



**THIS MONTH:** How carbs helped the evolution of the large human brain; Low carb or low fat for body fat loss? Sweet potatoes combat vitamin A deficiency; Fruit, veg and beta-carotene: 20 GI values; Dr Alan Barclay checks out tooth decay; Nicole's taste of health focuses on rice; Orange is the new black: beta-carotene in the kitchen with Anneka's carrot cake and Dr Joanna's sweet potato chips with coconut fish fingers; Backing up packaging claims – Dianna Crisp explains; Ask Prof Jennie Brand-Miller: Does toasting bread lower the GI?

## FOOD FOR THOUGHT

### BRAIN POWER

“The popularity of the so-called paleo diet has brought unprecedented attention to the foods consumed by Stone Age or Paleolithic people,” writes Dr Darren Curnoe in *The Conversation*. The following extract is reproduced with permission.

The paleo diet eliminates all grains, legumes and potatoes, yet there is plenty of evidence that humans have evolved to eat carbohydrates especially starches. Take the amylase genes which evolved to aid the digestion of starch either in our saliva or pancreas through secretion into the small intestine. Humans are unique among primates in possessing large numbers of salivary amylase genes and there is a clear association between gene number and the concentration of the amylase enzyme in the saliva.

Plant foods containing high quantities of starch may even have been essential for the evolution of the large human brain over the last 2 million years, according to new research by Karen Hardy from Universitat Autònoma de Barcelona and colleagues published recently in [The Quarterly Review of Biology](#).

Our brains are three times the size of our chimpanzee cousins and are undoubtedly the seat of many of the differences between us in terms of our biology including behaviour. Previous models such as the “expensive tissue hypothesis” of Aiello and Wheeler proposed that the use of stone tools facilitated a shift from a mostly plant-based to largely meat-comprising diet in our ancestors in order to feed our large brains. This shift, they suggested, facilitated the evolution of our enlarged brain as well as smaller teeth and reduced gut adapted for eating meat.

Yet there have been lingering doubts, sometimes claimed refutations, of the links between human evolution and meat eating. There is no clear association across mammals including primates between an enlarged brain and reduced gut size. Instead, large brains seem to be found in mammals that are capable of storing large amounts of body fat to stave off starvation and also have efficient forms of locomotion like our human bipedalism.

The new model from Hardy and co-authors suggests that cooked starch greatly increased energy availability to energy expensive tissues like the brain, red blood cells, and also the developing fetus. They also suggest that the number of copies of the salivary amylase gene may have enhanced the importance of starch in human evolution following the controlled use of fire and development of cooking.

But there are of course many sources of carbohydrates in the diet and research suggests that early humans may have eaten underground food items like roots, tubers and rhizomes, as well as seeds, certain fruits and bark which are all widely available and rich in starch. Grains were also an important and highly effective source of carbohydrates in the Paleolithic, despite what the paleo diet states. Grinding seeds to make flour and probably bread is known from at least 25,000 years ago in Europe, arguably much longer, and humans have been cooking for at least 400,000 years, but perhaps even 2 million years.



Photo credit: Alyssa Crittenden. Tubers comprise part of the Hadza diet year round. They are collected almost exclusively by the women who use fire-hardened digging sticks to extract them from the often hard-packed soil. They usually roast some of their tubers when they finish digging and take the remainder (about 3/4 of their haul) back to camp to feed others.



The truth is we have no idea how much meat was eaten in the Paleolithic because so little of the plant food remains have preserved for us to study and to garner an accurate picture of the complete diet of our ancestors. Mammal bones with signs of butchering or cooking are plentiful in the archaeological record, but bones always preserve as fossils much longer than plant remains, and so we have a highly skewed view of past diets.

We would also do well to keep in mind that the role and safe amounts of animal food in the contemporary human diet remain controversial in nutritional and medical science regardless of what we think our ancestors may have eaten. Red meat in particular has been linked to a range of diseases like metabolic syndrome, a variety of cancers, atherosclerosis and Type 2 diabetes, so a degree of caution about safe levels of consumption seems wise.



**THE CONVERSATION** Want more? Check out the complete article in *The Conversation*.

Associate Prof Darren Curnoe is based at the University of New South Wales. His research focus is reconstructing and understanding the human fossil record of the last 2.6 million years (Pleistocene Epoch). He also appears regularly in the media talking about the science of human evolution and related fields. His blog is [www.walkingontwofeet.com](http://www.walkingontwofeet.com)

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## NEWS BRIEFS

Not all calories are created equal when it comes to body fat loss, but over the long term, it's pretty close; Orange is the new black: ultra-beta-carotene-rich sweet potatoes combat vitamin A deficiency; fruit, veg and beta-carotene: 20 GI values.

### LOW CARB OR LOW FAT?

Calorie for calorie, restricting dietary fat results in more body fat loss than restricting carbohydrate in people with obesity reports Kevin Hall, PhD, a metabolism researcher at the National Institute of Diabetes and Digestive and Kidney Diseases in *Cell Metabolism*.

