

## GI News—March 2010



- Prime your metabolism to burn fat
- Eggs for breakfast help weight loss
- Blood glucose and cancer risk
- Renovate your breakfast with grains, cereals and porridges
- New GI values for breads and juice beverages
- Prof Jennie Brand-Miller on why breakfast flakes have a high GI

This month we take a look at breakfast in Food for Thought. We aren't going to tell you that it's the most important meal of the day – all your meals are important, or that you should eat like a king. After all, out here in the real world, most of us save the king-size meal for dinnertime. Why breakfast is important is that it breaks the longest time your body goes without incoming food so what you eat affects your blood glucose and insulin levels more than meals and snacks later in the day. We highlight some breakfast studies in News Briefs; dietitian Sue Radd talks about grains, cereals and porridges in Food of the Month, Dr Alan Barclay sets out the criteria for breakfast cereals carrying the Low GI Symbol and in GI Update Prof Jennie Brand-Miller explains why healthy high-fibre cereals like bran flakes actually have a high GI.

Good eating, good health and good reading.

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### Food for Thought

#### **Prime your metabolism to burn fat with a low GI breakfast**

Breakfast jump-starts your metabolism, helps you concentrate better (no hunger pangs to distract you) and generally gets the day off to a good start. Forget the excuses. It's easy to whip up.

There actually aren't fixed rules about when to have breakfast. We all have different needs, backgrounds, lifestyles and morning rush hour timetables. Just do it, whether you sit down with the family, grab something as you head out the door, have breakfast in a café, canteen or at your desk, or make your mid-morning break your 'breakfast'.

Yes, it's that flexible, it's just the first eating occasion of the day. However, research shows that eating breakfast first thing in the morning helps stabilise blood glucose levels, which control appetite and energy. The longer you wait, the more insulin resistant you may become. This means that whatever you eat next will require an elevated insulin response, making life harder for your beta cells and probably resulting in an elevated blood glucose reading.

What you eat for breakfast is what really matters. A healthy low GI breakfast can sustain you until lunchtime, prime your metabolism to burn fat and reduce your day-long insulin levels more effectively than any other single dietary change. It's easy to put together. It just needs some:

- **Low GI carbs.** Why? They trickle glucose into the blood stream, fill you up, give you energy and can reduce your day-long insulin levels more effectively than any other single dietary change.
- **Protein.** Why? It's the feel-fuller-for-longer nutrient, keeping hunger pangs at bay between meals. It also lowers the glycemic load (by replacing some of the carbohydrate).
- **Fruit and/or vegetables.** Why? A high fruit and veg intake is consistently linked with better health. If you don't have some for breakfast it will be hard to achieve your daily target (2 serves of fruit and 5 of vegetables is recommended in Australia, for example)

Choose foods from each column and prime your metabolism to burn fat.

Low GI carbs	Protein	Fruit and vegetables
Natural muesli	Low fat milk	Fruit and berries – fresh, frozen, canned (not in syrup) or dried
Traditional rolled (or steel cut) oats	Low fat yoghurt	Vegetables – fresh, frozen or canned (salt reduced)
Low GI breakfast cereals	Eggs	Mushrooms – fresh or canned (salt reduced)
Toast made with chewy, grainy low GI breads, real sourdough bread, or soy and linseed bread	Tofu	100% fruit juice (keep it small) or vegetable juice
Fruit loaf, the denser the better	Baked beans	
Baked beans	Lean sliced ham or bacon shortcuts (eye only)	
Sweet corn kernels	Ricotta, cottage cheese or labneh (yoghurt cheese)	
Low or lower GI rice	Reduced fat hard (cheddar) cheese (1 slice or a 30g piece)	
	Sardines or other fish	
	A few nuts (not salted)	

## News Briefs

### More fat loss bang for your exercise buck with a low GI breakfast

'If you are trying to shed fat, you may consider eating low GI foods before you exercise,' suggests Dr Emma Stevenson. Her study published in the Journal of Nutrition

