHARLES PERKINS CENTRE, SYDNEY UNIVERSITY**

### **WHAT’S IN THAT HERBAL MED?**

In [The Conversation](#), Dr Nick Fuller recently took a look at how complementary meds end up on the shelves of our pharmacies and supermarkets, and why it’s still very much buyer beware. Here he takes us through the regulatory process, and why you should only purchase supplements with an AUST-L number.

Complementary medicine has received a lot of attention in Australia recently. First, a study focused on potential safety concerns about taking herbal products. Second, ABC’s Four Corners looked at the need for better regulation of product claims, and questioned the credibility of the pharmacy industry for endorsing and selling these products. Both of these are particularly relevant, considering complementary and alternatives medicines are widely used by different populations and by more than half of all people. People like complementary medicines often because they find such natural alternatives to be more in line with their values and beliefs, and desire to lead a more “natural” life.

However, in many instances complementary medicines have no added benefit when compared to placebo, or weak evidence. These include dietary supplements such as vitamin C and echinacea for the common cold, and weight-loss supplements. On the other hand, there is evidence for complementary medicines in preventing or managing a range of conditions. Some examples include improvement in mental health conditions, managing menopausal symptoms, and for healthy outcomes during pregnancy.

## How complementary meds end up on our shelves

In contrast to pharmaceuticals (otherwise known as conventional “Western” medicines), government typically does not subsidise complementary medicines. Therefore, the cost burden is shifted to consumers. While this is good news for government budgets, consumers need to have confidence the products they’re spending their money on are safe and effective.

All herbal medicines (these are products derived from plant sources and fall under the complementary medicines umbrella) must be listed on the Australian Registry of Therapeutic Goods before they are made available for sale. This gives them an AUST-L number. However, this still relies on the manufacturer’s honesty with respect to its effectiveness.

This stands in stark contrast to pharmaceuticals. These have high up-front development costs, go through rigorous registration processes and have no guarantee of approval. Once pharmaceuticals are approved they are given an AUST-R number, which is different to the AUST-L number.

Natural or herbal medicines do not face the same regulatory scrutiny as pharmaceutical drugs because of their origin from “natural” sources. However, as the recent piece in the Medical Journal of Australia points out, some products (particularly traditional Chinese medicines) often inaccurately list ingredients and may contain undeclared products (including DNA from endangered animals such as the snow leopard) or toxic and pharmaceutical contaminants. Similar findings have been reported previously for traditional Chinese medicines. If a complementary medicine product does not have an AUST-L number you should not buy it: you are putting yourself at risk.

## Not all bad eggs

It’s often the poor compliance of a few companies tarnishing the industry as a whole. One example is “Hydroxycut”. Not only has the product been banned in the US several times, it has put consumers’ health in serious jeopardy. Other dietary supplements have led to questions being asked of the industry due to case reports of liver damage from taking products containing, for example, green tea extract. It’s the concoction of different ingredients in these supplements that often makes it difficult to pinpoint the exact root of concern. Therefore, tighter regulation of the industry is needed. But many companies are meeting regulatory requirements and performing good-quality research to support their product claims.

One recent example is an extract from the green-lipped mussel for those with attention deficit hyperactivity disorder (ADHD) or learning difficulties. This supplement showed some benefits in reducing hyperactivity and inattention, and improving memory in children and adolescents. Similar studies with other products are under way.

Regulatory reform is needed to protect those companies performing good-quality research from other companies “piggy-backing” off this evidence for their similarly marketed product, perhaps with the same or similar ingredients. The Therapeutic Goods Administration should require manufacturers to have independent testing performed on their products before marketing to ensure the ingredients listed on the packet are accurate. However, this still doesn’t stop people purchasing complementary medicine over the internet, despite clear warnings against this.

We need to encourage and better incentivise research and development of complementary medicines. And we need to give adequate resources to a relevant body

capable of more closely regulating the listing of complementary medicines to ensure patient safety. Until this happens, make sure you only purchase supplements with an AUST-L number to ensure it's safe – and do some research into the efficacy to ensure you're not wasting your money.

