

GI News—October 2011



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- Low blood glucose and food cravings
- Keep an eye on your eyesight if you have diabetes
- Nicole Senior debunks the myth that canola oil and margarine cause macular degeneration
- Catherine Saxelby delivers the scoop on lutein-rich spinach
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- Free eye examination for people at risk of AMD, diabetic retinopathy and glaucoma

We all take our eyesight for granted. Protecting it is one of the most important things we can do to help maintain quality and enjoyment of life. And for anyone with diabetes, it's absolutely vital to be vigilant because there's a higher risk for glaucoma, cataracts ('clouding' of the eye's lens) and diabetic retinopathy. This issue we focus on vision, what we can do to look after it and where a healthy low GI diet comes into the picture. Of course there are all our usual features including three low GI recipes to try – Marinated eggplant slices, Zingy Italian White Bean Soup and Anneka Manning's Tacos. Enjoy.

Good eating, good health and good reading.

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Food for Thought

Why you need to keep an eye on your eyesight if you have diabetes

Our sight is something most of us fear losing the most. Protecting it is one of the most important things we can do to help maintain quality and enjoyment of life. And for anyone with diabetes, it's vital to be vigilant because there's a higher risk for glaucoma, cataracts ('clouding' of the eye's lens) and diabetic retinopathy.

The good news is that in most cases the serious visual loss that can be part and parcel of diabetes can be prevented with regular eye examinations and treatment – the earlier the better.

It's estimated that about 75% of people with diabetes in Australia will develop diabetic retinopathy. The risk is greater for those who have had diabetes for a long time or if their blood glucose isn't well controlled. Signs and symptoms include blurred vision, floaters and spots, blank or missing areas of vision, double vision and difficulty seeing well at night. Often there are no signs or symptoms until the condition is quite advanced.

There are two stages. Background or non-proliferative retinopathy is when the weaker blood vessels begin to leak. At this stage there may be no noticeable change in vision, but without treatment it can progress to the more serious proliferative retinopathy where the retina grows new (and weaker) blood vessels that can bleed onto the retina or the vitreous (the jelly like centre of your eye). At this stage vision can be affected suddenly and seriously.

5 tips for protecting your eyesight

- See an eye specialist or optometrist when you are first diagnosed with diabetes and at least every 1–2 years afterwards. If retinopathy is detected, you will need to have your eyes examined more often and you may be referred to an ophthalmologist. Get in touch with your eye care professional immediately if you notice any changes in your vision.
- Because diabetic retinopathy is likely caused by both chronic high blood glucose levels and variation in blood glucose, the best way to prevent it is by keeping your blood glucose levels and HbA1c at recommended levels. Talk to your doctor or diabetes educator about this.
- Your lifestyle matters. Being active every day and eating a healthy and balanced low GI diet will help you manage your blood glucose levels. The key dietary recommendations are – choosing nutritious carbohydrate foods with a low GI as your staples; being aware of how much carbohydrate you eat; getting plenty of fibre in your diet; limiting foods that are high in saturated fat; eating lean protein foods to suit your appetite including fish once or twice a week or if you are vegetarian, making sure you focus on including foods that contain quality proteins and are good sources of omega-3 fats; using monounsaturated fats (such as olive oil); eating plenty of fruit and vegetables every day and limiting your salt and alcohol intake.
- If you have high blood pressure, research also shows that by reducing it you can slow the progression of diabetic retinopathy, so do see your doctor for regular checks.
- If you smoke, quit.

By taking these steps to protect your vision, you'll also improve your diabetes management. Now that's a win-win situation.

News Briefs

Free eye examination for people at risk of AMD, diabetic retinopathy and glaucoma

The Centre for Eye Health (www.cfeh.com.au) in Sydney (Australia), an initiative of Guide Dogs NSW/ACT and The University of New South Wales, provides state-of-the-art eye imaging and visual system diagnostic services to the general community, at no charge. A major goal of CFEH is to perform detailed eye examinations for individuals particularly at risk of glaucoma, diabetic retinal disease and age-related macular degeneration. Early diagnosis means the earliest possible intervention to prevent or minimise long-term vision loss. To visit CFEH, you just need a referral from your optometrist or ophthalmologist.

