# GI News—May 2011


- Jennie Brand-Miller on why gestational diabetes numbers are doubling
- Child obesity – from the get-go, it's Mum and Dad who can make a difference
- The Australian paradox: sugar consumption down while overweight and obesity increase
- Nicole Senior debunks the 'people with diabetes shouldn't eat sugar' myth
- Emma Stirling on why lollies and candy are OK for treats (as part of a healthy diet)
- Would an insulin index of foods be more useful than GI values?
- 4 delicious recipes for Mother's Day – low GI potato salad with lemon yoghurt dressing, pasta shells with pinto beans, gluten-free mandarin almond cake and Antony Worrall Thompson's aromatic tomato tart

As the second Sunday in May is Mother's Day in many countries around the world, we thought we would feature stories that highlight why Mum's diet really matters right from the get-go. Prof Jennie Brand-Miller reports on new guidelines for diagnosing gestational diabetes and what the benefits will be for Mums and babies; scientists from the UK, NZ and Singapore reveal a new link between a mother's pregnancy diet and her offspring's chances of obesity; and the findings of the 2-year HIKCUPS study shows that the best way to help overweight and obese kids is to target Mum and Dad and give them good quality advice and support to improve the whole family's food habits.

Good eating, good health and good reading.

**Editor**: Philippa Sandall
**Web management and design**: Alan Barclay, PhD

## Food for Thought

**Jennie Brand-Miller on why gestational diabetes numbers will double**
'Apart from re-living 'The Sound of Music' at the 6th International Symposium on Diabetes in Pregnancy meeting in warm and sunny Salzburg, I learned that the findings of the HAPO Study (Hyperglycemia and Pregnancy Outcomes Study; www.ncbi.nlm.nih.gov/pubmed/19011170) are changing the way the world diagnoses

gestational diabetes (GDM, or diabetes first recognised during pregnancy). One of the following is now sufficient:

- Fasting glucose: above 5.1 mmol/L
- 1 hour post 75 gram of glucose: above 10 mmol/L
- 2 hour post 75 gram of glucose above 8.5 mmol/L

These new guidelines have been accepted by many developed nations and are now in the process of being officially adopted. Using these guidelines will automatically mean that the rate of GDM will increase dramatically. For example, in Australia, this means that about 16% of pregnant women (up from around 8%) will now have a diagnosis of GDM, that's 1 for every 6 pregnant women. In some ethnic groups, such as South Asian or Chinese women, it will mean 25–30% of women (1 in 3 or 4).

***Why have they moved the goal posts?*** Well, HAPO was one of the biggest studies every done in pregnant women (over 25,000 women from 15 centres in 9 countries). They enrolled only healthy women, specifically excluding those already diagnosed with gestational diabetes according to the old guidelines. The aim was to see if women whose blood glucose levels were 'intermediate', that is, high but not so high as to be classed as GDM, were also at risk of having adverse outcomes (e.g. having an emergency caesarean section).

What they found surprised many. There was a very strong link between higher glucose levels and the rate of caesarean section (planned or unplanned), the rate of shoulder dystocia (where the baby's shoulder is too large for the birth canal) and the chance of having a very large baby, with a weight higher than the 90th percentile. In other words, these women with intermediate BGLs were in need of just as much care as women with diagnosed diabetes, yet as no one thought there was a problem, they were not receiving it.

Another reason why the findings of HAPO were so important relates to what's called 'metabolic programming' and the current epidemic of child obesity. In Australia, like other nations, birth weights have been steadily increasing, and 1 in 5 children is now classified as overweight or obese by only 2–3 years of age. We already know that birth weight correlates with the mother's BGLs. So, the best way to reduce birth weight, and therefore the likely risk of an overweight child, is to focus on the mother's BGLs. Ongoing research will determine whether a low GI diet in pregnancy reduces the risk of having GDM or an overweight baby. Stay tuned ...'

