

GI News—July 2010



- 7 steps to better blood glucose
- Rice: it's not the colour or size, it's the GI that counts
- Why you should check your vitamin B12
- The scoop on chromium
- Does sugar cause diabetes?
- Starchy vegetables – 10 things you need to know
- Prof Jennie Brand-Miller on carbs and blood glucose

In Food for Thought in this issue, we outline 7 steps to better blood glucose. You have probably never given your blood glucose a second thought unless you have diabetes. But out-of-control blood glucose is emerging as a major health crisis around the world. Our love affair with soft white bread, French fries, crispy breakfast flakes, sugary baked goods (all high GI foods) has led to an outbreak of insulin resistance – essentially, what happens when the body's system for handling blood glucose spikes gets worn out from overwork. In Australia for example, one in four people now has some impairment in glucose tolerance or insulin secretion. (The chances are nearly one in two for the overweight, over 45s.) Left unchecked, the result is metabolic syndrome – a precursor to heart disease, stroke and type 2 diabetes. Ask your doctor to measure your blood glucose levels next time you visit.

Good eating, good health and good reading.

Editor: Philippa Sandall

Web management and design: Alan Barclay, PhD

Food for Thought

7 steps to better blood glucose

1. Eat more regularly whether you have three meals a day or have three smaller meals plus snacks. If you use insulin or take medication that stimulates insulin production from your pancreas, it is helpful if you can maintain some consistency in the times you eat your meals. Make meals a time to relax and enjoy food – you are more likely to feel satisfied if you do. Just remember to put your knife and fork down

when you are full (not stuffed).

2. Switch to low GI foods – the ‘smart’ carbs (‘tricklers’) that are slowly digested and absorbed when you eat them producing only gentle rises and falls in your blood glucose and insulin levels. A Cochrane review (Thomas D, Elliott EJ. Low glycaemic index, or low glycaemic load, diets for diabetes mellitus. Cochrane Database of Systematic Reviews 2009, Issue 1.) that analysed 11 randomised controlled trials found that following a low GI diet significantly helps people with type 1 and type 2 diabetes improve their blood glucose levels. In fact, the researchers found that HbA1c (A1c) levels decreased by 0.5% with a low GI diet, and point out that the findings are significant both statistically and clinically. (HbA1c gives a picture of a person’s average blood glucose levels over several months.) You can check out our 10 tips to reduce the overall GI of your in the March 2009 edition of GI News.

3. Keep carb portions moderate – 50–60g of carbohydrate at any one sitting is a good average. On your dinner plate, that’s the equivalent of 1¼ cups of cooked (al dente) pasta – measure it out and see what it looks like. And in this super-sized world, eat smaller portions for your meals and snacks overall. Using smaller plates and bowls is a help.

4. Eat more fruits and vegetables. You see, it isn’t all about cutting back. Most people don’t eat anywhere near enough of them. Fresh, frozen, dried and canned (in juice not syrup) fruits are all suitable. And when it comes to non-starchy vegetables (leafy greens, tomatoes, onions, etc), you can eat as much as you like. As bonus, toss your salad in a vinaigrette dressing – adding acid to your meals can help reduce your blood glucose response. In GI Symbol News in this issue, Alan Barclay talks about serve sizes for starchy veggies.

5. Favour the good fats. The type of fat can make a big difference to your health and waistline. Cut back on saturated fat and focus on the good fats – monounsaturated fat (found in olive oil, nuts and avocados), omega-3 fatty acids (fish is the best source) and polyunsaturated fats (in vegetable oils). Fat doesn’t raise your blood glucose and it doesn’t require insulin in order to be metabolised so it doesn’t raise insulin levels either. And because it slows the rate at which food leaves your stomach it can blunt the blood glucose effect of a whole meal.

6. Eat more protein at every meal. It won’t increase your blood glucose levels and keeps hunger pangs at bay as it helps you feel fuller for longer. There’s no need to go overboard – a small (100g/3½oz) piece of lean chicken or steak, a little can of fish, a side dish of legumes, an egg, a tub of skinny yoghurt or a handful of nuts will do it.

7. Get regular physical activity. Exercising muscles need fuel and the fuel they prefer is glucose. So as soon as you start moving your muscles they’ll start burning up

glucose. First they'll use their own stores of glucose (that's glycogen); then they'll call on the liver for some of its stores, all the time drawing the glucose out of the blood and lowering your blood glucose levels.