([http://www.ncbi.nlm.nih.gov/pubmed/19321590?itool=EntrezSystem2.PEntrez.Pubmed.Pubmed\\_ResultsPanel.Pubmed\\_RVDocSum&ordinalpos=5](http://www.ncbi.nlm.nih.gov/pubmed/19321590?itool=EntrezSystem2.PEntrez.Pubmed.Pubmed_ResultsPanel.Pubmed_RVDocSum&ordinalpos=5)) found that a low GI breakfast before exercising could help with weight loss because it increases fat oxidation both at rest and during subsequent exercise. 'A low GI breakfast also had an impact on appetite, with the women feeling fuller for longer after they'd eaten these types of foods,' said Dr Stevenson.

Eight healthy women ate either a high GI breakfast or a low GI one in test sessions several days apart (each breakfast contained the same number of calories and same proportion of those calories from carbs, fat and protein). Three hours later they did 60 minutes on a treadmill before lunch.

Blood glucose was higher – as expected – after the high GI breakfast than the low GI one, and had returned to normal levels by the time the women began exercising. But plasma free fatty acids (FFA) – which indicate the amount of fat being used as an energy source – began to rise two hours after the low GI breakfast. Exercise led to a rapid increase in FFAs in both groups – but concentrations were higher in the low GI group. After lunch the concentration of FFAs was the same in both groups, but overall fat oxidation was higher in the low GI group than the high GI group.

### **Eggs for breakfast help weight loss**

A study published in the International Journal of Obesity

(<http://www.nature.com/ijo/journal/v32/n10/abs/ijo2008130a.html>) shows that eating two eggs for breakfast, as part of a reduced-calorie diet, helped overweight adults lose more weight and feel more energetic than those who ate a bagel breakfast of equal calories.

This study supports previous research, published in the Journal of the American College of Nutrition

([http://www.ncbi.nlm.nih.gov/pubmed/16373948?itool=EntrezSystem2.PEntrez.Pubmed.Pubmed\\_ResultsPanel.Pubmed\\_RVDocSum&ordinalpos=16%20](http://www.ncbi.nlm.nih.gov/pubmed/16373948?itool=EntrezSystem2.PEntrez.Pubmed.Pubmed_ResultsPanel.Pubmed_RVDocSum&ordinalpos=16%20)) which showed that people who ate eggs for breakfast felt more satisfied and ate fewer calories at the following meal. 'People have a hard time adhering to diets and our research shows that choosing eggs for breakfast can dramatically improve the success of a weight loss plan,' said lead researcher Nikhil Dhurandhar, PhD. 'Apparently, the increased satiety and energy due to eggs helps people better comply with a reduced-calorie diet.'

### **Is an egg a day OK? It depends ...**

'Eggs are very nutritious. They are a good protein source,' says dietitian Glenn Cardwell. They also contain omega-3 fats, as well as 11 different vitamins, minerals and antioxidants. The common belief that eggs cause high cholesterol is untrue. 'This idea was made on the assumption that cholesterol in food became cholesterol in your blood, which

we now know to be incorrect. Most health authorities agree that an egg a day will do no harm – provided it's not soaking in bacon fat,' says Glenn [www.glenncardwell.com](http://www.glenncardwell.com)

'However, people with diabetes or those at risk should not consume an egg a day,' says Dr Alan Barclay. 'There is evidence that daily egg consumption will significantly increase the risk of developing type 2 diabetes (<http://www.ncbi.nlm.nih.gov/pubmed/19017774>) and common diabetic complications in people with existing diabetes (<http://www.ncbi.nlm.nih.gov/pubmed/18400720>),' he said.

### **Staying up to date with breakfast research**

On the Breakfast Research Institute (funded by Quaker and Tropicana) website (<http://www.breakfastresearchinstitute.org/>) you can check out published studies relevant to breakfast science. (Links to PubMed abstracts are provided where available.) The News section includes reviews of recently published studies summarizing research objectives, design/methods, results, strengths and limitations. There's also a commentary on the study.