Studying the effects of diet on weight loss is often confounded by the difficulty in measuring what people actually eat – participants may not adhere to meal plans, misjudge amounts, or are not truthful in follow-up surveys. To counter this, Hall and colleagues confined 19 consenting adults with obesity to a metabolic ward for a pair of 2-week periods, over the course of which every morsel of food eaten was closely monitored and controlled. To keep the variables simple, the two observation periods were like two sides of a balance scale: during the first period, 30% of baseline calories were cut through carb restriction alone, while fat intake remained the same. During the second period the conditions were reversed. Each day, the researchers measured how much fat each participant ate and burned and used this information to calculate the rate of body fat loss.



At the end of the two dieting periods, the mathematical model proved to be correct. Body fat lost with dietary fat restriction was greater compared with carbohydrate restriction, even though more fat was burned with the low-carb diet. However, over prolonged periods the model predicted that the body acts to minimize body fat differences between diets that are equal in calories but varying widely in their ratio of carbohydrate to fat.



“There is one set of beliefs that says all calories are exactly equal when it comes to body fat loss and there’s another that says carbohydrate calories are particularly fattening, so cutting those should lead to more fat loss,” Hall says. “Our results showed that, actually, not all calories are created equal when it comes to body fat loss, but over the long term, it’s pretty close ... Compared to the reduced-fat diet, the reduced-carb diet was particularly effective at lowering insulin secretion and increasing fat burning, resulting in significant body fat loss,” said Hall. “But interestingly, study participants lost even more body fat during the fat-restricted diet, as it resulted in a greater imbalance between the fat eaten and fat burned. These findings counter the theory that body fat loss necessarily requires decreasing insulin, thereby increasing the release of stored fat from fat tissue and increasing the amount of fat burned by the body.” For now, the best diet is the one that you can stick to”, he says.

## ORANGE IS THE NEW BLACK

Sweet potato provides a tasty solution for vitamin A deficiency, a major public health problem, especially in Africa and Asia. And it hits young children and pregnant women hardest reports the World Health Organization. “It is the leading cause of preventable blindness in children and increases the risk of disease and death from severe infections,” they say. Orange-fleshed sweet potatoes, a staple food in many parts of Sub-Saharan Africa and Asia, are a rich source of beta-carotene, a naturally occurring pigment that the body converts into vitamin A. Pilot programs show that eating orange-fleshed sweet potatoes [improves a child’s vitamin A status](#). The HarvestPlus photo shows a woman selling orange-fleshed sweet potatoes at Kalerwe market near Kampala in Uganda. The signpost reads: “Buy vitamin A-rich potatoes here.” HarvestPlus is a pioneer of breeding staple crops with higher micro-nutrient content by conventional techniques.



Photo Credit: HarvestPlus [www.harvestplus.org](http://www.harvestplus.org)

Plant breeders in South Africa have now developed several varieties of sweet potato that are ultra-rich in beta-carotene. “Sweet potato is very popular in Africa,” says Sunette Laurie, a senior researcher with the Agricultural Research Council in Pretoria. “We realized it would be great if we could develop a local variety which has good yield, high dry mass, and desirable taste attributes, and promote it to combat vitamin A deficiency.” A 120-gram (4-ounce) serving of the new sweet potatoes provides from 110–250% (depending on the variety) of a 4–8-year-old’s daily vitamin A. These sweet potatoes can also be processed to make beta-carotene rich flour and breads. You can read more about it [here](#).

## GI VALUES FROM SUGIRS

**Beta-carotene from good carbs.** Yellow/orange fruit and vegetables are useful sources of beta-carotene along with other vitamins and minerals, as are dark green leafy vegetables (which have no carbs, or so little that their GI cannot be tested). Even though some of the fruit and veggies listed here have a high GI (e.g. rockmelon and watermelon), their GL is low because they have so little carbohydrate. They are mostly water (over 90%).





	GI	SERVING	AVAILABLE CARBS PER SERVE	GL PER SERVE
<b>Fruit</b>				
Apricots, 2 regular	34	110g	8	3
Banana, ladyfinger, 1 small, peeled	51 (av)	60g	15	8
Cherries, 16 medium, fresh	63	145g	16	10
Grapefruit, 1 medium pink or ruby	25	200g	10	2
Mango, 1 cheek, medium	51	120g	14	7
Nectarine, 1 small	43	90g	7	3
Orange, 1 large	42	190g	15	6
Papaya, 1 cup, diced	56	150g	10	6
Peach, 1 medium	42	145g	9	4
Pineapple, fresh, 1 cup, diced pieces	59	140g	12	7
Plums, 2 regular	39	130g	10	4
Rockmelon/cantaloupe, 1 cup diced	88	190g	8	7
Strawberries, 1 regular punnet	40	250g	8	3
Watermelon, small wedge	78	100g	5	4
<b>Veg</b>				
Carrot, 1 medium	39	60g	3	1
Corn on cob, 1 medium, cooked	48	80g	16	8
Green peas, ¼ cup, cooked	51	100g	10	5
Pumpkin (Cucurbita moschata), 1 cup diced, cooked	66	100g	7	5
Pumpkin, butternut (winter squash), 1 cup diced, cooked	51	100g	8	4
Swede (rutabaga), 1 cup diced, cooked	72	180g	7	5
Sweet potato, orange, diced, cooked	61	100g	15	9