## —THE CONVERSATION [Do You Know What's in the Herbal Medicine You're Taking?](#)



Dr Nick Fuller is Research Fellow, Clinical Trials Development & Analysis, University of Sydney Charles Perkins Centre. His work focuses on the causes, prevention and treatment of obesity and associated mental and physical health disorders. He has worked across a diverse range of areas, including dietary and exercise treatments, conventional and complementary medicines, commercial weight loss programmes, medical devices, bariatric surgery, and appetite regulators. To take part in a weight-loss trial involving natural medicines, contact Nick here: [www.metabolictrial.com](http://www.metabolictrial.com)

## FOOD UN-PLUGGED

*Nicole Senior pulls the plug on hype and marketing spin to provide reliable, practical advice on food for health and enjoyment.*

## SUGAR-FREE CHOCOLATE

Easter is the season that will test the New Year's resolutions of many. You will be quietly going about your grocery shopping and the chocolate bunnies will literally hop right into your shopping trolley! If you'd like to stay on the path of health over Easter, are sugar-free chocolates a better option? Let's look at what's in them.

First up, what are the typical ingredients in regular chocolate?

- *Lindt Excellence Smooth Blend 70% Cocoa Dark Chocolate*: Cocoa mass, SUGAR, cocoa butter, emulsifier (soy lecithin), vanilla.
- *Lindt Lindor Milk Block*: SUGAR, vegetable fats, cocoa butter, whole milk powder, cocoa mass, lactose, skim milk powder, milk fat, emulsifier (soy lecithin), barley malt extract, flavourings.

So, what are the typical ingredients in sugar-free chocolate? Numerous alternative sweeteners are used to add flavor, texture and bulk (underlined).

- *Well Naturally Rich Dark Chocolate*: Cocoa mass & cocoa butter (70% cocoa solids), polydextrose, erythritol, soy lecithin, natural flavour, stevia.
- *Healtheries No Added Sugar Milk Chocolate*: Chocolate 57% [Cocoa Solids 40% (Cocoa Butter, Cocoa Mass), Maltitol, Full Cream Milk Powder, Emulsifier (Soy Lecithin), Natural Flavour, Natural Sweetener (Steviol Glycosides)] Filling 43% [Maltitol, Vegetable Fat, Cocoa Powder, Emulsifier (Soy Lecithin), Natural Flavour].

In sugar-free chocolate, polydextrose, maltitol, erythritol and stevia (steviol glycosides) provide the sweetness and mouth-feel that is normally provided by sugar. While they are safe to eat in moderation, the body is unable to completely absorb polydextrose, maltitol and erythritol and they may produce unwanted side effects if consumed in excess, hence the warning printed in capitals on sugar-free chocolate wrappers: "EXCESS CONSUMPTION MAY HAVE A LAXATIVE EFFECT."

*Well Naturally* claims their sugar-free chocolate is:

- Naturally sweetened with stevia. Contains no artificial colours, flavours, preservatives or sweeteners.
- A suitable treat for those wanting to reduce their sugar intake, such as diabetics and those watching their weight [when eaten in moderation].

### Are sugar-replacers “natural” ingredients?

Companies such as *Well Naturally* claim the sugar-replacements they use are natural, not artificial. Then why do these sugar-replacements (polydextrose, erythritol and stevia) sound so artificial?

While the leaves of the stevia plant are sweet, the manufacturer does not simply crush leaves and mix them into the chocolate. Stevia is produced using a five-step process that involves interactions with chemicals such as resins and alcoholic solvents to change the stevia leaves into steviol glycosides. Natural? Not really. Not like honey from the hive. The word ‘natural’ is not well regulated in the food industry and tends to be subjectively interpreted by manufacturers.