For example, here's what they say about the recent **Association of Breakfast Skipping with Visceral Fat and Insulin Indices in Overweight Latino Youth** study published in Obesity (<http://www.nature.com/oby/journal/v17/n8/abs/oby2009127a.html>).

[Summary] 'Breakfast skipping [in overweight Latino adolescents] was related to increased visceral fat independent of age, gender, total fat, total lean tissue, and total energy intake.' Even occasional breakfast consumption appeared to result in lower visceral adiposity.'

[Commentary] 'This is a well-designed and well-executed study on a minority population examining the relationship of breakfast consumption to changes in visceral adiposity. The study adds support to the importance of breakfast in a high risk (adolescent) minority population. It also breaks new ground in a useful area of study, setting up further exploration into breakfast and visceral adiposity in differing populations. The authors also plan future longitudinal studies of the factors examined in this study and studies examining the potential influence of eating patterns and breakfast composition on specific adiposity and insulin dynamics measures in this population. The importance of visceral adiposity and the relationship to chronic disease has already been established, making this a study of great interest in breakfast research literature.'

### **Blood glucose and cancer risk**

People with elevated blood glucose levels have a greater cancer risk than those with glucose levels in the normal range according to the findings of a prospective cohort study published in PLoS Medicine

(<http://www.plosmedicine.org/article/info%3Adoi%2F10.1371%2Fjournal.pmed.1000201>). For every mmol/L increment of glucose, the incident of cancer was 11% greater among women, and 5% among men. The association was more significant in certain forms of cancer, such as in the pancreas, liver, gallbladder, and urinary bladder.

The study, which was headed by Dr Tanja Stocks and colleagues from the University of Umeå, included about 275,000 men and 275 women from Sweden, Norway and Austria. Their blood glucose levels were measured at the beginning of the study and their risk of cancer during the follow up (typically about 10 years later). 'We still do not know for certain if the effect of high blood glucose directly causes cancer, or whether other factors are behind the association. We believe that a lifestyle that is beneficial for blood glucose control also reduces the risk of cancer,' says Tanja Stocks.

Because this study made the headlines, it was reviewed by the NHS Choices 'Behind the Headlines' team. 'Overall,' they say 'this research provides some evidence that high blood glucose is associated with an increased risk of some types of cancer. However, it did not directly test or suggest that high blood glucose causes these cancers. Although the research did find an association between high blood glucose levels and cancer risk, there are many other lifestyle, medical and genetic factors that may contribute to a person's likelihood of developing cancer, few of which were considered in this analysis.' Read more (<http://www.nhs.uk/news/2010/01January/Pages/Blood-sugar-and-cancer-risk.aspx>).

### **New website for type 2: [www.theodb.com.au](http://www.theodb.com.au)**

The ODB is a brand new website for people with type 2 diabetes. It covers all the new drugs and treatments. The man behind it – Jim Montgomery – is a low GI diet success story. He swears his 11 years of an HbA1C of around 5.5-6.0 is due to exercise and Jennie Brand-Miller's Low GI Diet. His belief shows in the weekly updates of the ODB [the Original Diabetes Blog] where there is always a story about the low GI diet. In its first issues, Jim is engaged in an interesting trial of the world's first, blue-toothed glucometer automatically reporting back to a specially prepared, personal website on Telstra's BigPond. Check it out at <http://www.myglucohealth.com.au/>.

## **Renovate your Recipes**

### **Renovate your breakfast with grains, cereals and porridges**

Dietitian Sue Radd's *The Breakfast Book* highlights the vital role breakfast plays in our health and wellbeing, and offers deliciously original porridge and muesli recipes from around the world made with unprocessed or minimally processed grains – Baked brown rice porridge with fruits, Buckwheat porridge (a traditional Slovenian recipe), Cinnamon

spiced quinoa with dried fruits, African mielimeel porridge, Fig and almond couscous porridge, Warm barley and cherry pudding, Millet with macadamia and currants and Fragrant wheat with figs, prunes and peaches.