'My aim is a calm pancreas – avoiding the highs and lows.' – Dianne

'I was devastated when I discovered that my fasting blood glucose levels were higher than normal and that I was on the path to type 2 diabetes. I did some research and was delighted to read that I could delay the onset of diabetes by changing my lifestyle and my eating habits. It's early days yet, but I have lost 6 kilos and I am walking for an hour 5–6 days a week. *The Low GI Handbook* has helped. I have changed my diet and am feeling so great – no more acid reflux, no more feeling sluggish after lunch. I have so much more energy and feel on top of world. My husband has joined me in support and he speaks volumes for changes he is feeling too. We are eating more fish and I can't believe how many fresh vegetables we get through in a week. We've not eaten white bread, biscuits, cake or sweet desserts now for 103 days! (I keep a diary of my food intake.) Instead, we've replaced these with grainy breads, nuts and berries. I can't wait for that follow up blood test my doctor said I should have a year after the last. I'm expecting a big change. Here's to a low GI diet for life!

The Low GI Handbook is available from bookstores and online.

Australian edition

(<http://www.dymocks.com.au/productdetails/ProductDetail.aspx?R=9780733622878>)

US/Canada edition (http://www.amazon.com/Low-GI-Handbook-Revolution-Long-Term/dp/0738213896/ref=sr_1_2?ie=UTF8&s=books&qid=1276672524&sr=8-2 available bookshops July13th; or as a pre-order from Amazon)

News Briefs

For better blood glucose, it's the GI not the colour of rice that counts

Consuming more white rice appears to be associated with a higher risk for developing type 2 diabetes, whereas consuming more brown rice may be associated with a lower risk for the disease, according to a report from researchers at Harvard University published in *Archives of Internal Medicine* (<http://archinte.ama-assn.org/cgi/content/abstract/170/11/961>). The NHS Choices Behind the Headlines (<http://www.nhs.uk/news/2010/06June/Pages/diabetes-risk-affected-by-rice.aspx>) review of this study makes the point that: 'Despite the quality of the study, the results don't actually prove that eating white or brown rice directly raises or lowers the risk

of type 2 diabetes,' as cohort studies like this can draw associations but cannot prove causation. They go on to say that the researchers' conclusions are in line with general recommendations that people should include more wholegrains in their diet because they are thought to have a number of health benefits.

GI Group: While choosing brown rather than white rice may help reduce your risk of getting diabetes (along with being active and eating a healthy balanced diet), it's the GI of the rice that matters. The Harvard researchers said that the average GI for white rice was 64 and for brown rice it was 55. The higher GI of the white rice, and the loss of fiber, vitamins, magnesium and other minerals, lignans, phytoestrogens, and phytic acid, in the refining process are the likely factors for the increased diabetes risk.

However, neither colour nor size are a good guide to the GI of rice. Its amylose content is what counts. Amylose is a kind of starch that resists gelatinisation. Although both white and brown rice are grain foods, when you cook them, millions of microscopic cracks in the grains let water penetrate right to the middle of the grain, allowing the starch granules to swell and become fully 'gelatinised', thus very easy to digest. It's true that popular white rices like jasmine have a high GI. But brown rice often has a surprisingly high GI too. This is because the insoluble fibre around brown rice is not viscous and it's micro-thin. It's easy for enzymes to attack the starch in rice because the milling operation has resulted in thousands of minute channels that allow water to hydrate the grain and gelatinise the starch during cooking. Greater gelatinisation of starch means higher GI. Finally, don't forget that a healthy low GI diet is associated with a lower risk of diabetes than either eating brown rice, or wholegrains in general.

The bottom line: For better blood glucose, opt for the lower GI varieties with a higher amylose content such as Basmati, Doongara Clever Rice, Moolgiri medium grain or the Uncle Ben's Ready Rice brown rice pouch range. These high-amylose rices stay firm and separate when cooked. But you still need to keep portions moderate, even when you choose a low GI rice as eating too much can have a marked effect on your blood glucose. Here's our tip: a cup of cooked rice combined with plenty of mixed vegetables can turn into three cups of a rice-based meal that suits any adult's daily diet.