Low g-eyes

Dietary factors are known risk factors for age-related macular degeneration. In 'Food for Thought' (May 2006) we reported on research suggesting that the quality of the carbohydrates you eat may help to bring it on — or hold it off. A 2008 study (www.ajcn.org/content/88/4/1104) published in the American Journal of Clinical Nutrition confirms that it would be a good idea to make a low GI diet part of any AMD prevention plan along with foods you already know about such as dark green leafy vegetables, a variety of fruits (all different colours) and fish. Prof. Paul Mitchell from Sydney University's Department of Ophthalmology says the prospective population based study shows that a high GI diet is a risk factor for early AMD – the recognized precursor of sight-threatening late AMD. 'Low-glycemic-index foods such as oatmeal may protect against early AMD,' say the researchers in their conclusion.

The results of this earlier Australian study have been backed up by a recent review (www.ncbi.nlm.nih.gov/pubmed/20868767). There are a number of reasons why high GI diets may increase the risk of the development of AMD, says Dr Alan Barclay "high post-meal blood glucose levels and high average blood glucose levels lead to increased glycation of proteins within the eye,

increased oxidative stress, increased blood pressure, activation of protein kinase C, and direct gluco-toxic effects on the retina itself".

Low blood glucose affects food cravings

A small but interesting study in *The Journal of Clinical Investigation*

(<http://www.jci.org/articles/view/57873>) reports that we lose our ability to control desire and feel an increased urge to eat when our blood glucose levels drop. The researchers from Yale University School of Medicine and the University of Southern California Keck School of Medicine showed 14 healthy participants high and low calorie foods (from cake and ice-cream to tofu, fruit and vegetables) and non-food images and measured how seeing these images related to their desire for food and their brain activity under varying blood glucose conditions. Using scans to detect brain activity following a drop in participants' BGLs, they then compared the results of the scans to the participants' stated desires to eat different foods. They found that small drops in blood glucose activated the region of the brain that produces a desire to eat, while adequate levels of blood glucose activated the region of the brain that controls impulses. You can read the NHS Choices appraisal of the study can be seen at www.nhs.uk/news/2011/09September/Pages/blood-sugar-desire-high-calorie-foods.aspx.

What's new?

#1 Download – Miracle foods, myths and the media. “Curry could save your life.” “Beetroot can fight dementia.” “Asthma risk linked to burgers.” Every day there’s a new crop of seemingly life-changing headlines about how the food we eat affects our health. This special NHS Choices report looks at some of the foods that regularly appear in the news and examines whether the reports match the scientific evidence behind them. The reviewers point out that: ‘Research into single foods on our health is notoriously difficult to carry out. We have complex diets and it is difficult to disentangle the effects of one particular food or compound from all the others we consume. This means that many of the studies behind the superfood claims have limitations. These limitations are rarely reported in the media, and even more rarely given their true significance.’ The report discusses limitations such as confounding factors, inaccurate memories, proxy outcomes and animal and laboratory studies and why RCTs (randomised controlled studies) and systematic reviews are generally the best type of study for finding out if a food has any effect. You can download the report at www.nhs.uk/news/2011/02February/Documents/BTH_Miracle_%20foods_report.pdf

#2 Event – Bees, Bureaucracy and Biosecurity: Australia’s food future on a knife’s edge In September *GI News*, we reported bees around the world are in decline and without them it will be pretty hard to tuck into that low GI plant-based diet. Did you know:

- Some 65% of Australia’s food supply (fruits, vegetables, nuts and seeds) rely to varying degrees on managed European honeybees (*Apis mellifera*) for their pollination?
- Without honeybees to pollinate almonds, not one nut would set from the delicate flowers?
- Cooking essentials such as onions rely on honeybees?
- Even meat and dairy foods rely on lucerne and clovers pollinated by honeybees?