## News Briefs

### New link between mother's pregnancy diet and offspring's chances of obesity

An international study published in *Diabetes* (http://diabetes.diabetesjournals.org/content/early/2011/04/04/db10-0979.abstract) has shown for the first time that a mother's diet during pregnancy can alter the function of her child's DNA through a process called epigenetic change – effectively turning on a fat switch and leading to her child laying down more fat as it grows older. Researchers measured epigenetic changes in nearly 300 children at birth and showed that these strongly predicted the degree of obesity at six or nine years of age. This effect acts independently of how fat or thin the mother is and of the child's weight at birth. While it is not yet clear exactly which foods have the greatest influence on the DNA of unborn babies, the study did find an association between lower carbohydrate intakes and the methylation of the gene. However, is it unknown whether the amount of carbohydrate the women ate was within a healthy range. Further research is needed to explore which food groups, if any, are associated with epigenetic changes.

'We have shown for the first time that susceptibility to obesity cannot simply be attributed to the combination of our genes and our lifestyle, but can be triggered by influences on a baby's development in the womb, including what the mother ate, says lead author Prof. Keith Godfrey from the University of Southampton. 'This study indicates that measures to prevent childhood obesity should be targeted on improving a mother's nutrition and her baby's development in the womb.'

Co-author Prof. Mark Hanson explains: 'This study ... strengthens the case for all women of reproductive age having greater access to nutritional, education and lifestyle support to improve the health of the next generation, and to reduce the risk of the conditions such as diabetes and heart disease which often follow obesity.'

### Child obesity – it's Mum and Dad who make a difference

Health programs to help overweight and obese kids commonly target the children themselves. The two-year follow-up findings for the HIKCUPS study published in *Pediatrics* (www.ncbi.nlm.nih.gov/pubmed/21444600) show that the most effective treatment for young children is to give parents good quality advice and support to improve their family's food habits. 'You can achieve better results simply by targeting

parents alone, even without the child's involvement,' says Prof Clare Collins, from the University of Newcastle.

In the randomised controlled trial, 165 overweight young children (aged 5–9) were allocated either to a parent-centered nutrition/lifestyle program, or a child-centered physical activity/skill program, or to both. The good news is that all the children became slimmer for their age (i.e. they gained less than half the weight for their age had they not been in the program). 'The greatest effects were achieved through inclusion of a parent-centered diet program, indicating the importance of targeting parents within treatment and the possibility of targeting them exclusively in treating obese pre-pubertal children,' conclude the authors.

'We are not advocating stopping the great health programs currently targeting children, as educating our kids on healthy lifestyles is critically important,' says co-author Assoc Prof Tony Okely. But 'our results indicate that by targeting the parents predominately, we can make a huge difference to this global epidemic.'

**Saturated fat, heart disease and why it might be OK to say 'cheese please'**

Most dietary guidelines around the world tell us we have to reduce our intake of saturated fat to reduce our risk of heart disease, but they don't tell us what to put in its place. In Western diets, it's generally replaced with carbohydrates – and often refined ones. But say Prof Arne Astrup and a panel of world experts in the *American Journal of Clinical Nutrition* 'the evidence is consistent in finding that the risk of coronary heart disease (CHD) is reduced when SFAs are replaced with polyunsaturated fatty acids (PUFAs)' while 'no clear benefit of substituting carbohydrates for SFAs has been shown, although there might be a benefit if the carbohydrate is unrefined and has a low glycemic index.'

They go on to say that while it's more useful to give people dietary advice based on specific foods (e.g. cheese or red meat) rather than nutrients (e.g. protein, carbohydrate or fat) the evidence is limited. For example although there's strong evidence that diets high in processed meats are linked to an increased risk of heart disease, there's no consistent evidence that a high intake of dairy products is too. They write: 'There is increasing evidence to support that the total matrix of a food is more important than just its fatty acid content when predicting the effect of a food on CHD risk, e.g., the effect of SFAs from cheese on blood lipids and CHD may be counterbalanced by the content of protein, calcium, or other components in cheese.' You can read the whole report online at www.ncbi.nlm.nih.gov/pubmed/21270379.