Better blood glucose for kids with type 2

The incidence of type 2 diabetes and impaired glucose tolerance in young people is

sweeping the world at an alarming rate. In Australia for example, nearly 1 in 10 young people with diabetes now has type 2. Twenty years ago it was almost unheard of in this age group. Managing type 2 involves helping the kids normalise their blood glucose levels, reduce their blood fats and blood cholesterol and prevent the progression or development of complications.

A small cross-over pilot study published in the *Journal of Pediatrics* (<http://www.ncbi.nlm.nih.gov/pubmed/19874764>) has found that the average mean daytime blood glucose was significantly lower when the kids ate a low GI diet (GI 40) compared with the day they ate a higher GI diet (GI 64).

For the study, 12 obese young people aged between 7 and 16 with type 2 diabetes or impaired glucose tolerance were served a full day of high GI and a full day of low GI meals (matched for carbs, protein and fat content) in a supervised clinic setting. Participants demonstrated significantly lower mean daytime blood glucose and a trend toward lower variability, suggesting a clinically relevant impact of reducing glycemic index.

In their conclusion, the authors, Lauren Gellar and Dr Tonja Nansel write: 'Our findings are of particular importance given that children who develop disorders of glucose metabolism are likely to be a particularly high-risk group. Thus the ability to demonstrate substantial differences in blood glucose with a dietary change lasting a single day suggests that a low GI diet is a promising approach for achieving improved health outcomes.' For reprints of this study contact Dr Tonja Nansel at nanselt@mail.nih.gov

Resistance exercise better than aerobic for blood glucose

Ten weeks of resistance exercise (3 sessions a week of typically around 35 minutes) were associated with significantly better glycemic control in adults with type 2 diabetes compared with aerobic treadmill exercise although the average energy expenditure for both exercise groups was similar according to a study published in *Diabetology and Metabolic Syndrome* (<http://www.dmsjournal.com/content/1/1/27>).

Before each session, participants in both groups performed warm up exercises, consisting of stretching exercises for the major muscle groups and there were no differences between the groups concerning their perceived exertion,' write the authors. 'The resistance training group followed an individually monitored

progressive resistance training program using multiple-station universal weight machines. Seven exercises were used for resistance training that encompassed knee and hip flexion/extension, shoulder flexion/extension, adduction/abduction, elbow flexion/extension and a chest press. Three sets of 8–10 repetitions were performed for all exercises,' they report.

If you take metformin, get your B12 checked

If you have diabetes and have been taking metformin (brand names such as Glucophage, Glucophage XR, Fortamet, Riomet, Glumetza, and others) for years, ask your doctor to check the level of vitamin B12 in your blood. A recent study published in the *British Medical Journal*

(http://www.bmj.com/cgi/content/full/340/may19_4/c2181) reports that metformin may lead to a B12 deficiency. We need minute amounts of this vitamin (also known as cyanocobalamin or cobalamin) a day for the production of red blood cells and to maintain healthy nerves and a healthy brain.

'Our data provide a strong case for routine assessment of vitamin B-12 levels during long term treatment with metformin,' concludes Coen Stehouwer. The 4-year study tracked 390 people with type 2 diabetes and found that the 196 participants taking metformin had a 19% reduction in their vitamin B12 levels compared with the 194 participants who had taken a placebo, who had almost no B12 change. The reduced levels of vitamin B12 in the metformin group also persisted and became more apparent over time, they said.

Where do you get it? Most of us get plenty of vitamin B12 from our diet as red meat, milk, cheese, eggs, fish, shellfish and fortified breakfast cereals and enriched soy or rice milk. You can also take a supplement. What about mushrooms? Dietitian Glenn Cardwell writes: 'To accurately establish the levels of B12 in mushrooms, scientists at the University of Western Sydney checked mushroom samples from the major mushroom growing centres around Australia in 2009. Writing in the *Journal of Agricultural and Food Chemistry* (<http://www.ncbi.nlm.nih.gov/pubmed/19552428>) they report that there is a modest amount of B12 in mushrooms, closer to 5% of daily needs in a serve (three button mushrooms). It is the same type of B12 as found in meats and seafood, so it is the type of B12 that the body finds very easy to use.

Get the Scoop on Nutrition with Emma Stirling

The scoop on chromium

What first pops in your head when you hear chromium or chrome? Chances are it's the silvery parts or trim on a prized car or Harley. But did you know that as well as helping a motor sheen, chromium may help get your motor running too because it's an essential trace mineral that's absolutely essential for good health. It may only play a bit part alongside the dietary biggies (iron, calcium or zinc), but that bit part is a key player in how our bodies metabolise carbohydrate, fat and protein.