‘Australia is the last remaining country to remain free of the devastating Varroa mite – the key contributor to decimating honeybee populations around the world. Australia however faces its own onslaught of challenges, which if not urgently arrested have the potential to wipe out honeybee populations in Australia within 10–20 years,’ writes fourth generation apiarist Jodie Goldsworthy in UPDATE, the newsletter of the Australian Association of Food Professionals. She says: ‘In 2008 the small hive beetle breached our biosecurity and snuck into Australia. It has now spread across much of Australia establishing itself particularly well in our environment and has changed beekeeping forever in this country for the worse. Another unwanted intruder, still classified as an “incursion” is the Asian bee (*Apis cerana* – Java strain) which arrived in 2007 and is currently

confined around Cairns. The Asian bee is the natural host of the Varroa mite.’

As a special Q&A event for the Crave Sydney International Food Festival (<http://bit.ly/ojr7nV>) the Australian Association of Food Professionals has put together an expert panel to highlight and discuss the issues, and what is and isn't being done:

Where: Australian Museum Theatrette College St Sydney

When: 23 October 11am–1pm

Cost: \$25

Bookings/inquiries: 0448488080 secretariat@foodprofessionals.org.au

[Get the Scoop with Foodwatch's Catherine Saxelby](#)

The scoop on lutein-rich spinach

If you're not adding spinach to your meals, you're missing out on a dark green leafy vegetable that's chock full of vitamins, minerals and plant compounds (phytochemicals). It's one of those vegetables that is always recommended for peak health. The trick is to find ways to incorporate it into your cooking.

What's in it? It's an excellent source of vitamin C, folate, beta carotene (which is converted into vitamin A in the body) along with some vitamin E. An average serve (35g) provides 5 mg of vitamin C, one-eighth of the recommended daily intake.

Long famous, thanks to Popeye, for its high iron content, spinach's iron is actually not well absorbed. It's present but doesn't get into the body in great amounts. Red meat, chicken and fish are better for absorbable iron.

It also offers many antioxidants and, along with other leafy greens like kale and silverbeet (Swiss chard), is one of the best sources of lutein and zeaxanthin. These two antioxidants can help protect our eyes as we age, so keeping macular degeneration at bay. I suggest eating spinach in some form – raw or cooked – at least three times a week if you have a family history of this form of blindness.

And it's one food you can happily eat MORE of! It contains dietary fibre, virtually no fat and so few kilojoules/calories, you could eat as much as you wanted and not put on any weight.

Easy ways to enjoy spinach

- Make a salad of baby spinach leaves and toss through toasted pine nuts and crumbled goats cheese. Drizzle over a good dressing with wine vinegar and olive oil.
- Add 1 cup of well-drained frozen chopped spinach to your meat loaf or meat balls. It's a great way of sneaking in vegetables to kids who won't eat any!
- Toss a handful of baby spinach leaves into a curry or stir fry at the end of cooking. They will wilt in the heat of the dish, adding colour and nutrition.
- Use cooked spinach as a base for eggs or fish. Think of Eggs Florentine.
- Eat a baby spinach leaf salad every day or every second day.
- Add chopped cooked spinach to lasagna and meatloaf.

Or try Anneka Manning's Eggs in Nests with spinach from *The Low GI Family Cookbook*. You can find the recipe at <http://ginews.blogspot.com/2009/02/low-gi-recipes-of-month.html>.

Catherine Saxelby is an accredited dietitian and nutritionist and runs the Foodwatch Nutrition Centre at www.foodwatch.com.au.

[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.