**Glycemic Index testing:** Sydney University GI Research Service (SUGiRS) was established in 1995 to provide a reliable commercial GI testing laboratory for the local and international food industry. Food samples are tested in healthy volunteers according to standardised methods that have been validated against overseas laboratories. Testing of foods for their glycemic index, insulin index, satiety response, and other metabolic parameters can be assessed simultaneously. SUGiRS also works with companies to develop new low GI products or help lower the GI of existing ones. Other analyses such as in vitro GI testing and sialic acid measurement is also available. Principal researchers / consultants: Professor Jennie Brand-Miller, SUGiRS Manager Fiona Atkinson, PhD.



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## PERSPECTIVES WITH DR ALAN BARCLAY

### IT'S NOT JUST SUGAR THAT CAUSES TOOTH DECAY!

Tooth decay is caused by bacteria on our teeth producing acid that destroys the enamel. The various sugars in the foods and drinks we consume provide the bacteria with the fuel they need to create their destructive acids. It is a serious health problem worldwide which is the main reason why the [World Health Organisation](#) recently re-affirmed its recommendation that people consume no more than 10% of energy (calories/kilojoules) from free sugars.

The sweet-tasting foods and drinks from Nature's plants (fruit, berries and coconut water) and dairy (milk and yoghurt), and from food manufacturers' plants (sweet snacks, confectionery, soft drinks), contain a variety of sugars including:

- Single sugar molecules (called monosaccharides) such as fructose, galactose and glucose
- Two single sugar molecules joined together (called disaccharides) such as lactose (galactose + glucose), maltose (glucose + glucose) and sucrose (fructose + glucose).



What you may not realise is that maltodextrins, which are only slightly sweet, and starches, which aren't sweet at all, are made up of sugars too: they are simply chains of glucose molecules of various lengths.

Bacteria can use monosaccharide sugars like fructose and glucose in foods and beverages immediately as a fuel source to produce their enamel-destroying acid because these are already "free sugars".

However, until the disaccharides like maltose and sucrose have been broken down into single-sugar molecules, the bacteria can't use them to top up their tanks and fuel their destructive acid production. We produce an enzyme in our saliva (amylase) that breaks maltose down as part of the digestive process (remember, digestion begins in the mouth).

Although our saliva doesn't contain sucrase, the enzyme that breaks down sucrose into fructose and glucose, certain [strains of mouth bacteria](#) can produce it, and do. And that's why we end up with dental caries if we consume sucrose-containing foods and drinks too often and don't clean our teeth. Dental hygiene is vital: brushing and flossing regularly discourages the growth of these sucrase and consequently acid-producing bacteria, and helps reduce the risk of developing tooth decay.

Lactose is the exception amongst the disaccharides. One reason why foods and drinks like milk and yoghurt do not promote tooth decay is that our saliva does not contain the enzyme lactase to break their natural lactose down into free galactose and glucose sugars – and our mouth bacteria don't either.

As mentioned, we do produce our own amylase and it is secreted into saliva. This enzyme not only helps break maltose down into glucose, but it also breaks some maltodextrins and starches down into glucose as well. In other words, some starches and maltodextrins are as likely to cause tooth decay as some sugars. This is why the most recent version of the Australian Dietary Guidelines note in the evidence reports that: "Historically, the prevalence of dental caries has increased when dietary patterns have changed to include more **added sugars** and foods containing **refined starches**." and "Fermentable carbohydrates (both **sugars** and **starches**) are a substrate for bacteria such as *Streptococcus mutans* and *S. sobrinus*, which increase the acid-producing potential of dental plaque."

So, as well as limiting consumption of added sugars like glucose, maltose and sucrose, we should also be limiting consumption of maltodextrins and refined starches if we want to reduce our risk of developing tooth decay. This is one of the reasons why the [Dietary Guidelines for Americans](#) advise people to: "Consume fewer foods with sodium (salt), saturated fats, trans fats, cholesterol, **added sugars**, and **refined grains**".

Of course, on top of all this you need to practise good oral hygiene to help prevent tooth decay by [removing the harmful bacteria that convert sugars to enamel-destroying acid](#). So, make sure that you:

- Brush twice a day with a fluoride toothpaste
- Clean between your teeth daily with floss or interdental cleaner
- Eat nutritious and balanced meals and limit snacking
- Visit your dentist regularly for professional cleanings and oral examination
- Check with your dentist about use of supplemental fluoride, which strengthens your teeth, and about use of dental sealants (a plastic protective coating) applied to the chewing surfaces of the back teeth to protect them from decay.