Of course, if you've been driving down the diabetes highway for a while and doing what you can to manage your blood glucose levels, then you're likely to have seen more signposts on chromium than most people. Why? Well chromium supplements are a popular pill to pop in people with diabetes. Also with bodybuilding gym junkies looking to shine and making up over 5% of all supplement sales in the US.

Where to get it? Being a mineral, chromium is widely available in the food supply and only a tiny or trace amount (ranging from 25-45micrograms per day) is required for good health. The best source of chromium is brewer's yeast, but many people don't go there because it can make you feel bloated and even cause nausea. More popular choices include: bran based breakfast cereals, wholegrain breads and cereals, egg yolk, cheese, yeast extract like Vegemite, fruits such as apples, oranges and pineapple, vegetables such as broccoli, mushrooms, potatoes with their skin on, tomatoes, liver, kidney and lean meat, peanuts, oysters and some spices like pepper and chilli.

What's the link with blood glucose? So if chromium is so easy to get from a healthy diet why all the diabetes hype? Scientists have known for decades that chromium is involved in glucose metabolism. Originally believed to make up a glucose tolerance factor, more recent research suggests that chromium is part of a very small protein molecule that helps activate insulin receptors in your body's cells. And this in turn makes your insulin work more effectively and better manages your blood glucose levels.

It would therefore seem logical that people with low levels or deficiencies of chromium, could have blood glucose control problems. And bingo, you're right. We know from medical history that patients fed early intravenous solutions without

chromium, developed high blood glucose levels and reversible diabetes. But is more chromium necessarily better and can you have too much of a good thing?

Chromium in question Several studies have looked at whether or not people with diabetes or pre-diabetes should take a regular chromium supplement with mixed results. However, a systematic review published in *Diabetes Care* (<http://www.ncbi.nlm.nih.gov/pubmed/17519436>) concluded that in people with either normal glucose tolerance or glucose intolerance (pre-diabetes), chromium supplementation did not appear to have an effect. However, in people with existing type 2 diabetes studies on chromium supplementation using brewers' yeast or an absorbable form of supplement called chromium picolinate, did have an overall modest benefit on blood glucose control.

The researchers are quick to point out though that more studies are needed before definitive claims or advice can be made about chromium supplements with diabetes. As there is no evidence of widespread chromium deficiency, eating a varied, balanced diet with plenty of good sources of chromium is the best bet approach.

Health authorities also caution that as chromium accumulates in the body and there are a number of adverse effects of high intakes, including renal failure, there is a risk of toxicity from supplements. And remember, because of the potential interactions between nutrients and medications, it pays to speak to your health professional before taking any new supplements.

The scoop? It's probably best not to take a chromium supplement 'just in case' until more studies are completed. But if you feel your diet is inadequate or your motor needs a tune-up, speak to an Accredited Practising or Registered Dietitian.

Emma Stirling is an Accredited Practising Dietitian and health writer with over ten years experience writing for major publications. She is editor of The Scoop on Nutrition (www.scoopnutrition.com) – a blog by expert dietitians. Check it out or subscribe for hot news bites and a healthy serve of what's in flavour.

In the GI News Kitchen

American dietitian and author of *Good Carbs, Bad Carbs*, **Johanna Burani**, shares favourite recipes with a low or moderate GI from her Italian kitchen. For more information, check out Johanna's website (www.eatgoodcarbs.com). The

photographs are by Sergio Burani. His food, travel and wine photography website is www.photosbysergio.com.

Italian almond crunch

In the post-war years in Italy, it was hard to come by sweets and treats. Yet, children are always children and, even back then, there were sweet cravings. My husband remembers this recipe that his mother prepared all too infrequently! Makes 64 pieces (or 32 servings @ 2 pieces each)

1½ cups blanched and peeled almonds, coarsely chopped

½ cup honey

¾ cup plain flour

2 egg whites or 1/3 cup liquid egg whites

- Preheat oven to a 250. Cover a jellyroll pan (11" x 16") with parchment paper.
- Pour the honey into a medium-sized, microwave-safe mixing bowl and microwave on high for 30 seconds to warm.
- Mix the flour into the warmed honey. When the mixture is smooth, add in the almonds and continue mixing. Set aside.
- In a small mixing bowl, beat the egg whites on high speed for 4 minutes or until stiff, dry peaks form. Add to the nut mixture and mix until the egg whites are absorbed into the mixture.
- Spread mixture thinly on the prepared pan. Bake for 1 hour or until golden colour appears. Let cool thoroughly in the pan before cutting into 64 small pieces.