Marinated eggplant slices

According to some sources, Italians have been cooking with eggplants since the 14th century. I know that it has been on our family's table and those of every one of my relatives' tables for my entire life, which alas, now spans many decades! This versatile fruit-vegetable can be roasted, grilled, stuffed, pureed or, as in this recipe, sauteed and marinated. Eggplants are also versatile in another way: they are considered to have diuretic, sedative and laxative properties. Feel free to cut back on the amount of oil. Makes 10 servings (2 slices each)

750g (1½lb) eggplant (common or Western types), cut into 0.5cm/¼ in slices

1 teaspoon sea salt

½ cup olive oil, divided

2 tbsp capers, drained, rinsed, chopped

1–2 cloves garlic, minced

120g (4oz) large green olives, pitted, coarsely chopped

15 fresh mint leaves, chopped

salt/pepper to taste

Sprinkle salt on the eggplant slices, place them in a colander and let drain for 30 minutes. Rinse and pat dry. Brush 4 tablespoons of olive oil on both sides of each slice, place on a tray or plate and set aside.

Heat a large non-stick skillet over medium-high heat. Add 4–5 eggplant slices at a time and cook until browned on both sides. When done, place each slice in an overlapping fashion in a shallow ceramic serving tray. Continue until all slices are cooked. Set aside.

In a small bowl add 2 tablespoons of olive oil and the next 4 ingredients (capers through mint). Season to taste with salt and freshly ground black pepper.

Transfer the dressing evenly over the layered eggplant slices and drizzle the remaining 2 tablespoons of oil over them. Cover and refrigerate for at least 4 hours before serving.

Per serve

Energy: 530kJ/126cal; Protein less than 1g; Fat 12g (includes 2g saturated fat); Available carbohydrate 0g; Fibre 3g

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 this **Money Saving Meals** recipe from *The New York Times* best-seller, *Forks Over Knives*. For more recipes check out the Money Saving Meals website at www.moneysavingmeals.com.au.

Zingy Italian White Bean Soup

This recipe from The Feel Good Guru Moira Nordholt begins the night before, when you will need to rinse your dried cannellini beans and cover them in water to soak. Serves 2 generously and easily 3.

1 cup dried cannellini beans (white Italian kidney beans), soaked
1 unsalted vegetable bouillon cube
4 garlic cloves, minced
Half a red onion, diced
2 stalks celery, diced
half a fennel bulb, diced
1 zucchini (courgette), diced
1 bunch of fresh spinach, chopped
1 tsp chopped oregano
4 fresh sage leaves, chopped
1 tsp chopped parsley
Splash tamari
Sea salt and freshly ground black pepper, to taste
1 lemon

Drain the beans, then put them in a pot, cover with water, and bring to a boil. Lower the heat and simmer until al dente.

Dissolve the bouillon cube in ¼ cup water in a large soup pot, over medium heat. Add garlic and onion. Cook, stirring constantly, until they sweat. Add celery and fennel. Allow the vegetables to heat through and soften. Cover the vegetables with water and bring to a boil. Simmer for 5–10 minutes.

Add zucchini, spinach, cooked beans, oregano, sage, parsley, tamari, sea salt and black pepper. Simmer for another 5 minutes, or until the zucchini is cooked but not mushy. Turn off the heat. Squeeze the juice of a whole lemon into the soup. Adjust the seasonings to your liking and serve.

Per serve (for 3 people)

Energy: 1030 kJ/ 245 cal; Protein 18 g; Fat 2 g (includes 0.3 g saturated fat); Available carbohydrate 28 g; Fibre 20g

Forks Over Knives (published by The Experiment) is available from bookshops and online.

Tacos

There's nothing like Anneka Manning's tasty tacos to get the family to feast on those budget-friendly, nutrition power packs – legumes. To add a little heat to the occasion, add 1 chopped red chilli to the tomato sauce with the red kidney beans and paprika. Anneka makes her own tomato sauce (1 onion, a garlic clove and 2 cans diced tomatoes) and guacamole (1 avocado, lime juice, a garlic clove, 1 spring (green) onion, 1 tomato and coriander/cilantro). If you don't have your own favourite recipes for these, you can find Anneka's in *The Low GI Family Cookbook*. Makes 12.