### What about “no artificial” claims?

“No artificial” claims often make baddies of things that are chemically identical to their “natural” counterparts. For example, synthetic amyl acetate made in the laboratory (artificial) is exactly the same as the amyl acetate extracted from a banana (natural) and both are banana flavours. Massoya lactone can be sourced from the Malaysian massoya tree or synthesised in a lab to give coconut flavour. The flavours are the same, only the source differs. When you get right down to it, if we ate less processed foods the “artificial” colours and flavours problem would almost disappear. A cynic might say the proliferation of “no artificial” claims just gives us permission to eat other versions of highly processed, nutrient-poor foods ...

It’s true that there’s a very small proportion of the population who are very sensitive to “artificial” colours and flavours, but they are sadly also sensitive to naturally occurring chemicals in food as well. While some artificial colours have been implicated in behavioural changes in children, the doses are large and the effects small, and the mechanism of effect is poorly understood. A [systematic review](#) and meta-analysis found there isn’t enough evidence to support eliminating artificial colours in children with ADHD. What about preservatives? Chocolate doesn’t typically have any – and in our house it doesn’t last long enough to need them.

### Is sugar-free chocolate suitable for people with diabetes or who are trying to lose weight?

We put together the following table to see how the nutritional content differs in 100g of dark and milk chocolate compared to the same amount of sugar-free chocolate.

Nutrients	<a href="#">Lindt Excellence Smooth Blend (dark) 70% Cocoa (100g)</a>	<a href="#">Lindt Lindor Milk Block (100g)</a>	<a href="#">Well Naturally No Sugar Added Rich Dark Chocolate (70% cocoa) (100g)</a>	<a href="#">Healthieries No Added Sugar Milk Chocolate Smooth Centre (100g)</a>
Energy – kilojoules	2530kJ	2550kJ	1980kJ	2200kJ
Energy – calories	605 calories	610 calories	474 calories	525 calories

Protein	6.9g	4.7g	6.8g	5.6g
Fat	48g	46.1g	43.2g	37.2g
— Includes saturated fat	29g	34.5g	26.2g	28.2g
Carbohydrates	33.0g	44.3g	5.4g	6.2g
— Includes sugars	29.0g	43.6g	0.7g	4.7g
— Includes starches	0g	0g	0g	0g

*Well Naturally* claim that when eaten in moderation, their sugar-free chocolate is a suitable treat for people living with diabetes and those who are watching their weight. The *Well Naturally* Rich Dark Chocolate contains 28% fewer calories while *Healtheries* No Added Sugar Milk Chocolate Smooth Centre contains 14% fewer calories; therefore it does offer a saving (if you can stop at one). Despite these calorie savings, sugar-free chocolates are still calorie-dense and contain large amounts of saturated fats. Just a few bites (21g bar) of *Healtheries* No Added Sugar Milk Chocolate Smooth Centre contains the same amount of calories as a 200g (7oz) large apple with far less tummy-filling power.

The significantly lower carbohydrate content of sugar-free chocolate may be of benefit for people counting carbs to manage their diabetes, but this is less of an issue if portions are limited (100g chocolate is too much at a sitting for anyone).

[Diabetes Australia](#) says, “a healthy eating plan for diabetes can include some sugar...however foods that are high in added sugars and poor sources of nutrients should be consumed sparingly...foods and drinks that have been sweetened with an alternative sweetener such as...sugar-free lollies etc, are best enjoyed occasionally...” And not to promote overconsumption in any way, but the fact is regular chocolate has a low GI. Everybody – including people with diabetes – can enjoy small portions of regular treat foods and don’t need sugar-free versions. In our experience reframing treats as better for you because there’s no sugar added gives us license to eat more and negates any kilojoule saving- we’re illogical creatures!

### ***The un-plugged truth***

While sugar-free chocolate may offer some advantages at Easter time there is no real need for it. Don’t mistake sugar-free chocolate for a health food. Enjoy small portions of the best chocolate you can afford and savour it slowly and mindfully with respect and appreciation. – Thanks to Rachel Ananin AKA [TheSeasonalDietitian.com](#) for her assistance with this article.



Nicole Senior is an Accredited Nutritionist, author, consultant, cook, food enthusiast and mother who strives to make sense of nutrition science and delights in making healthy food delicious.