**Alan Barclay PhD** ([LinkedIn](#)) is a consultant dietitian and Chief Scientific Officer at the Glycemic Index Foundation. He worked for Diabetes Australia (NSW) from 1998-2014 and is a member of the editorial board of Diabetes Australia's health professional magazine, *Diabetes Management Journal*. Alan has authored or co-authored over 30 scientific publications, is co-author of *The Low GI Diet: Diabetes Handbook*, *The Low GI Diet: Managing Type 2 Diabetes*, and *The Ultimate Guide to Sugars and Sweeteners*, and presents at conferences around the globe.

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## NICOLE SENIOR'S TASTE OF HEALTH

### RICE!

**A global staple:** Rice originated around 10,000 years ago in China since then it has taken the world by storm sprouting many different varieties with different shapes (long, medium and short grain) and cooking qualities (separated or sticky grains). Just take a moment to think about all the foods you've ever eaten with rice as a primary ingredient: Chinese fried rice, Indian basmati rice with curry, Greek vine leaves stuffed with rice, Italian risotto, Spanish paella, Vietnamese rice paper rolls or Japanese sushi – the mind boggles. Like many other starchy staples, its culinary role is as a blank canvas to which you add the colour, flavour, texture and nourishment with vegetables, spices and herbs, meat, poultry, fish or legumes.

In recent times, rice has been viewed with suspicion from a health point of view due to its high GI (some varieties) and low fibre (white rices). But let's put this in historical perspective. White rice was a dietary staple in China for centuries when people were very physically active. Nowadays, public health experts in China are advocating people switch to brown rice in response to increasing obesity and type 2 diabetes. The Westernisation of the Chinese diet has changed the context, and rice is no longer an innocent bystander. And the same has happened in Western diets. In the fad-happy West, we have to stop shooting the messenger from past repasts.

**Rice nutrition:** Rice is rich in starchy carbohydrate, very low in fat, about 6% protein (but naturally gluten-free) and contains B vitamins niacin and B6. White rice has had the rice bran layer polished off and is lower in fibre and vitamins than brown rice. The GI of rice depends on the amylose starch content and how it is cooked and ranges from low GI varieties such as SunRice Doongara Low GI Brown rice (54) to high GI jasmine fragrant rice (89). Wild rice has a

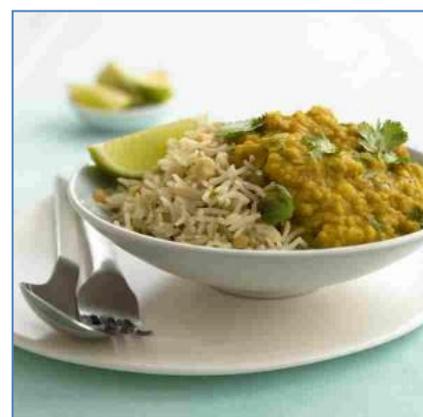


Photo: The Low GI Vegetarian Cookbook



medium GI (57) – and looks gorgeous with its dark colour and long slender shape – but it isn't really a type of rice at all. There are also many combos these days – rice with quinoa, rice with chia seeds. Check them out.

**How to get the nice of rice** The long and the short of it is, rice is a global staple with infinite culinary possibilities. As the song says, “all we are saying is give rice a chance” (or something like that)! However, here are some tips for enjoying rice with your meals.

- Wholegrain is best, so go for brown rice because of its higher fibre, vitamin and mineral content. It has a pleasant nutty flavour and chewy texture too.
- Don't overdo it. The trick with rice as with other starchy staples is to keep portions small (¼ of the plate) and fill out the meal with vegetables and small amounts of meat, chicken, fish or vegetarian alternatives. This applies to dishes such as pilaffs and risottos as much as serving rice as a side dish.
- Go low or lower GI when you can, especially if you need to manage your blood glucose. Enjoying super-healthy and low GI legumes such as lentils, chick peas and kidney beans, or nuts and seeds at the same meal will also reduce the glycemic impact of rice. For example: add lentils to boiled rice; include nuts in rice salad or stir fry; or stir in cooked cannellini beans to risotto.

It's getting easier to find low or low GI rices. Below is a table of values of some of the more popular varieties. For more GI values check out the database at [www.glycemicindex.com](http://www.glycemicindex.com)

½ CUP COOKED RICE	GI	AVAILABLE CARBS PER SERVE	GL PER SERVE
Arborio	69	25	17
Basmati	58	24	14
Calrose, brown, medium grain	76	23	17
Calrose, white, medium grain	87	24	21
Glutinous white rice	98	36	35
Japanese-style sushi rice	73	23	17
Jasmine	89	23	20
SunRice Doongara Low GI Brown Rice	54	18	10
SunRice Doongara Low GI Clever White Rice	54	21	11
SunRice white long-grain rice (Premium)	59	23	14
<b>MICROWAVE POUCHES</b>			
SunRice Low GI White Rice (125g)	52	37	19
<b>COLES BRAND (125g)</b>			
Brown Rice and Chia Seeds	41	53	22
Brown Rice and Quinoa	51	40	20
7 Ancient Grains	49	58	28
Mexican Style	47	41	19



**Nicole Senior** is an Accredited Nutritionist, author and consultant who strives to make healthy food taste terrific. You can follow her on [Twitter](#), [Facebook](#) or checkout her [website](#).