2 cups tomato pasta sauce
2 x 300g (10oz) cans red kidney beans drained and rinsed
1 tsp mild paprika
Freshly ground black pepper, to taste
12 taco shells
1/2 iceberg or cos lettuce, shredded
2 carrots, scrubbed, coarsely grated
1½ cups coarsely grated reduced fat cheddar cheese
1 cup guacamole

Place the tomato sauce in a medium saucepan. Add the red kidney beans and paprika and bring to a simmer over medium heat. Simmer for 10 minutes or until thick. Taste and season with pepper.

Transfer the red kidney bean mixture to a serving bowl. Place freshly ground black pepper, on the

table with the taco shells, lettuce, carrots, cheese and guacamole for everyone to assemble their own tacos.

Per taco

Energy: 1035 kJ/ 250 cal; Protein 11 g; Fat 12 g (includes 5 g saturated fat); Available carbohydrate 22 g; Fibre 6 g

Busting Food Myths with Nicole Senior

Myth: Canola oil and margarines cause macular degeneration.

Fact: Good fats – including canola oil and trans-free unsaturated spreads are probably protective against AMD.

One of worst things about food myths is the – albeit unintentional – harm they can cause. Such as was the case a few years back in Australia when an ophthalmologist thought he'd have a go at nutrition and started giving advice completely opposite to the prevailing dietary guidelines by recommending unhealthy fats like butter and warning against vegetable fats like canola oil and margarine spreads in an attempt to reduce the risk of age-related macular degeneration (AMD).

He got it wrong.

Macular degeneration causes damage to the retina and is the most common cause of blindness in developed countries. The cause is not fully understood but risk factors have been identified: the strongest factors are smoking and advancing age. Overweight, high blood pressure and high blood cholesterol are also risk factors, which is ironic because the advice the eye-doctor gave increases blood cholesterol levels. National dietary guidelines recommend we replace saturated fats with unsaturated fats found in vegetable oils and trans-free spreads, fish, nuts and seeds in order to reduce the risk of cardiovascular disease – still our biggest killer.

The first mistake the well-meaning ophthalmologist made was devising public health advice based on only a couple of studies; second was not understanding the types of studies they relied on are not designed to prove causation; third was ignoring the fact his advice conflicted with well established evidence-based advice for primary prevention of cardiovascular disease; fourth was starting a campaign to convince others including the media; and lastly he failed to properly translate the theory from the US studies into relevant food advice in the Australian food context.

The population studies he relied on can only indicate an association that needs further investigation, and are ranked as low-level evidence. Having a proposed mechanism also bolsters a case for causation but there was none. He transposed the American food supply on to Australia's and got the food advice wrong (for example Australian margarines are very low in trans fats). He basically pitted eye health against heart health and challenged us to choose but there's not much point having good vision if you're dead from a heart attack! It also wasted the valuable time of organisations like the Heart Foundation (Australia), the CSIRO and the Dietitians Association of Australia and more sensible eye specialists who had to control the damage with media communications refuting his ill-conceived advice.

Since this fiasco – which sent conflicting messages and confused people – a study conducted in Australia, the Blue Mountains Eye Study (BMES; www.ncbi.nlm.nih.gov/pubmed/16832021), did not find any link between vegetable oils or margarine spreads and macular degeneration. In fact they found a significantly lower risk of developing macular degeneration in those consuming higher amounts of both long and short chain omega-3 fats, such as those naturally present in fish, canola oil, linseeds, some nuts and green leafy vegetables. The BMES also found a lower risk of AMD in those eating higher amounts of zinc, and lutein and zeaxanthin: the yellow/orange coloured

pigments in vegetables, fruits and eggs (and the greatest benefit was seen among participants who regularly consumed a combination of the protective nutrients as part of a low GI diet). A systematic review and meta-analysis (www.ncbi.nlm.nih.gov/pubmed/21899805) of lutein and zeaxanthin and AMD also found a protective effect of consuming higher amounts. The benefits of other dietary antioxidants are not clear, however a *Cochrane review* (www2.cochrane.org/reviews/en/ab000253.html) of the evidence does not support taking dietary supplements to ward off AMD. Lowering the GI of the diet appears to be protective with several other studies showing associations between a high GI diet and AMD. What we really need is high level studies such as randomised controlled trials to find out the best diet for preventing AMD and be prudent in the mean time.