‘Natural unprocessed or minimally processed grains are under-utilised as a breakfast food,’ says Sue, ‘because few people know how to cook them. In fact you can buy most grains – rye, triticale, barley, wheat, rye and amaranth – rolled, just like traditional rolled oats. I simply use a variety of rolled grains to make a base for my toasted muesli and then add nuts and seeds and dried fruit.

Another grain I love to use is polenta. I grew up eating polenta for breakfast, not Weet-Bix or corn flakes. Polenta is very common in certain parts of Europe. The smooth, porridge like consistency makes it suitable for the entire family. The bright yellow colour is due to carotenoids present in corn. I find the easiest way to enjoy polenta is with milk, but of course you can also serve it on a dinner plate with garlic-scented sauerkraut, natural yoghurt and cottage cheese!

I also like to make the most of whole wheat kernels, though you probably have to go to a health food shop to buy them. Your entire kitchen will become fragrant with warm earthy aromas when you cook wheat. My favourite dish is a porridge based on the traditional Croatian recipe for ‘zito’, commonly eaten for breakfast or as a snack during the day. You can use other whole grains such as spelt or triticale for this, too. I like this dish kept simple, but if you prefer, add a dollop of yoghurt to serve. This is real comfort food as well as being highly portable – just pop it into a plastic container with a lid to go. You can also make it the night before – it keeps well in the fridge for up to a week. It is super-rich in dietary fibre. Tip, the wheat only takes about 20 minutes to cook if you use a pressure cooker.

### **Sue’s fragrant wheat with figs, prunes and peaches**

1 cup whole wheat  
1/3 cup pecans, coarsely ground  
5 dried figs softened in water for 10 mins, chopped  
¼ cup pitted prunes, chopped  
½ cup dried peaches, chopped  
1 tbsp honey

Place the wheat in a saucepan with 5 cups water and cook, covered for about 1 hour or until tender. Drain the wheat through a sieve and place in a large mixing bowl with the other ingredients. Mix well until combined. Serve while the wheat is still warm or enjoy later when cooled. Makes 5 serves.

*Per serving*

Energy: 1022 kJ/ 243 cal; Protein 8 g; Fat 7 g; Carbohydrate 46g; Fibre 9g

## 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 (<http://www.eatgoodcarbs.com/>). The photographs are by Sergio Burani. His food, travel and wine photography website is [photosbysergio.com](http://photosbysergio.com).

### Fruit compote with Grand Marnier

Italians eat fruit for dessert. Fresh fruit must be just that – fresh. As the winter season draws to an end, before the spring berries and early fruits like apricots and cherries appear, cooks take their no-so-fresh-anymore apples and pears and slowly stew them, often adding spices and liqueur. Here's how I do it.

Makes 9 half-cup (approx) servings

3 large cooking apples (Cortland, Jonathan, Macintosh)

2 ripe pears (Bosc)

1½ tbsp Grand Marnier liqueur

1/8 tsp ground cardamom

Wash, core and cut the fruit into bite-size pieces (do not peel). Place them in a large (3-quart) heavy-based saucepan. Cover the pan and cook slowly over low heat for 15 minutes, stirring frequently. Uncover the pan, add in the liqueur, increase the heat and cook for another 2–3 minutes to allow the alcohol to evaporate. Remove from heat, add the cardamom and mix thoroughly. Chill before serving. Makes about 9 half cup servings.

*Per serving*

Energy: 168 kJ/ 40 cal; Protein less than 1g; Fat less than 1g; Carbs 9g; Fibre 2g

**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 Diane's Money Saving Meals website (<http://www.moneysavingmeals.com.au/>).