**New Nutrisystem edition: The Low GI Cookbook**

Nutrisystem provides home-delivered, low GI weight loss programs throughout North America. In case you don't know about it (and we didn't), the idea is to help make getting started on a healthy weight loss effort as easy as possible, by providing portion-controlled entrees (main meals for those outside the USA) and snacks in customised monthly shipments, along with a meal planner and other tools and support. 'However, many customers worry about being able to manage their weight once they stop the program,' says Karen Curtis, registered dietitian with the Nutrisystem R&D team. 'They need to learn how to prepare low GI foods and practise portion control for themselves'. To help them navigate the transition, we partnered with Low GI Diet Cookbook authors Prof Jennie Brand-Miller, Kaye Foster-Powell and Dr Joanna McMillan to adapt their book for the program. The Low GI Cookbook helps you understand why the program works and shows you how to sustain your weight loss by continuing to eat the low GI way.'

- Take a sneak peek at some recipes at www.nutrisystem.com/jsps_lil/recipes/index.jsp
- Checkout the Nutrisystem eStore to buy a copy at www.nutrisystem.com/jsps_hmr/customization/alacarte.jsp?categoryId=53

## Get the Scoop with Emma Stirling

**The scoop on sweet treats**

Feel strongly that anyone watching their weight or who has diabetes, should cut out sweet treats altogether? Well, it's time to shake up your views and check out the smart approach to treat time.

You can enjoy any food as long as you consider how much and how often you eat it. If you need to keep an eye on your BGLs, chocolate generally has a low GI due to its high fat content but most other candies and lollies have a moderate or high GI and they pack in a fair few carbs too. For example if you down a 30g (1oz) pack of jelly beans (GI78) at a sitting, you have downed 28g carbs (e.g. the equivalent of 2 slices of bread). Timing matters, too. Enjoying your small candy treat after a low GI meal will not cause the same rise in your BGLs compared with tucking in on an empty tummy mid-afternoon at the movies.

If you have a sweet tooth, deprivation just sets you up for constant temptation. In

fact research indicates that depriving yourself of choccy or candy may set you up for stronger cravings and challenge your resolve to stay on track. A study published in *Nutrition Research* (www.nrjournal.com/article/S0271-5317%2811%2900015-7/abstract) on chocolate and candy eaters, provides evidence that sweet treats can fit into a balanced eating pattern. When compared to non-candy eaters, people who ate sweet treats tended to weigh less, have lower BMI and waist circumferences, and have decreased levels of risk factors for heart disease and metabolic syndrome. However, cautions lead researcher Carol O'Neil, it is still all things in moderation. 'We certainly don't want these results positioned as eating candy helps you to lose weight,' she said. 'This study adds to the evidence base that supports candy's role as an occasional treat within a healthy lifestyle.'

**Keep treats on neutral ground** 'Oh my poor darling, let me get a plaster for your grazed knee and give you a little candy to cheer you up.' Sound familiar? The problem of using food to reward or comfort anyone, especially children, is that it can create very unhelpful food habits that can last a lifetime and set up future patterns of emotional eating. Treats have to be treated as an enjoyable part of regular eating (a healthy diet of course), with no emotional strings attached.

**Tips to for keeping candy treats moderate and occasional**

- **Portion control** – go for single-serve, individually wrapped treats. You can prolong the pleasure by serving your treat in solitary splendour on a mini platter surrounded with fresh fruit like strawberries or blueberries.
- **Out of sight, out of mind** – keep a treat box (make sure it is an opaque container), high on the pantry shelf.
- **Establish a frequency framework** – perhaps one a day after dinner from the (opaque) treat box. And let kids choose their treat. It gives them a sense of empowerment.

And don't forget to clean those teeth.

