THIS MONTH Facts on fats; What you need to know about the sugar–fat see-saw; Prof Steve Simpson: “Conventional thinking which demonises fat, carbohydrate or sugar in isolation as causes of the obesity crisis has now run its course”; How much sugar? Dr Alan Barclay on food labels and recipe analysis; Slow metabolism? It’s possible. Our genetic make-up underlies how many kilojoules we burn per minute; Nicole Senior on the importance of actively measuring and managing blood cholesterol levels; Enjoy rye bread and keep good carbs and carry on; Recipes: Rye and caraway bread and easy fish cakes, rye crostinis.

FOOD FOR THOUGHT

WHAT YOU NEED TO KNOW ABOUT FAT.

In 1927, Harvard Medical School Professor Elliot P. Joslin wrote: "With an excess of fat, diabetes begins, and from an excess of fat, diabetics die." Excess body fat – particularly around the waistline – definitely contributes to the development of type 2 diabetes. And we now have good evidence to show that a high saturated fat / low unsaturated fat intake contributes to the complications of diabetes. Current public health messages are more focused on reducing sugar than fat. But in the Sugar–Fat Seesaw (see below What’s New?), Dr Jason Gill reminds us that to reduce overall calories (kilojoules) and combat obesity we need to reduce fat intake (9 calories/37 kJ per gram) as well as sugar (4 calories/17 kJ per gram). In fact, most high sugar diets are actually low in fat, and vice versa. This is because most sources of fat in our diet are savoury not sweet (e.g. potato crisps, French fries, burgers), while most sources of sugar contain no fat (e.g. fruit, low fat dairy, soft drinks and sweetened juice drinks). Nutritionists call this the “sugar–fat seesaw”.

Looking for lower-fat versions of the foods you already eat is one easy way to reduce total energy intake. However, check the ingredient list on the packet to make sure that the fat hasn’t been replaced by highly refined carbohydrates (starches or sugars) – they may help reduce the calories (kilojoules), but they can have unwanted effects on blood glucose and insulin levels.

A fat-free diet is undesirable and unnecessary. You can significantly change the total fat content of your diet from low fat to higher fat (depending on your personal preferences and particular needs) without detrimentally affecting your health – providing you eat the right kind of fat. What follows is an edited extract from Dr Alan Barclay’s Reversing Diabetes (Murdoch Books).

Fat facts: Fats are an essential nutrient with many important uses in our bodies, and they are also an enjoyable part of healthy eating. They:

- Form the structure of all the body’s cells
- Are used in the manufacture of bile and sex hormones
- Insulate our body against cold and protect our organs
- Are the main source of the fat-soluble vitamins (vitamins A, D, E and K)
- Are a major source of stored energy within the body
- Carry many of the pleasant flavours associated with foods and create delicious mouth feel.
Fats provide a lot of calories – more than twice the energy of carbs or protein – and they are the least satiating nutrient. The digestion of fat is a slow process compared with carbs or protein – it doesn’t really begin until the fat reaches your small intestine. Here, bile works rather like the detergent in the dishwasher, breaking up fats into small droplets that are cleaved apart by an enzyme from the pancreas. About three hours after eating the digested fat is fully absorbed and eventually circulates in the bloodstream as triglycerides.

There are four main kinds of fat in our diets: saturated fat, trans fat, mono-unsaturated fat and polyunsaturated fat. Collectively, mono-unsaturated and polyunsaturated fats are called unsaturated fats. Of course, foods and ingredients are not pure sources of any particular kind of fat – they contain a mixture of different kinds of fatty acids. It is much more practical to swap from high saturated fat and trans fat foods and ingredients to lower equivalents, rather than trying to strictly avoid any particular one of them.

- **Frequent consumption of large amounts of foods and ingredients high in saturated fat** is not good for you because they are the kind that raise the ‘bad’ LDL cholesterol, which can block blood vessels, thereby increasing your risk of cardiovascular disease.
- **Like saturated fat, trans fat** increases the amount of LDL cholesterol in the blood, but it also lowers the “good” HDL cholesterol. So the overall effect is even worse for your health than saturated fat.
- **Mono-unsaturated and polyunsaturated fats** can help lower LDL cholesterol levels and raise HDL cholesterol, decreasing your risk of cardiovascular disease. It is therefore important that you eat some of these good fats every day. You’ll find them in avocado, nuts and seeds, fish and vegetable oils.