Per serving (2 small pieces)

Energy: 281kJ/67cals; Protein 2g; Fat 4g (includes <1g saturated fat); Carbs 8g; Fibre 1g

Cut back on the food bills and enjoy fresh-tasting, easily prepared, seasonal, satisfying and delicious low or moderate GI meals that don't compromise on quality and flavour one little bit with **Money Saving Meals** author Diane Temple. For more recipes check out the Money Saving Meals website (www.moneysavingmeals.com.au).

Rosemary beef and vegetable pot pies

These pies are a virtually a meal in a pot. When Diane started making them, hubby Ben was so excited. But he got really worried when he heard it was GI News editor

Philippa's suggestion and asked questions like: 'You will use pastry won't you and not sweet potato and butter bean mash,' and 'I suppose she'll want you to add lots of vegetables too' ... The answer to both is yes, of course. And of course you can cut back on the saturated fat and top the pies with sweet potato or pumpkin mash. Makes 8 serves

2 tbsp oil

800g (1¾lb) lean gravy beef, cut into 2cm (1in) chunks

2 large onions, chopped

1 tbsp fresh chopped rosemary

2 large carrots, peeled, quartered lengthwise, sliced thickly

4 large cloves garlic, crushed

2 tsp dried oregano

1 tsp sweet paprika

1/3 cup tomato paste

1½ cups chicken stock

200g (7oz) large mushrooms, halved, then sliced thickly

4 small zucchinis (courgettes), quartered lengthwise, sliced thickly

400g (14oz) can 4-bean mix, rinsed and drained

¼ cup chopped parsley

2 sheets reduced fat puff pastry, each cut into 4 squares

Milk

- Heat 1 tablespoon of the oil in a large saucepan and brown beef in 2 batches over medium heat (about 3 minutes a batch). Remove and place in heatproof bowl. Add the remaining oil, reduce the heat and cook the onion and rosemary for 5 minutes until the onion is soft. Stir in the carrots, garlic, oregano, paprika and tomato paste. Return the beef to the pan and mix well to combine. Pour in the stock, bring to the boil, cover and simmer for 1 hour. Add the mushrooms and zucchini to the stew, stir, and simmer for 20 minutes, covered. Stir in the 4 bean mix and continue to cook for 10 minutes, uncovered. Stir in parsley, season to taste and set aside to cool a little. Meanwhile ...
- Preheat the oven to 200°C (400°F). Place eight 1-cup ramekins on a baking tray. Brush rims with water.
- Spoon a generous ¾ cup of stew into each ramekin making sure everyone gets a fair share of beefy chunks and veggies. Top pots with pastry squares pressing gently onto ramekin rim. Brush pastry with a little milk and make 2 slashes to let steam out.

- Bake for 20–25 minutes or until pastry is golden. Stand for a few minutes before serving as the filling is very hot.

Per serving

Energy: 1622kJ/ 388cals; Protein 30g; Fat 16g (includes 6g saturated fat and 57mg cholesterol); Carbs 26g; Fibre 6g

Sue's unbelievably creamy tofu 'sour cream'

Dietitian Sue Radd runs culinary medicine cookshops in Sydney and on **20 July the program is 'Simple Meal Ideas to Make Low GI Eating Delicious'**. For *GI News*, Sue whipped up a super-quick, dairy-free 'sour cream' made from a medium-soft tofu. Use it exactly the same way you would sour cream – topping a baked potato or baked sweet potato wedges, making mash or dips, spreading on toast or mixing into vegetable soups. Makes 2¼ cups

300 g medium-soft tofu

pinch salt

¼ clove garlic, finely crushed

2 tbsp lemon juice

1 tbsp extra virgin olive oil

½ tsp dry mustard

Pat the tofu dry with absorbent kitchen paper. Place it in a blender with the other ingredients and process until smooth. Transfer to a glass jar and refrigerate for 2 hours before serving. Store up to 2 days, giving it a good stir before using.