**Contact:** You can follow her on [Twitter](#), [Facebook](#), [Pinterest](#), [Instagram](#) or check out her [website](#).

## **KEEP GOOD CARBS AND CARRY ON GRAPEFRUIT**

Grapefruit is a relative newcomer to the fruit bowl. Our hunter-gather forebears would not have bumped into it in the forest. But they may have met its parents, the pummelo and the orange because it’s a shining example of citrus doing what comes naturally – cross

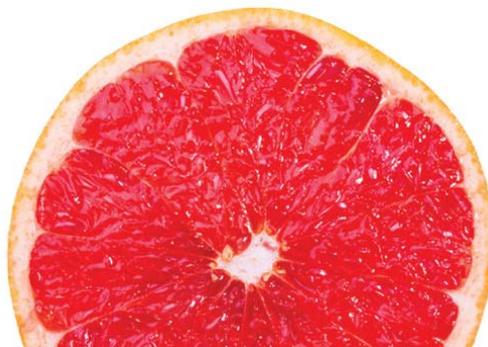
pollinating. The deed was probably done in Barbados sometime in the eighteenth century (the parents were immigrants from Asia). Now fast forward a hundred years to 1823 to Odet Philippe planting the first grapefruit seeds in Florida and the beginnings of a billion-dollar American success story that was massively boosted from the 1930s by fad diets extolling its miraculous “fat-burning” powers.

Does it have them? No it won't burn off the fat or melt the pounds report researchers who looked at the evidence for the effectiveness of consuming grapefruits (*Citrus paradisi*) on body weight, blood pressure, and lipid profile in a systematic review. Their [meta-analysis](#) failed to reveal a significant difference between grapefruits and controls re body weight, but did show a decrease in systolic blood pressure. However, they point out that the paucity of randomised controlled trials, the short durations of the interventions, and the lack of an established minimum effective dose limit the conclusions that can be drawn about the effects of grapefruit on body weight and metabolic parameters. So we end up with the usual “more studies needed”.

### What's in grapefruit?

While it may not burn fat, a small grapefruit (about 210g or 7½oz) will add zest to your day and deliver more than 100% of your daily dose of vitamin C and provide 240 kilojoules (57 calories), 2g protein, no fat, 10g carbs (sugars), 1g fibre, 250 mg potassium. It has a very low GI (25). In fact, fresh grapefruit has the lowest GI value of all fruit tested so far. It's not just the acid that has a blood glucose-lowering effect, it's also the pectin (a type of soluble fibre). Canned grapefruit segments (GI 47) and commercial grapefruit juice (GI 48) are easy year-round options when fresh fruit isn't available.

**Med Alert:** Some compounds in grapefruit can interact with some medicines making the dose stronger or weaker than it should be. So, check with your doctor or pharmacist about potential problems with any prescription medicines you take.



## IN THE GI NEWS KITCHEN

### KATE HEMPHILL'S EASTER EGGS

Pass on the chocolate eggs and opt for the free-range, organic real deal on Easter morning (or any morning). Kate uses Herbie's spice mixes, but of course you can substitute with your favourites. Note these recipes use a regular 15ml tablespoon.

### Turkish Poached Eggs

There are many variations of this Turkish breakfast dish, *Cilbir*, that dates back to the fifteenth century, but essentially thick cool yoghurt is topped with soft poached eggs and spiced butter or oil. Herbie's Turkish spice mix – parsley, sumac, Aleppo pepper, tomato powder, cumin, spearmint, bay leaves – enhances lamb, chicken, kebabs, pide and vegetarian dishes.