## WHAT I EAT: FUMI SOMEHARA FROM JAPAN

Nicole Senior talks to Fumi Somehara, an Accredited Practising Dietitian who is a passionate and motivated advocate for lifestyle health and wellbeing with a firm philosophy: Eat. Food. Nourish. She is a keen cook, always seeking ways to make lives easy, happy and nourishing.

**What is your cultural background?** I am Japanese

**What does a typical day's food look like in your culture?** It's quite difficult to show a typical day since meals are so versatile and there's so many different variations using seasonal ingredients.

- **Breakfast:** Rice with miso soup and any left-over side dishes from the night before. OR rice with natto (fermented soybeans), or even toast with natto.

- **Lunch and dinner:** Rice with a main dish e.g. grilled fish, or tofu/chicken/beef/pork stir-fry. A couple of side dishes, usually veggies e.g. stewed cabbage/daikon, stir-fried carrots and burdock, pickled winter vegetables OR noodles (soba or udon) – hot or cold, depending on season. Noodle dishes usually have fewer side dishes OR hot pot in winter.



**What is your favourite dish? Here are two favourites.** Natto any style! For example, served with rice, or in an omelette, in miso soup, or even as a pizza/toast topping. And also shiraae – a mashed tofu salad consisting of vegetables such as carrots, spinach or konnyaku (tuber vegetable) with soy and mirin (sweet rice wine), then combined with well-drained silken tofu so that the tofu acts like a coating for the vegetables.

**What are 3 ingredients this cuisine couldn't do without?** Rice, soy beans and their products (e.g. tofu, natto, miso, soy sauce) and koji.

**Can you suggest a hero ingredient?** Dried vegetables – from radish to mushrooms and even tofu, the Japanese know how to preserve foods and use them throughout the year. For example: mushrooms – especially shiitake – are used to make stock; dried radish is used in many side dishes; and seaweed is used for salads and soups. Dried tofu called koya-tofu is used in place of meat (and also comes in a thin sheet version called yuba).

- **What is natto?** Annatto is a traditional Japanese ingredient of soybeans fermented with bacillus subtilis. Natto has a strong smell similar to aged cheese and a stringy texture, and is typically eaten in sushi, on toast, in miso soup, omelette or salad.

- **What is koji?** Koji is a filamentous fungi *Aspergillus oryzae* used to produce several traditional Japanese ingredients including miso, soy sauce, rice vinegar and sake.



Dietitian [Fumi Somehara](#) B.Sc. Hons, B.App.Sc. is founder and director of [Key Nutrition Solutions](#), a clinic offering nutrition and wellbeing counselling. Her interests and experience include chronic disease prevention and management, weight management, sports nutrition, food sensitivity and culinary food medicine. Look out for her article on fermented foods in the November GI News.



## IN THE GI NEWS KITCHEN THIS MONTH

Orange is the new black in the GI News Kitchen with loads of beta-carotene-rich grated carrot in Anneka's amazing moist carrot cake and baked sweet potato chips with Dr Joanna's coconut fish fingers. Plus Sydney's Kepos Street Kitchen shares their renowned hot smoked salmon & potato salad.

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### ANNEKA MANNING'S FAMILY BAKING

#### Carrot Cake

This cake is one of those cakes that have a naturally enticing balance of ingredients that complement each other: loads of grated carrot (which is the secret to this cake's moist nature), cinnamon and nutmeg to lend a hint of spice and walnuts for crunch. It will keep in an airtight container in a cool place (but not in the fridge) for up to 4 days.

- Makes: about 20 pieces.
- Preparation: 15 minutes
- Cooking time: 50–55 minutes

Sunflower oil, to grease  
1¼ cups (300g/10oz) plain wholemeal spelt flour (See Baker's Tip)  
2 tsp bicarbonate of soda  
1 tsp baking powder  
1½ tsp ground cinnamon  
1 teaspoon ground nutmeg  
1 cup (220g/8oz) raw sugar  
100g (3½oz) walnuts, toasted and coarsely chopped (see Baker's Tips)  
3 eggs, at room temperature  
1 cup (250ml/9fl oz) sunflower oil  
500g/1lb 2oz (about 5 medium) carrots, peeled and coarsely grated  
1 tsp icing sugar, to dust



Preheat the oven to 180°C/350°F. Brush a square 20cm cake tin with oil to grease. Line the base with non-stick baking paper. • Sift the flour, bicarbonate of soda, baking powder, cinnamon and nutmeg into a large bowl. Add the raw sugar and walnuts and stir to combine. • Put the eggs and oil in a medium bowl and use a fork to whisk until well combined. Stir in the grated carrot. Add to the dry ingredients and use a large metal spoon or spatula to fold together until just combined. Spoon the mixture into the prepared cake pan and spoon the surface with the back of a spoon. • Bake in preheated oven for 50–55 minutes or until cooked when tested in the centre with a skewer. • Stand the cake in the tin for 5 minutes before turning onto a wire rack to cool completely. • Sprinkle with the icing sugar (if desired) and serve cut into slices.