**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 for hot news bites.

## In the GI News Kitchen

**New Idea's low GI potato salad with lemon yoghurt dressing**
You can whip up this tasty low GI potato (www.carismapotatoes.com.au) salad that was featured in Catherine Saxelby's weekly column in 20 minutes. Perfect for summer salads or a buffet or barbecue. Serves 6

1kg (2lb 4oz) Carisma potatoes, washed
2 small zucchini (courgettes), thinly sliced
¼ cup chopped fresh parsley
¼ cup chopped fresh mint
¼ cup chopped fresh chives
Fresh mint, to garnish

*Lemon yoghurt dressing*
1 cup low fat natural yoghurt
¼ cup low fat mayonnaise
1 tsp finely grated lemon rind
1 tbs (20ml) lemon juice
Ground white pepper, to taste

**Make** the lemon yoghurt dressing by combining all the dressing ingredients in a medium jug.
**Cut** the washed potatoes into quarters. Place in a saucepan of hot water. Bring to the boil. Cook, uncovered, for 4–5 minutes, or until just done. Potatoes should be slightly firm in the centre. Be careful not to over-cook. Drain well.
**Place** the warm potatoes in a large bowl with the zucchini, parsley, mint, chives and half the dressing and toss to combine. Refrigerate, covered, until cold.
**Drizzle** remaining dressing over salad just before serving. Garnish with fresh mint.

*Per serving*
Energy 660 kJ/ 160 cals; Protein 7 g; Fat 0.6 g (includes 0.2 g saturated fat and less than 4 mg cholesterol); Available carbohydrate 23 g; Fibre 4 g
– Reproduced courtesy *New Idea* magazine (http://au.lifestyle.yahoo.com/new-idea), Photo: Andrew Young; styling: Carolyn Fienberg.

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 at www.eatgoodcarbs.com. The

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

**Shells with pinto beans and feta**

This is a basic recipe that changes with the whim of the cook, limited only by imagination and culinary curiosity. Italian cooks are naturally drawn to add in seasonal produce (spinach, cauliflower, green beans, etc.) or possibly something leftover in the fridge (peperonata, canned plum tomatoes, grilled eggplant, chicken breasts, etc.) Go for it! Servings: 5 (1 cup each)

180g (6oz) uncooked medium shells
1 tbs (15ml) extra virgin olive oil
3 large garlic cloves, minced
1 large bunch scallions (4 oz.), washed, horizontally sliced
440g (15oz) can pinto beans, rinsed and drained
1 cup stock (chicken, beef or vegetable)
2–3 tbs (30–45ml) red wine vinegar
¼ tsp salt or to taste
1/8 tsp pepper or to taste
120g (4oz) feta cheese or other cheese of choice

**Cook** shells according to package directions. Do not overcook. Drain and set aside. **Sauté** garlic in oil for 1 minute in a medium-sized, non-stick pan then add the scallions and continue cooking for another 2 minutes. Add in the beans, broth, vinegar, salt and pepper. Mix thoroughly. Cook with medium heat for 5 minutes, stirring frequently. Reduce heat to simmer, add in pasta and mix thoroughly. Heat through for 1 minute. Crumble cheese on top of the pasta and serve directly from the pan.

*Per serving (1 cup)*
Energy: 1188kJ/ 283cals; Protein 14g; Fat 7g (includes 3g saturated fat and 12mg cholesterol); Available carbohydrate 39g; Fibre 5g

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 at www.moneysavingmeals.com.au.

**Gluten-free mandarin almond cake**

Inspired by Claudia Roden's Orange & Almond Cake, I created this moist, dense cake using ground almonds, a can of chickpeas and mandarins as they are just coming into season. I can't say it is low GI as it hasn't been tested. But it does contain low GI ingredients like chickpeas and mandarins and will make a perfect dessert for that special Mother's Day dinner when the family is gathered served as is or with a dollop of Greek yoghurt. It keeps for about 2 days in a sealed container. Not suitable for freezing. Makes 12 slices.