### Tabbouli

Also known as cracked wheat, burghul (GI 48) is made from whole wheat grains that have been hulled and steamed before grinding to crack the grain. The wheat grain remains virtually intact—it is simply cracked – and the wheat germ and bran are retained, which preserves nutrients and lowers the GI. Use it as a breakfast cereal, in tabbouli, or add it to

pilafs, vegetable burgers, stuffing, stews, salads and soups.

When I was shopping for burghul in my local Middle Eastern food store, the owner leaned over the counter and said. 'Don't use too much, just a small handful if you are making tabbouli.' She then proceeded to share her recipe with me where the burghul is softened by the juices of the cucumber and tomato. She also told me to use curly parsley not flat-leaf for a better texture, which is great because that's what so many people have growing in their garden. Serves 6–8

3 tightly packed cups (about 3 bunches) parsley leaves, chopped  
1/2 cup mint leaves, chopped  
3 medium green onions (shallots/spring onions), white and light green parts sliced  
3 large red ripe roma (plum) tomatoes, chopped  
2 tbsp burghul  
1 large Lebanese cucumber, quartered lengthwise then finely sliced  
Juice 1 lemon  
2 tbsp olive oil

Place the chopped parsley, mint and green onions in a large bowl and spread the chopped tomatoes over the top in a thickish layer. Sprinkle over the burghul. Top with the finely chopped the cucumber. Drizzle over the lemon juice and oil. Cover and chill until ready to serve, then toss to mix all the ingredients together.

*Per serving (analysis based on serving 8)*

Energy: 292kJ/ 70 cal; Protein 1. g; Fat 5 g; Carbs 4g Fibre 3g

## **Busting Food Myths with Nicole Senior**

***Myth:* Gluten-free foods are better for you.**

***Fact:* Only people with celiac disease and gluten intolerance are better off eating gluten-free foods – and some gluten-free foods aren't so healthy.**

The range of gluten-free food products has exploded in recent years and now widely available in supermarkets. While this is great news for sufferers of coeliac disease and gluten intolerance, the numbers just don't add up. Since coeliac disease affects only 1% of the population, either there has been an explosion of gluten intolerance or there are lots of people buying these products who don't have a diagnosable problem with gluten. It appears that 'gluten-free' has become the latest health fad.

Where does this idea come from that gluten is somehow bad for us? Dietitians commonly

point the finger at naturopaths and other alternative health practitioners who recommend exclusion of wheat and gluten almost as a matter of course. Then the word-of-mouth message starts to spread. A growing number of consumers believe gluten-free foods are healthier and start to buy gluten-free foods by choice. More products become available to meet demand, the diet becomes easier to follow, more people buy them because they're there, and the trend takes hold.

It doesn't make sense that wheat (the most common source of gluten in the diet) would be somehow harmful. Wheat has been cultivated since 9000BC, is grown worldwide, and is the world's third largest produced grain crop used to make a huge range of staple foods including leavened bread, flat breads, pasta and noodles.

Imagine not being able to eat regular bread, pasta, breakfast cereal, biscuits, crisp bread, cakes, thickened sauces and even beer? Wheat and other gluten-containing grains are almost ubiquitous in our Western-style food culture. The gluten-free diet has a high degree of difficulty, so why would you follow it unless you absolutely had to? In addition, a study published in the ***British Journal of Nutrition*** ([http://www.ncbi.nlm.nih.gov/pubmed/19445821?itool=EntrezSystem2.PEntrez.Pubmed.Pubmed\\_ResultsPanel.Pubmed\\_RVDocSum&ordinalpos=7](http://www.ncbi.nlm.nih.gov/pubmed/19445821?itool=EntrezSystem2.PEntrez.Pubmed.Pubmed_ResultsPanel.Pubmed_RVDocSum&ordinalpos=7)) has shown reduced numbers of friendly gut bacteria and reduced immune function in people following a gluten-free diet.