Per serving (1 tablespoon)

Energy: 100kJ/ 24cals; Protein 0g; Fat 2g (includes <1g saturated fat); Carbs 0g; Fibre 0g

Book here for Sue's Cookshop classes

(<http://sueradd.com/cooking/cookshops.html>).

Busting Food Myths with Nicole Senior

Myth: *Sugar causes diabetes.*

Fact: *Sugar intake is not associated with diabetes. Type 2 diabetes is not caused by one food but from a combination of diet and lifestyle risk factors.*

Of all the nutrition myths around, this one is the big daddy of them all. I used to work for a diabetes organisation and this old chestnut came up time and time again. Eating sugar is not implicated in the development of either type 1, or type 2 diabetes. At this stage type 1 diabetes is not preventable.

Type 2 diabetes is one of the fastest growing diseases in the world. So what do we know about preventing it? We know a healthy diet and lifestyle is crucial. The biggest risk is being overweight or obese. Diabetes Australia says up to 60% of diabetes cases could be prevented by staying in the healthy weight range. Carrying fat around your middle is particularly risky. The excess fat makes insulin resistance – the underlying cause of type 2 diabetes – worse. Smoking increases the risk of everything, including diabetes.

Keeping fit and active is protective – we all need to manage more movement in our day (I'm currently trying to stand up every time I'm on the phone). Large scale population studies show when it comes to food, those with the lowest risk eat the most cereal fibre and polyunsaturated fats, and eat diets low in glycemic load and trans fats. A meta-analysis authored by our own Dr Alan Barclay (Barclay AW, et al. *Am J Clin Nutr.* 2008 Mar;87(3):627-37) found those eating the highest GI diet had a 40% higher risk of type 2 diabetes than those with the lowest GI diet. Selecting lower GI and wholegrain foods in a balanced diet is a positive step toward a future free of diabetes.

Why has the 'sugar causes diabetes' myth persisted? Probably in part because diabetes is simply explained as 'too much sugar in the blood', and was even called 'sugar diabetes' in the past. The leap of logic is obvious. However what is not obvious is that eating table sugar (sucrose) does not dramatically increase the sugar (glucose) in the blood. The effect of foods on blood glucose levels – we now know – is described by the glycemic index (GI). The GI of table sugar is in the medium range at 65 and dwarfed by high GI foods such as Turkish bread (86), mashed boiled potato (91) or jasmine rice (89). Not that I'm suggesting we avoid high GI foods and eat lots of sugar, but we can stop avoiding added sugar totally and demonising it as a cause of diabetes.

We can enjoy added sugar in moderation: a spoonful of sugar can help nutritious foods go down. I love a drizzle of honey (just another form of sugar) over my low fat natural yoghurt, a spread of marmalade on my wholegrain toast, and the ability of sugar to produce delightfully light and airy low fat ice cream. I still add half a

teaspoon of sugar to my morning coffee which – to my tastebuds – provides just the right balance to the bitterness of the coffee. I see no reason to change. It's simply another case of 'a little bit of what you fancy' is OK.

Nicole Senior MSc (Nut&Diet) BSc (Nut) is an Accredited Practising Dietitian and Nutritionist and author of *Eat to Beat Cholesterol* and *Heart Food* containing evidence-based, trustworthy advice about eating well for your heart. Check out her website at www.eattobeatcholesterol.com.

GI Symbol News with Dr Alan Barclay

Starchy vegetables – 10 things you need to know for better blood glucose

- 1.** When it comes to seriously starchy vegetables like potatoes, sweet potatoes, corn, taro and yams, you need to think of them as the Vegetable Kingdom's equivalent to rice or pasta. Their GI is very relevant when it comes to managing your blood glucose levels and you need to be moderate with what you put on your plate.
- 2.** Root vegetables like beetroot (GI 64), carrots (GI 41), parsnips (GI 52), swedes/rutabaga (GI 72) and vegetable fruits and seeds like squash/pumpkin (GI 66), green peas (GI 48) and legumes or pulses (GI 14–53) have smaller amounts of carbohydrate than potatoes and are packed with micro-nutrients. A typical serving size won't give your blood glucose levels an excessive boost, even the ones with higher GI values.
- 3.** But, there's no need to say 'no' to potatoes just because most varieties have a high GI. They are fat free (when you don't fry them), nutrient rich and filling. Not every food you eat has to have a low GI. So enjoy them in moderation. But look for the lower GI varieties or serve them in a way to reduce their glycemic impact – such as potato salad with a vinegary vinaigrette dressing.
- 4.** Starchy vegetables are a good source of fibre (when you don't peel them) and micro-nutrients including vitamin A (yellow/orange-fleshed veggies), B vitamins, vitamin C and potassium.
- 5.** Some, like legumes or pulses, are important sources of protein, especially for vegetarians or vegans.
- 6.** They tend to be 'feel-full' foods. Their high fibre and water content means that they are bulky, and help to satisfy your appetite.
- 7.** They aren't fattening by themselves. It's how you cook them and what you pour over them that adds the calories (kilojoules).
- 8.** They are great mixers. Combining them in bakes or gratins or pilafs will boost the variety of vitamins, minerals and phyto-nutrients you get and lower the GI if you