4 mandarins (about 70g/2½oz each), washed
1½ cups slivered almonds (or 180g/6oz ground almonds)
400g (14oz) can chickpeas, rinsed and drained
4 eggs
1¼ cups caster sugar
1 tsp gluten-free baking powder
½ tsp vanilla extract

**Preheat** the oven to 170°C. Grease and line the base of an 18cm (7in) round cake pan (base measurement).
**Place** the mandarins in a microwave-safe baking dish and cover. Microwave the mandarins for 3–3½ minutes until soft. When cool enough to handle, break each into a few pieces, remove any seeds and stems. Don't peel.
**Process** the almonds until ground in a food processor. Remove. Process the chickpeas until chopped and crumbly. Add mandarins (skin and all) and process until pureed.
**Whisk t**he eggs and sugar together in a large bowl. Add the mandarin puree, ground almonds, baking powder and vanilla and stir to combine well (it is a runny mixture). Taste for sweetness and add an extra tablespoon of sugar if need be.
**Pour** the cake batter into the cake pan. Bake for 60–65 minutes or until top is firm and a skewer into the centre comes out clean. Remove cake from the oven and leave in pan for 10 minutes, then turn out onto a wire rack. Turn the right way up and leave to cool.

*Per serve (based on 12 slices)*
Energy: 1040 kJ/ 250 cals; Protein 7 g; Fat 11.5 g (includes 1.5 g saturated fat and 63 mg cholesterol); Available carbs 29 g; Fibre 3.5 g

**Antony Worrall Thompson's aromatic tomato tart**

This exquisite tart reproduced here with permission from *Antony Worrall Thompson's GI Diet* (which has sold over half a million copies) is very simple to prepare and can be eaten either alone or as part of a main course. Serves 4

4 sheets filo pastry
2 tbs (30ml) olive oil
½ tsp ground coriander
½ tsp fennel seeds
3 spring onions, sliced
1 tsp cumin seeds
2 garlic cloves, sliced
¼ tsp chilli powder
6 large ripe tomatoes, each cut into 4 thick slices

**Preheat** the oven and a non-stick baking tray to 220°C/425°F/gas mark 7.
**Lightly brush** the sheets of filo pastry with a little of the olive oil and fold them in half. Stack them one on top of the other on another non-stick baking tray.
**Warm** the rest of the oil in a frying pan over a medium heat. Add the ground coriander, fennel seeds, spring onions, cumin seeds and garlic, and stir-fry until the spices start releasing their fragrant bouquet. Add the chilli powder and the tomatoes (you will need to do this in two batches), and cook for 1–2 minutes, being careful not to break up the tomato slices. Set aside any cooking juices.
**Arrange** the tomatoes on the pastry, leaving a 5mm (1/4in) edge to the pastry. Set the baking tray on top of the hot tray in the oven and cook for 15–20 minutes, until the pastry is crisp and golden. **Drizzle** any tomato spice juices over the tart and serve.

*Per serving*
Energy: 460kJ/110cals; Fat 8g (includes 1.6g saturated fat); Available carbs 9g

**Anthony Worrall Thompson** has such an irresistible way with vegetables and salads you'll find it easy to boost your serves of veggies a day to at least five a day (if not more) cooking from this book. In addition, he has included a generous serving of recipes that make the most of legumes and barley – a real plus. If you invest in a copy, be aware that the potato, pizza, bread and rice pudding recipes are likely to be moderate or even high GI and that a number of recipes are low carb so you may need

to top up your tank with your favourite low GI fuel. The *GI Diet* is available from good bookshops and online.

## Busting Food Myths with Nicole Senior

**Myth:** ***People with diabetes shouldn't eat sugar***

**Fact:** ***People with diabetes can enjoy sugar in moderation as part of a healthy diet.***

Do you believe that all chocolate and candy or lollies cause a rapid spike and then crash in blood glucose levels? You're not alone. If you ask anyone walking down the street what they think a diet for people with diabetes should include, chances are the first thing they'll say is 'no sugar'. It's one of the most pervasive and persistent myths about diet and health ever, I reckon. Yet it is a myth.