However the real issue is the gluten-free products themselves. Many are highly processed and based on high GI ingredients such as rice and potato and some have lots of added saturated fat and sugar to enhance palatability, especially in the sweet biscuit, bar and cake category. Few products are based on wholegrain versions of gluten-free grains, even though they are healthier.

For those of you with symptoms of coeliac disease such as abdominal pain, diarrhoea, lethargy and iron deficiency, don't self diagnose and put yourself on a gluten free diet. See your doctor first for a definitive diagnosis through blood test and intestinal biopsy (following a gluten free diet before diagnosis of coeliac disease can actually prevent a correct diagnosis being made).

If your symptoms are not due to coeliac disease, but you suspect food is somehow the cause, see a registered dietitian (an APD in Australia) with experience in food intolerance to identify the real dietary culprits and create a personalised diet for you to manage your symptoms.

If you'd like quality information on heart health and great recipes check out Nicole's website (<http://www.eattobeatcholesterol.com.au/>).

## Body Work with Glenn Cardwell

**‘When should I exercise? I have read that you will burn more fat if you exercise before breakfast.’**

‘The biggest factor for burning body fat is whether you do the activity in the first place. It may be interesting to speculate whether you burn more fat in certain circumstances, but the best I can give you is a general guide.

1. To burn fat you have to be active in the first place.
2. The fitter you are the better your body is at burning fat. To get to a reasonable level of fitness, you need to move your body 3–5 times a week.
3. It doesn’t matter if you walk or jog. You will burn more fat jogging for 30 minutes than walking for 30 minutes. On the other hand, you will burn more fat by walking for 60 minutes than jogging for 30 minutes.
4. The amount of incidental activity during the day will potentially burn more fat than a jog. Getting up from your chair, having a stretch, taking a quick walk around the office, using the stairs etc will probably burn more body fat during the day. So don’t do 30 minutes of exercise then tick the exercise box and plonk your bum on a chair for the rest of the day.
5. Notice how fidgeters tend to be leaner? One study showed that fidgeters burned an extra 40–60 Cals (165–250 kJs) an hour. Regularly have a wriggle in your chair or a fidget while you stand.
6. Weight bearing exercise like walking, aerobics and jogging are better at burning up fat stores than weight supported exercise like swimming or cycling. However it’s better to do something you enjoy than analyse its fat burning potential. Refer back to point 1.’

## GI Symbol News with Dr Alan Barclay

### Finding healthy low GI breakfast cereals

Despite all the noise about sugar there’s more to making healthy choices in the breakfast aisle than going for the one with the least amount of sugar on the nutrition info panel.

Good choices will:

- Be high in fibre (from wholegrains or dried fruit)
- Be low in added salt (sodium)
- Contain only good fats (e.g. from nuts, seeds and grains ), and
- Be low GI.

**Carbs:** The carbs in breakfast cereals come from both its sugar and starch. The nutrition info panel tells you how much there is in a typical serving but doesn't tell you anything about the type or nutritional value of either of them. (Note: If you want to work out the amount of starch in a food, it's the grams of total carbohydrate minus the grams of sugar.)

It's important to remember that not all sugars are the same at all. The sugars found in Australian ready-to-eat breakfast cereals are typically sucrose or table sugar (GI 65) which is refined and usually added to the product, and fructose (GI 19) and lactose (GI 46) which come naturally with the dried fruit or yoghurt in the product and are a nutritious source of dietary fibre (dried fruit), and/or vitamins and minerals (dried fruit and yoghurt).

Not all starches (or 'complex carbohydrate') are the same either. First of all, there are two types of starch in food – amylose is harder to digest than amylopectin and the ratio of one to the other has a powerful effect on a food's GI. Prof Jennie Brand-Miller explains how that works (<http://ginews.blogspot.com/2006/12/food-for-thought.html>).