*Per piece (cut into 20 pieces):* 1045kJ/250 calories; 4g protein; 16g fat (includes 2g saturated fat; saturated to unsaturated fat ratio 0.14); 22g available carbs (includes 13g sugars and 9g starch); 3g fibre; 230mg sodium; 155mg potassium (sodium : potassium ratio 1.47)

#### Baker's Tips:

- The wholemeal spelt flour can be replaced with 1 cup (150g/5½oz) wholemeal plain flour and ¾ cup (120g/4oz) plain flour.
- The walnuts can be replaced with pecans.

BakeClub founder **Anneka Manning** shares her delicious better-for-you recipes for snacks, desserts and treats the whole family will love. Through both her writing and cooking school, Anneka teaches home cooks to bake in practical and approachable yet inspiring ways that assure success in the kitchen. You can follow her on [Twitter](#), [Facebook](#) or check out her [website](#).





## WHAT'S FOR DINNER WITH DR JOANNA

### Coconut Fish Fingers with Sweet Potato Chips & Broccolini

Here's a healthier version of those perennial favourites that taste just as good and feel even better, all baked in the oven and served with steamed broccolini for colour and a powerful phytonutrient boost. For a gluten-free version, omit the bread crumbs and coat just with the coconut (it's just not quite so crispy this way), or mix with a gluten-free crumb mixture. Serves: 4

2 large sweet potatoes (600g/1lb 5oz), scrubbed

½ tbsp extra virgin olive oil

400g (14oz) snapper fillets, skin removed

1 free range egg

½ cup shredded coconut

2 slices sourdough grainy bread, made into breadcrumbs

1 bunch broccolini spears



Preheat the oven to 180°C (350°F). Cut the sweet potatoes into chips and spread over a baking tray lined with baking paper. Drizzle or spray with olive oil and sprinkle with a little sea salt. Bake in the oven for 30 minutes or until golden brown. • Meanwhile, cut the fish into finger shapes. Whisk the egg with a fork in a bowl. In a separate bowl mix the coconut with the breadcrumbs and fresh black pepper. Dip the fish in the egg and then coat with the coconut mixture and place on a baking tray lining with baking paper. Add to the oven half way through cooking the chips – the fish fingers will only take around 15 minutes. They should look slightly browned. Do not overcook or the fish will dry out. • Steam or microwave the broccolini for 2 minutes, so that it is still slightly crunchy and a bright green. • Mix the sweet potato chips with broccolini spears and pile onto plates (or paper as we have done) and top with the fish fingers.

*Per serve*

Energy: 1500kJ/360 cal; protein: 34g; fat: 12g (including 6g saturated fat; saturated to unsaturated fat ratio 1.0); available carbohydrate: 28g; fibre: 6g



**Joanna McMillan PhD** is a qualified dietitian and nutritionist. She is director of nutrition consultancy company *Dr Joanna*, and founder of *Get Lean* – the online healthy lifestyle system. She is a popular media spokesperson in Australia with regular TV and radio appearances, writes for several magazines and blogs, and has authored several books including *The Low GI Diet* (with Prof Jennie Brand-Miller). Joanna is a proud ambassador for Diabetes Australia and The Skin and Cancer Foundation. She is also a former fitness instructor and continuing exercise enthusiast which she juggles with being Mum to two very energetic boys. You can follow her on [Twitter](#), [Facebook](#) or check out her [website](#).



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## THE KEPOS STREET KITCHEN SALAD BAR

### Hot Smoked Salmon & Potato Salad

The salad is one of the most popular at Sydney's Kepos Street Kitchen. It is based on the classic Egyptian breakfast dish of dukkah and eggs. You will find hot smoked salmon at your fish shop or fish market, or vacuum-packed in the supermarket. We whipped it up for dinner using Carisma potatoes as that's what we have in the pantry – they are low GI and don't need peeling. Serves 4