½ tsp Spanish mild paprika  
2 tbsp olive oil  
300g (10oz) thick plain yoghurt  
1 tbsp Herbie's Turkish spice mix  
4 free-range medium eggs  
1 tsp sumac, to serve  
Toasted Turkish bread, to serve

Prep time: 5 mins  
Cook time: 10 mins  
Serves: 2



For paprika oil, mix paprika and olive oil in a small dish until well combined then leave to settle. • Combine yoghurt with Turkish spice mix and a salt to taste. Spoon into two shallow serving dishes. • Bring a large saucepan of water to the boil, then reduce to a simmer and carefully crack eggs into water (or crack into a small cup then pour into pan). Simmer for 3 minutes and remove with a slotted spoon onto kitchen towel to remove excess moisture, then place two eggs in each dish of yoghurt. • Drizzle the paprika oil over eggs, sprinkle with sumac and a little salt, and serve with toasted Turkish bread. Can also be served with extra Aleppo pepper and fresh mint and/or parsley.

*Per serve (excluding Turkish bread)*

1705kJ/ 410 calories; 19g protein; 32g fat (includes 9g saturated fat; saturated : unsaturated fat ratio 0.39); 10g available carbs (includes 8g sugars and 2g starch); 2g fibre; 350mg sodium; 520mg potassium; sodium : potassium ratio 0.68

### **Brazilian Breakfast Mushrooms**

Try adding chorizo, spinach or avocado to this South American take on mushrooms and eggs, or make a large batch in a roasting tray and bake the eggs on top when feeding a crowd, serving with soft tortillas. Sprinkle Herbie's Brazilian spice blend – paprika, ginger, salt, garlic, onion, cumin, coriander seed, coriander leaf, allspice, cinnamon, pepper, and chilli – on mushrooms when sautéing or barbecuing.

600g (1lb 5oz) large portobello mushrooms,  
1 tbsp butter  
1 tbsp olive oil  
1½ tbsp Herbie's Brazilian spice blend  
1 tbsp red wine vinegar  
½ tsp salt  
2 large eggs  
micro coriander, to serve (optional)

Prep time: 5 mins  
Cook time: 15 mins  
Serves: 2 as a meal



Melt butter with olive oil in a large pan over medium heat. Add spice blend and mushrooms (halved and thickly sliced) and saute for 5–8 minutes until tender. Stir through red wine vinegar and salt and cook for a further minute. Mushrooms can be kept warm at this stage.

- Poach or fry (in a non-stick frying pan) the eggs until they are cooked to your liking. Place on top of mushrooms and garnish with micro coriander and a pinch of Brazilian spice blend and serve immediately.

*Per serve (poached eggs)*

1325 kJ/ 315 calories; 14g protein; 24g fat (includes 9g saturated fat; saturated : unsaturated fat ratio 0.6); 4g available carbs (includes 3g sugars and 1g starch); 7g fibre; 750mg sodium; 1270mg potassium; sodium : potassium ratio 0.59

### **STICKS, SEEDS, PODS & LEAVES**

*Kate Hemphill is a trained chef. She contributed the recipes to Ian Hemphill's best-selling Spice and Herb Bible. You will find more of her recipes on the [Herbies spices website](#).*

### **Juniper Roasted Trout with Fennel & Orange Salad**

Enjoy the pine-like aroma of juniper with seafood, which also goes well with the fruit in this quick and easy salad. Use lower GI Carisma potatoes if available.

- 2 trout fillets (120g/4½ oz each)
- 1 tsp juniper berries, lightly crushed
- 2 handfuls of mixed leaves
- 1 orange, peeled and sliced into rounds
- 1 bulb fennel, very finely sliced
- 4 small new potatoes, skin on, cooked until tender and halved
- 10 mint leaves
- 2 tbsp pomegranate arils

Prep time: 10 mins

Cook time: 15 mins

Serves: 2



Preheat oven to 180°C/350°F. • Rub juniper berries onto fillets and season with salt and pepper and a drizzle of olive oil. Wrap lightly in foil and place on a baking tray. Cook for 12–15 minutes until flaking easily. • Combine salad ingredients and dress with a little olive oil. Arrange on a plate or plates and top with trout.

*Per serve*

Energy: 995 kJ/238 cal; protein: 17g; fat: 5.5g; saturated fat: 1.5g (saturated : unsaturated fat ratio 0.38); available carbohydrate 30g; fibre: 8g; 110mg sodium; 1210mg potassium (sodium : potassium ratio 0.1)

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