combine higher GI veggies with low GI ones, eg mashed potato with butter beans.

9. Their place is the carb quarter of the dinner plate (and within the inner rim too and not piled up like a pyramid).

10. Here's what a serving of the most popular starchy vegetables is equal to: 1 medium (13 cm/80g) ear of corn, ½ cup (90g) corn kernels, ½ cup (85g) cooked chickpeas, kidney beans, borlotti beans etc., 2/3 cup (125g) cooked lentils, 1 cup (180g) cooked split peas, ½ cup diced sweet potato (90g), 2 small new potatoes or 1 medium sized (125g) and ½ cup mashed potato (120g).



For more information about the GI Symbol Program

Dr Alan W Barclay, PhD

Chief Scientific Officer

Glycemic Index Foundation (Ltd)

Phone: +61 (0)2 9785 1037

Mob: +61 (0)416 111 046

Fax: +61 (0)2 9785 1037

Email: alan@gisymbol.com

Website: www.gisymbol.com

GI Update

GI Q&A with Prof Jennie Brand-Miller

If carbohydrates increase my blood glucose level, wouldn't a low carbohydrate diet make better sense for better blood glucose?

In theory, a low-carbohydrate diet seems a logical choice if your aim is simply to reduce blood glucose levels. But presumably your goal is optimum health, with not just good glycemic control, but reduced risk of chronic disease. If so, low-carbohydrate diets have little to offer. In practice, they are difficult to sustain over the long term because carbohydrates are part and parcel of our Western diet. In fact,

there is strong evidence to suggest that moderate- to high-carbohydrate diets are better for your health and easier to sustain.

Low-carb diets come in many forms and more research is needed before we can be sure that they are safe over the long term. We do feel people should be wary of the more extreme low carb diets that are based on the concept of avoiding carbohydrate-based foods – restricting even fruits and vegetables. Chances are they are high in saturated fats and a recipe for ill-health in the long term.

The South Beach Diet, on the other hand, recommends less carbohydrate (about 30–40 percent instead of 55 percent) and more protein (25–30% instead of 15%) and good fats such as olive oil. It includes advice about quality of carbohydrate (low versus high GI) and type of fat (unsaturated versus saturated). If you enjoy this way of eating, then there's nothing really wrong with it. But over time, you may find yourself yearning for higher carb foods like bread and potatoes.

You can find the answers to over 100 FAQs about blood glucose levels in:

What Makes My blood Glucose Go Up and Down. It's available from bookstores and Amazon:

US/Canada edition (http://www.amazon.com/Glucose-Revolution-What-Makes-Blood/dp/1569243026/ref=sr_1_2?ie=UTF8&s=books&qid=1276672417&sr=8-2)

UK edition (http://www.amazon.co.uk/gp/product/images/0091906660/sr=8-1/qid=1276672290/ref=dp_image_0?ie=UTF8&n=266239&s=books&qid=1276672290&sr=8-1)

New GI values with Fiona Atkinson

If you like to nibble on a savoury snack occasionally ...

Here at SUGiRS we have just tested Smith's Grain Waves Original Flavoured Wholegrain Chips. Here's what we found:

- GI 51, available carbs per serving 18g and GL 9.
- According to the ingredient label they contain (in descending order): corn, wheat, oats, vegetable oil (100% high oleic sunflower oil), rice, sugar and salt.
- A standard 28 g serving of 12 'chips' according to the nutrition information panel provides: 569kJ (135 calories), 2g protein, 6g fat (incl. 1g sat fat), 18g carbs, 1.7g fibre and 122mg sodium.