Secondly, less processed grains like steel cut oats or traditional rolled oats are much harder to digest than finely milled re-constituted grains like bran flakes (See Prof Jennie's comments in GI Update, below). Unfortunately, it is not possible to tell how refined the starch is by reading the food label – even the latest buzz word 'wholegrain' does not tell you the full story. So while a 'wholegrain' breakfast cereal is a good overall choice (it is higher in fibre, vitamins and minerals), its wholegrain content does not provide you with any real indication of how it will affect your blood glucose.

**Fat:** Many cereals from corn flakes to porridge oats naturally contain relatively small amounts of fat. However, it's increasingly popular to add tasty and nutritious nuts and seeds to cereals boosting the amount of fibre and vitamins and minerals. Keep in mind that they are high in total fat, so can add significantly to the products overall calorie content. However, the fat is predominantly mono- and poly-unsaturated, so it will not adversely affect blood cholesterol levels. Be aware that some mueslis are toasted in added oil or fat, often a highly saturated fat like palm oil. Traditional (untoasted) mueslis are better choices.

**Salt:** Because most cereals are relatively bland, it is common for food manufacturers to add salt to enhance their flavour – even if they have already added sugar (a little salt enhances sweetness believe it or not). Excessive salt intakes are associated with higher blood pressure, amongst other things, so salt-reduced or no-added salt are the ones to look for if available.

**Tips for making good choices:** Use our GI Symbol nutrient criteria for breakfast cereals to help you make a healthy choice an easy choice:

- Fat: 5g per 100 g or less, or 5–10g per 100g, provided that saturated fat is not more than 20% of the total fat content (or up to 15g per 100g if the source of saturated fat is grains, seeds or nuts but not coconut)
- Salt: (sodium) 400mg per 100g or less
- Dietary fibre: 3g per 100g or more

Breakfast cereals that carry the GI Symbol in Australia and New Zealand:

- Morning Sun Natural Style Muesli – Fruit Free Nuts and Seeds GI 55
- Morning Sun Natural Style Muesli – Apricot & Almond GI 49
- Morning Sun Natural Style Muesli – Peach & Pecan GI 49
- Naytura Fruit and Nut Muesli GI 48
- Woolworths Select Traditional Rolled Oats GI 57

**Beware!** Some manufacturers claim on their packs that their breakfast cereal is low GI when consumed with milk. The cut-off for low GI foods (55 or less) is for individual foods (i.e. the cereal itself), not mixed meals (i.e. cereal and milk). The cut-off for mixed meals and diets is 45 or less (<http://ginews.blogspot.com/2009/03/news-briefs.html>).



**For more information about the GI Symbol Program**

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## GI Update

### GI Q&A with Prof Jennie Brand-Miller

#### **'I am curious why high-fibre cereals like Bran Flakes that look so healthy, and everyone assumes are healthy, actually have a high GI?'**

Bran Flakes and Raisin Bran are fibre-rich breakfast cereals designed to keep you 'healthy on the inside' as they say. But they are high GI and digested in a flash because the production process makes the starch very accessible. It's the same with most ready-to-eat breakfast cereals you'll find in the supermarket

Why do these cereals have high GI values? Grinding, milling, flaking, popping and puffing grains radically changes 'nature's architecture' and makes it easier for water to be absorbed and digestive enzymes to attack the food. This is why many foods (including bread) made from fine flours tend to have a high GI value. The larger the particle size, the lower the GI value.

One of the most significant alterations to our food supply came with the introduction, in the mid-19th century, of steel-roller mills. Not only did they make it easier to remove the fibre from cereal grains, but also the particle size of the flour became smaller than ever before. Prior to the 19th century, stone grinding produced quite coarse flours that resulted in slower rates of digestion and absorption.

When starch is consumed in 'nature's packaging' – whole intact grains that have been softened just by soaking and cooking – the food will often have a low GI. For example, cooked pearl barley's GI value is 25. But not ALWAYS. For example, some barleys have more naturally-occurring viscous beta-glucans (a form of fibre) that creates greater viscosity in the small intestine and physically slows down the digestive processes. It's hard to know which varieties of barley are low GI unless they have been previously tested. 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.