The downfall of the 'no sugar' dietary dogma started with the advent of the glycemic index (GI). The GI was the first means by which we could actually measure the effect of different foods on our blood glucose levels and it turned the nutrition world upside down. Before the GI we separated carbs into starches and sugars, and recommended 'complex' starchy foods over 'simple' sugary foods in the mistaken belief they would not raise your BGLs to the same degree. We were wrong. Measuring the GI of a variety of starchy and sugar foods turned the old advice on its head. We discovered most bread, potatoes and rice had a high GI, whereas table sugar and most honey had a moderate GI. Even more shocking was that sweet tasting foods such as (most) fruits, flavoured yoghurt and ice cream had a low GI! The shockwaves of this scientific development are still being felt. Even the terminology has changed. Using 'complex and simple carbohydrates' to describe speed of digestion is now defunct because we know many starches are very fast to digest and many sugars are slow.

The anti-sugar message has also soiled the reputation of all carbohydrates, promoting the use of low-carb diets. Besides the obvious nutritional problems of cutting out grains, fruits, dairy and starchy vegetables, new research suggests a 'spoonful of sugar' may actually be beneficial for the regeneration of insulin producing beta cells in the pancreas. A mouse study published in *Cell Metabolism* (www.cell.com/cell-metabolism/abstract/S1550-4131%2811%2900085-4) found the availability of glucose (from the digestion of carbohydrates) increased the speed at which these vital cells reproduce themselves, and may offer hope for people with diabetes whose beta cells have been destroyed or are in decline.

However, this doesn't give a green light to people with diabetes to stuff themselves with sweets, but it does discredit the sugar veto. Today, the advice for people with diabetes is the same as for the general population: consume moderate amounts of sugars and foods containing added sugars. The caveat if you have diabetes being to spread your carbs evenly through the day, balance carb intake with medication and choose low GI carbs where possible. Sugar is NOT OK when eaten in large quantities and in less nutritious foods such as confectionery and soft drinks. But some sugar is OK when eaten in moderate amounts within healthy foods. For example, in low fat fruit yoghurt, custard or ice cream, or wholegrain or high fibre breakfast cereal – even a small piece of fruit cake or oat biscuit. There is no need to especially restrict the natural sugars found in fruit and dairy foods. There's more to a diet for diabetes than the sugar content of foods and a little sugar might help make healthy foods more enjoyable and life a little sweeter.

For great recipes moderate in sugar and also good for your heart, check out Nicole's books at www.eattobeatcholesterol.com.au.

## GI Symbol News with Dr Alan Barclay

**Eat foods, not nutrients**

In his NYT piece *Unhappy Meals* (www.nytimes.com/2007/01/28/magazine/28nutritionism.t.html) Michael Pollan documents the 'shift from eating food to eating nutrients' and argues that relying solely on information regarding individual nutrients has led people and policy makers to repeatedly make poor decisions relating to food and nutrition over the last forty years.

The 'low fat' story is a good example of this nutritionism at work. Research from the 1960s and 1970s linking high fat (especially saturated fat) diets with cardiovascular disease, led to widespread government health recommendations to cut back on fat intakes – a mantra quickly enshrined in dietary guidelines the world over to beat heart disease and the battle of the bulge. The food industry responded by developing a vast array of reduced and low fat alternatives (often substituting refined carbohydrates for the fat). People responded too, cutting back on full fat products and tucking into the 'diet' and 'lite' alternatives with gusto. And although heart health statistics improved, the scales told a different story. People just kept on getting fatter. Why? Well as Arne Astrup points out in *Saturated fat and heart disease – the latest evidence* in this issue, what you replace fat with really does matter.

The huge success of *Dr Atkins' New Diet Revolution* with his message that excessive carbohydrate consumption (not fats saturated or otherwise) was the bad guy behind the US obesity epidemic shone the spotlight back on carbohydrates in general. Post Atkins Revolution, one carbohydrate in particular – fructose - has been singled out as the cause of the US obesity epidemic, especially in the form of high fructose corn syrups used in increasing amounts by the US food industry from the late 1970s. The parallel increase in rates of overweight and obesity with the increasing use of HFCS has led some researchers to believe that fructose is in fact a major cause of the obesity epidemic. Yet rates of overweight and obesity have increased around the globe, even in countries like Australia (we are right up there in the fattest nations league) where high fructose corn syrups are not generally used.