So what does the current evidence suggest we do to reduce our risk of AMD?

- Don't smoke
- Maintain a healthy weight
- Eat fish and seafood to obtain omega-3 fats
- Eat plenty of different coloured vegetables and fruits for their beneficial phytochemical antioxidants
- Make the switch to low GI carbs (the smart carbs)
- Replace saturated fats from animal sources such as butter, whole dairy foods and fatty meat with unsaturated fats from vegetable oils and trans-free spreads, nuts and seeds
- Minimise trans fats in partially hydrogenated oils by limiting commercially produced pastries, cakes and deep fried fast foods – be aware sources of trans fats vary by country

Nicole Senior is an Accredited Practising Dietitian and Nutritionist and author of *Eat to Beat Cholesterol*, *Heart Food* and *Belly Busting for Blokes* (www.bellybusting.com.au). She loves to see-food and eat it!

[GI Symbol News with Dr Alan Barclay](#)

Reducing your risk of breast cancer through a healthy lifestyle

In Australia and the US, breast cancer accounts for around 1 in 4 cases of all cancers, and the number of cases has more than doubled over the past 25 years.

There are a large number of risk factors for breast cancer that you can't do anything about such as your genes and family background, the number of children you have, your age at when your first child is born, and your age at menarche and menopause. However, there are also a number of risk factors related to your diet and lifestyle that you can do something about.

The main risk increasers include the usual suspects.

- Excessive alcohol consumption increases the risk of developing breast cancer. The risk increases with the amount of alcohol consumed. Women who drink 2 or more standard drinks a day have about a 21% increased risk of developing breast cancer compared to those who do not drink at all.
- High fat diets have been found to increase the risk of developing breast cancer by 10–15%, and high processed meat consumption (e.g. more than 3 serves a week) has been found to increase the risk by 8%.
- Being overweight or obese has been found to increase breast cancer risk in women by 9% after menopause.

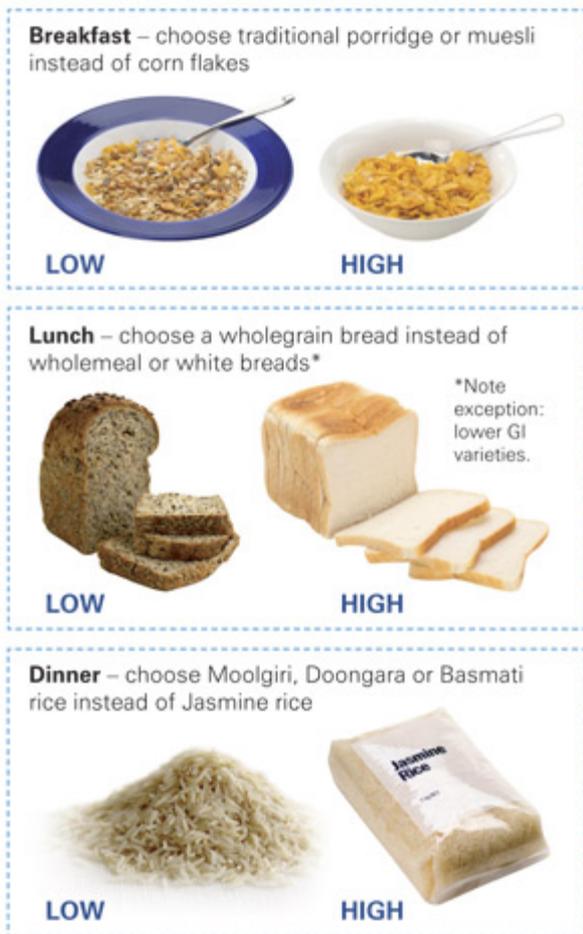
A recently published systematic review and meta-analysis (www.ncbi.nlm.nih.gov/pubmed/21221764) has added another to the risk increaser list, finding that a high GI diet may increase the risk of breast cancer by 8% when a high (GI 60 or more) diet compared to a low GI diet (GI 45 or less) is consumed for 5 years or more.