400g (14oz) kipfler potatoes, peeled, boiled and chopped

500g (1lb 2oz) hot smoked salmon, flaked

12 Sicilian olives, pitted and chopped

4 eggs, soft-boiled

3 tablespoons (¼ cup) extra virgin olive oil

4 tablespoons (⅓ cup) hazelnut dukkah or za'atar

1 handful flat-leaf (Italian) parsley, leaves chopped

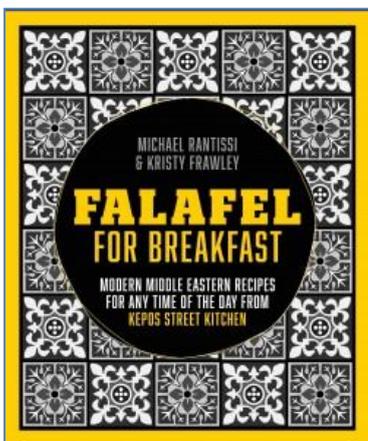
juice of 1 lemon

zest of ½ lemon

Put the potato, half of the salmon and the olives in a large bowl and mix gently. • Tear apart 2 of the eggs and toss through the salad. • Put the olive oil, dukkah, parsley, lemon juice and zest in a bowl and whisk to combine. • Pour over the salad and mix gently until combined. • To serve, tear apart the remaining 2 eggs and scatter over the salad with the remaining salmon.

*Per serve*

590 cal/2460 kJ; 42g protein; 38g fat (includes 6g saturated fat; saturated to unsaturated fat ratio = 0.19); 17g available carbs (includes 5g sugars and 12g starch); 4.5g fibre; 2290mg sodium; 1075mg potassium (sodium : potassium ratio 2.13)



*Falafel for Breakfast* by Israeli-born chef Michael Rantissi and his partner Kristy Frawley is packed with easy-to-prepare food that brings everyone to the table and ensures clean plates all round. We absolutely love the salads and will be sharing others with you in the coming months. It is published by Murdoch Books and available in bookshops and online.



## GLYCEMIC INDEX FOUNDATION NEWS

### BACKING UP THOSE CLAIMS.

Sugar free, fat free, heart healthy, dairy free, high protein, gluten free, paleo friendly: there are a lot of claims out there and it can get very confusing, I even saw a bottled water product being advertised as gluten free!

With consumers desperate for information to help make healthier choices when food shopping, claims like these are influencing what goes into the trolley and, as we mentioned in [July's Food for Thought](#), manufacturers, marketers and advertisers are capitalising on this. A recent [study](#) out of Switzerland reports that simple changes such as just adding the word “fruit” in front of “sugar” (fruit sugar is a common colloquial term for fructose in German) in the ingredients list increased the perceived healthiness of the food. Other [studies](#) have shown that the use of green colours on labels have also increased the perception of the product as being a healthier option.



So how do you know if what you are seeing on packaging and in promotions is really what they say it is and is a healthy option? First of all, most governments have legislation in place to protect consumer’s interests and ensure that food claims are valid. Here in Australia we are embarking on an era of “cleaner labels” as new nutrition and health claim legislation comes into effect in January 2016.

Manufacturers that want to make a health claim (either general or high level) e.g. “heart healthy”, “keeps you fuller for longer” etc... have to have strong scientific evidence to prove that the product can fulfil these promises.

- A general level health claim refers to a nutrient, substance or property of a food and its effect on a health function.
- A high level health claim refers to a serious disease or biomarker of a serious disease e.g., diabetes.

Here at the GI Foundation we have done all the hard work to ensure that those products that have the GI Symbol on pack are able to make general level health claims around GI and satiety (keeps you fuller for longer), sustained energy (longer lasting energy) and physical performance (fuel active bodies). You can trust that what the GI Symbol products are saying on pack and in promotional material is substantiated and that the product will be a better choice within its category.

If you are manufacturer and want to find out more on how to go about making Low GI general level health claims click [here](#).

### NEW GI SYMBOL PRODUCTS IN AUSTRALIA

PRODUCT	GI	SERVING	AVAILABLE CARBS PER SERVE	GL
SunRice® Low GI White Rice (10kg pack)	54	1/2 cup (cooked)	18g	10
SunRice® Low GI White Rice (2kg pack) Kangaroo Brand – Singapore & Hong Kong	54	1/2 cup (cooked)	21g	11
Milo Ready-to-Drink Tetrapak (Nestlé)	34	200ml	21g	7
Milo Protein Clusters (Nestlé)	47	45g	28g	13



**Why look for the GI Symbol?** The GI Symbol is your trusted guide to healthier food choices. Foods that carry the GI Symbol have had their glycemic index tested at an [accredited laboratory](#), are low GI and have met strict [nutrient criteria](#) for kilojoules, saturated fat and sodium, and where appropriate, fibre and calcium. The nutrient criteria are consistent with international dietary guidelines and were developed in consultation with experts from the [University of Sydney](#) and Australian consumer diabetes organisations. If you are a food company or retailer and you have a product that you think may be eligible to carry the GI Symbol, we'd love to hear from you.