At the University of Sydney's Human Nutrition Unit, we decided to explore further the links between increased consumption of sugars (including fructose) and the global obesity epidemic. In our paper published in April in *Nutrients* (www.mdpi.com/2072-6643/3/4/491) we investigate trends in sugars consumption in Australia, UK and the US between 1980–2003 to see whether it was likely that increased consumption was the cause of the obesity epidemic in these nations.

In Australia, the UK and US, per capita consumption of refined sucrose (table sugar) decreased by 23%, 10% and 20% respectively from 1980–2003. However, when all sources of nutritive sweeteners, including HFCS, were considered, per capita consumption decreased in Australia (16%) and the UK (5%), but increased in the US (23%). During this period, the prevalence of obesity has increased three-fold in Australians and at least doubled in the UK. So while excessive consumption of fructose in the form of HFCS may be a contributing factor to the US obesity epidemic, it seems unlikely that it is a major cause elsewhere.

It appears that in Australia at least, people took the message to eat less sugar very seriously. Australians are very good at adopting public health messages with one of the lowest rates of cigarette smoking in the world due to decades of the Quit campaign, and the Slip, Slop, Slap campaign to reduce sun exposure has been so successful that rates of vitamin D deficiency are skyrocketing.

Maybe the real problem is focusing on individual nutrients in foods to find a key culprit to blame for of the obesity epidemic. And while we obsessively count the grams of fat or sugar we consume, we inadvertently consume more food and drink

overall. Also, we often overlook the fact that most of us are less physically active than we were a few decades ago.

Of course, foods and traditional diets are far more than just nutrients. Food is one of life's great pleasures to be enjoyed with family and friends. For each of us it is part of our cultural heritage and for many integral to religious beliefs. By encouraging people to enjoy whole foods and beneficial dietary patterns, which includes both what was eaten and how mealtimes were enjoyed (such as the traditional Mediterranean diet), rather than blaming specific nutrients, we may be able to truly deal with the current obesity epidemic without totally destroying our enjoyment of food, life and the environment.


**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

**Professor Jennie Brand-Miller answers your questions**

***Isn't the insulin response more important than the GI value? Wouldn't it be better to have an insulin index of foods?***

The insulin demand exerted by foods is indeed important for long-term health, but it doesn't necessarily follow that we need an insulin index of foods instead of a glycemic index. When they have been tested together, the glycemic index is extremely good at predicting a food's insulin index. (In other words, a low GI food usually has a low insulin index value and a high GI food usually has a high insulin index value.) There are some instances, however, in which a food has a low GI but a high insulin index value. This applies to dairy foods and to some highly palatable, energy-dense 'indulgence foods.' Some foods (such as meat, fish, and eggs) that contain no carbohydrate, just protein and fat (and have a GI of essentially zero), still stimulate significant increases in blood insulin.

We don't currently know how to interpret this type of response for long-term health. It may be a good outcome, because the increase in insulin has contributed to the low level of glycemia. On the other hand, it may be less than ideal, because the increased demand for insulin contributes to beta-cell 'exhaustion' and the development of type 2 diabetes. Until studies are carried out to answer these types of questions, the glycemic index remains a proven dietary tool for predicting the effects of food on health.

A recent study in the *European Journal of Clinical Nutrition* (www.nature.com/ejcn/journal/vaop/ncurrent/abs/ejcn201128a.html) comparing GI and insulinemic index (II) values of carbohydrate-rich foods in healthy people, hyperinsulinemic people and people with type 2 diabetes reports that the GI values are similar regardless of the severity of glycemia or degree of insulin sensitivity, showing that GI is a property of foods and affirming its clinical usefulness in a broad population. Prof Tom Wolever concludes: 'However, the II values of carbohydrate foods were inversely associated with insulin sensitivity and positively related to the severity of glycemia and hepatic insulin extraction, suggesting that II is not solely a property of foods but also depends on the metabolic status of the subjects.'