#### **Prof Barry Popkin on the evolution of cornflakes**

'Dr John Harvey Kellogg (1852–1943) was a Seventh-day Adventist who opened a well-known hospital called the Battle Creek Sanitarium. Actually, it was more like a health

resort than a hospital. At Battle Creek, for example, Kellogg taught about food preparation, had his clients engage in breathing exercises and marching to promote digestion, and he gave his guests daily enemas and had them consume yogurt afterward ... John Kellogg's first great discovery was cornflakes, the result of experimentation in the 1890s. The sanitarium kitchen's cooked wheat was exposed to air for a day or more. Then, when running it through rollers, separate flakes were discharged and cereal flakes were born. The breakfast staple became an instant hit at the sanitarium and beyond, as guests would write after their visits to request supplies of their food.

Somewhere along the line this dream changed. The realities of selling cereal globally transformed Kellogg's into a company that produced a large array of products with refined carbohydrates, added sugars and fats. The original cereals were made only with whole wheat and contained a small number of calories and plenty of fibre. But that was then – at less than 100 calories per serving – and this, at 120–400 calories per serving, is now. The virtuous company that made truly healthy products is a dim memory. Even so, Kellogg's Post, and other ready-to-eat cereals are a lot healthier than most breakfast alternatives such as bacon, sausages and fried eggs.'

– *The World is Fat*

#### **And a tip from Michael Pollan ...**

'Don't eat breakfast cereals that change the color of the milk.'

– *Food Rules, An eater's manual*

#### **New GI values from North America: low GI juice beverages**

Sweetened with organic blue agave nectar, the new Lo-Gly juice beverages provide 140 calories (588 kJ) per 1 cup (8 fl oz/240ml) serving. Each flavour is certified kosher and the beverages were GI tested in North America at Glycemic Index Laboratories in Toronto. They are available in the US and Canada.

- Pomegranate (contains 49% juice) – GI 28 (total carbs per 1 cup/240ml serve: 35 g)
- Acai-Blue (contains 57% juice) – GI 31 (total carbs per 1 cup/240ml serve: 34g)
- Pomegranate Mojito (contains 51% juice) – GI 24 (total carbs per 1 cup/240ml serve: 35g)
- Mango Mojito (contains 56% juice) – GI 32 (total carbs per 1 cup/240ml serve: 31g)

For more information contact Lo-Gly marketing manager Don Necochea: [don@Lo-Gly.com](mailto:don@Lo-Gly.com)

#### **New GI values from Fiona Atkinson: Bakers Delight Chia Bread and Rolls**

Bakers Delight have combined with The Chia Company to bring two new moderate GI bread products packed with nutritious chia seeds to the market in Australia and New Zealand.

- Chia White Block Loaf GI 63 – 1 slice has 17g available carbohydrate
- Chia White Round Roll GI 63– 1 roll has 31g available carbohydrate

You might like to know that **all** the volunteers commented that they liked the bread. That is a bit of an unusual/unexpected response because usually they aren't that keen to eat 3 or 4 slices of plain bread, but they did mention it was nice.

Dietitian Catherine Saxelby looked at chia seeds in *GI News* back in August 2009 and reported that: 'Like all seeds, chia seeds are high in fat especially the good fats. At around 30% fat, they're lower than sesame seeds (50%) or nuts but make up for this with an extraordinarily high level of omega-3 – unusual in the plant world. They have 18% ALA which is around the same as flaxseeds (linseeds) at 22%, making they are one of the richest sources of the plant form of omega-3 called ALA. They are also big on fibre. In fact, at 37% they are an outstanding source of fibre, in particular soluble fibre. And they contain 15% protein – as much as from wheat – plus a variety of vitamins, minerals and trace elements including folate, phosphorus, iron, manganese, copper and potassium. Like almonds and sesame seeds, they have a surprisingly high content of calcium, usually found in dairy foods, but how well this is absorbed is debatable.'