Three key risk reducers are regular exercise, eating plenty of dairy foods and enjoying an all-round healthy, balanced diet.

- Regular exercise reduces the risk of breast cancer by up to 25%. The American Cancer Society recommends 45–60 minutes of moderate intensity physical activity on 5 or more days a week to help reduce the risk of developing breast cancer.
- Consuming plenty of dairy foods (that's more than 2–3 serves a day) has been found to decrease the risk of developing breast cancer by 15%, most likely due to their high calcium content.
- Eating an all round healthy diet has been shown to decrease the risk of developing breast cancer by 11%. This analysis did not take GI into account, and the one study that did found a 32% risk reduction!

How do you go low GI? To reduce the average GI of your diet by 10–15 units, simply swap any high GI foods that you may be eating with low GI alternatives. For example, swap high GI breads and breakfast cereals for low GI ones. A 10–15 unit difference for each food you eat within all of the major food groups will make a difference as it all adds up.

Here at the GI Foundation, we are big fans of the 'this for that' swap it approach. The reason why is relatively simple: the GI was originally designed to choose the better options within each food group.



In Australia, the easiest way to find all round healthy low GI choices is to look for foods with the low GI symbol: not only have they had their GI tested at an accredited lab, but they must also meet category specific nutrient criteria for calories/kilojoules, total and saturated fat, sodium (salt), and where appropriate fibre and calcium.

Elsewhere in the world, checkout the GI News' 10 tips to reduce the GI of your diet (http://ginews.blogspot.com/2008_04_01_archive.html), make use of the GI database at www.glycemicindex.com or pick up a copy of the annual Shopper's Guide to GI Values (it's published in Australia, New Zealand and the US/Canada).

The GI Symbol, making healthy low GI choices easy choices



For more information about the GI Symbol Program

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GI Update

Prof Jennie Brand-Miller answers your questions

My mother has been diagnosed with age-related macular degeneration and besides being told to take lutein and zeaxanthin supplements, she was advised to up her leafy green veggie intake and to eat a healthy low GI diet. Can you explain how a low GI diet would benefit your eyes?

Age-related macular degeneration (AMD) affects the central macula of the eye, leaving sufferers with only peripheral vision. The macula is the small yellowish spot in the middle of the retina that provides the greatest visual acuity and colour perception. It's the macula that lets us to see fine detail and is critical to central vision helping us to recognise faces, drive a car, read a newspaper, or do close handwork. It is now one of the most common causes of blindness among older adults in the Western world and AMD Alliance International estimates that 25–30 million people are affected worldwide.

Researchers from Tufts and Harvard universities were the first to notice the link between GI and vision. They had followed 526 women without previous visual problems from the Nurses Health Study for ten years. At regular intervals, they assessed the nurses' diets using a food frequency questionnaire. They found that when total carbohydrate intake was constant, consuming a high GI diet was associated with a doubling of the risk of developing AMD.

Similarly, Professor Paul Mitchell, the lead researcher of the Blue Mountains Eye Study in New South Wales, and his colleagues found that a high GI diet, but not a high carbohydrate diet, was linked to an almost 80 per cent higher risk of having age-related macular degeneration within the 10 years of the study. They also found the incidence of cataracts was higher among elderly people who chose a high GI diet.

Why the link between GI and vision? Well, the retina has among the highest supplies of blood and nutrients, including glucose, and is dependent on adequate glucose delivery from the circulation to maintain its function. Because glucose stores in the retina are negligible and there are no glucose transporters in the cell membrane, it appears that glucose levels in the retina reflect whatever level is found in the blood. High levels spell trouble because excessive uptake produces high reactive charged particles called free radicals that damage all the machinery inside the cell.

Although 'observational' data like these studies cannot establish that the observed association is 'cause-and-effect', they indicate a new direction for further studies.