Email Dianna Crisp on [info@gisymbol.com](mailto:info@gisymbol.com)



**GLYCEMIC INDEX**  
making healthy choices easy

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## Q&A WITH PROF JENNIE BRAND-MILLER

### I LOVE TOAST FOR BREAKFAST. DOES TOASTING BREAD LOWER THE GI?

This is a really good question. The GI values for bread you will see are for fresh bread, consumed on its own. One small study conducted some time ago suggested that toasting bread will lower the GI but it hasn't been replicated. Our unpublished data tells me that it doesn't make any difference. If you need to manage blood glucose levels, choose a low or lower GI bread to make your toast. Look for dense breads with whole grains or seeds; authentic sourdough breads; or breads made with stoneground flours. In Australia a number of low GI breads carry the GI Symbol which makes them easier to spot on the shelf.

What you put on your toast will make a difference too. Good toast toppers for breakfast that will keep you on the go to lunch time include baked beans which are naturally low GI, a poached or scrambled egg, or sautéed mushrooms and ricotta. In our *Low GI Family Cookbook*, there's a delicious recipe for French toast with strawberry and banana topping that's popular with children, too.

A number of factors influence the GI of bread. When you see what happens when we digest a piece of bread you will also see why we digest some breads more slowly than others.

When we chew the bread, it combines with saliva. Amylase, an enzyme in saliva, starts the process of chopping up the long-chain starch molecules into smaller-chain ones, such as maltose and maltodextrins.

When we swallow the bread, it lands in our stomach; there it gets pummelled and churned, much like clothes in a washing machine. The stomach's job is to deliver its load, bit by bit, to the small intestine. If the bread has viscous fibres in it (such as oats and flax) or is acidic (like sourdough), mixing takes longer and the stomach empties more slowly.

Once the bread is in our small intestine, an avalanche of digestive juices does the majority of the work involved in digestion. Starch is broken down into smaller and smaller chains of glucose. Many starches are rapidly digested, while others are more resistant, and therefore the process is slower. The starch inside any whole kernels in the bread will be protected from attack and take longer to be broken down to glucose. If the mixture of food and enzymes is highly viscous or sticky, owing to the presence of viscous fibre, mixing slows down, and the enzymes and starch take longer to make contact. The products of starch digestion will also take longer to move toward the wall of the intestine, where the



Low GI Family Cookbook (Hachette, Australia)



final steps take place. The monosaccharide that finally results from starch digestion is glucose. It is absorbed from the small intestine into the bloodstream, where it becomes available to the cells as a source of energy.

The rate at which glucose appears in the bloodstream (i.e., in a big gush, or as just a little trickle), is determined by the rate at which the bread is emptied from the stomach, the rate of digestion in the small intestine as well as the rate of absorption. And the shape of the final blood glucose curve will depend on how much insulin has been triggered.

Together, these factors influence its GI.



**Professor Jennie Brand-Miller** (AM, PhD, FAIFST, FNSA, MAICD) is an internationally recognised authority on carbohydrates and the glycemic index with over 250 scientific publications. She holds a Personal Chair in Human Nutrition in the Boden Institute of Obesity, Nutrition, Exercise and Eating Disorders and Charles Perkins Centre at the University of Sydney. She is the co-author of many books for the consumer on the glycemic index and health.

## THE BODEN INSTITUTE OF OBESITY, NUTRITION, EXERCISE AND EATING DISORDERS CLINICAL TRIALS

The Boden Institute is a joint initiative of the Faculties of Health Sciences, Medicine, and Science. The Institute is regularly recruiting participants for a range of clinical trials. The contact details for anyone interested in participating, particularly people with pre-diabetes, are:

- Email: [boden@sydney.edu.au](mailto:boden@sydney.edu.au)
- Telephone: (02) 8627 0101

## TOTAL WELLBEING DIET BOOK OFFER

The CSIRO Total Wellbeing Diet has just launched the *Complete Recipe Collection* with more than 400 of the best recipes from the program.

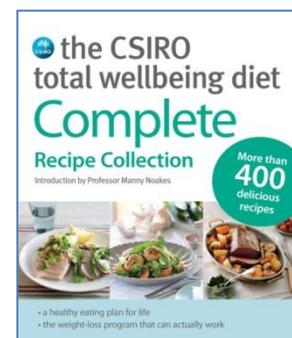
For a limited time, if you [sign up to the Total Wellbeing Diet's 12-week program](#), you will receive the *Complete Recipe Collection* book for half the normal price.

The new book is a carefully selected collection of the best recipes from the last 10 years of the CSIRO Total Wellbeing Diet with everything from easy everyday meals to big dinners for family and friends. It is a useful companion to the online program.

The total price is AUS\$169 and includes 12 weeks access to the scientifically proven online weight loss program, the *Complete Recipe Collection* (valued at AUS\$39.95) and free shipping.

What you get:

- 12 weeks access to the personalised weight loss program
- Daily menu and exercise plans and support from the online community
- The *Total Wellbeing Diet Complete Recipe Collection* book (valued at AUS\$39.95)
- Free shipping courtesy of Booktopia (valued at AUS\$6.95) – for Australia only
- Chance to get membership fee (AUS\$149) fully refunded\* at completion of program





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