Because the different kinds of fat are found in such a broad range of foods, it is essential that we eat a variety of foods in the right balance. A good guide is to avoid trans fats as much as possible, and for every gram of saturated fat you eat, eat 2 grams of unsaturated fat. This means that you do not have to avoid all foods and ingredients that are high in saturated fat – it’s all about balance.

The amount of fat you should eat depends on a number of factors like your age (low-fat diets are not recommended for infants and young children), your weight (lower-fat diets are sometimes recommended if you are trying to lose weight), your level of physical activity, and your cultural background (some cultures like the Japanese traditionally have a low fat diet, whereas people from the Mediterranean traditionally eat a higher fat diet). For personalised advice, see a registered dietitian (NZ, UK, US/Canada) or accredited practising dietitian (Australia).

The findings of a new meta-analysis in *PLOS Medicine* suggest that while exchanging dietary carbohydrate (starches and sugars) with saturated fat does not appreciably influence fasting blood glucose, substituting carbohydrate and saturated fat with a diet rich in unsaturated fat, particularly polyunsaturated fat, is beneficial for the regulation of blood glucose and insulin.

**NEWS BRIEFS**

Prof Steve Simpson. “Conventional thinking which demonises fat, carbohydrate or sugar in isolation as causes of the obesity crisis has now run its course; What you need to know about the sugar–fat seesaw; What’s all the talk about slow metabolism? Time to stop dumping on potatoes says Ted Kyle of ConscienHealth.

**TIME TO END THE SINGLE NUTRIENT APPROACH**
“Our framework throws down the gauntlet to the whole field of human nutrition. It shows that the prevailing focus on single nutrients is not able to help us understand complex chronic diseases, and that an approach based on nutrient balance can help solve the problem,” said Prof Simpson. “Conventional thinking which demonises fat, carbohydrate or sugar [sic] in isolation as causes of the obesity crisis has now run its course. We’ve provided a framework for not only thinking about but also experimentally testing issues around dietary balance.”

In their game-changing paper in *Annual Review of Nutrition*, Prof David Raubenheimer and Prof Stephen Simpson from the University of Sydney’s Charles Perkins Centre call for a radical rethinking of human nutrition science through a new framework they call “nutritional geometry”. This looks at how mixtures of nutrients and other dietary components influence health and disease, rather than focusing on any one nutrient in isolation. To illustrate the power of the approach, the researchers plotted data for the composition of 116 diets, compiled from previous published studies examining macronutrient ratios (carbohydrate, fats and protein) and energy intake in humans. Their model shows that protein was the strongest driver influencing diet, regulating the intake of fat and carbohydrate.

**THE SUGAR-FAT SEESAW**

“It is important not to simply focus on reducing sugar intake; we need to emphasise reductions in fat intake as well,” says Dr Jason Gill at Glasgow’s Institute of Cardiovascular and Medical Sciences. In fact, just focusing health messages on sugar may mislead consumers on the need to also reduce overall calories (kilojoules), including those from fat report Glasgow University scientists who looked at data from 132,479 participants in the UK Biobank study who completed online diet questionnaires and were measured at a clinic. Of those taking part, 66% of the men and 52% of the women were overweight or obese. The strongest predictors of body mass index were overall calories (kilojoules) and calories from fat, they report in the *International Journal of Epidemiology*. Compared with the normal weight people in the study, the overweight/obese people obtained a higher proportion of their calories from fat, and a lower proportion from sugars.

“The critical message is that people need to reduce their overall calories” says Prof Jill Pell, Director of the Institute of Health and Wellbeing. “If focusing attention on sugar results in people compensating by eating more crisps then we will fail to combat obesity.”

**TIME TO STOP DUMPING ON POTATOES**

A recent systematic review of clinical studies tells us that it’s time to stop dumping on potatoes. Daniel Borch and colleagues systematically reviewed both intervention and observational studies. They concluded: “The identified studies do not provide convincing evidence to suggest an association between intake of potatoes and risks of obesity, type 2 diabetes, or cardiovascular disease. French fries may be associated with increased risks of obesity and type 2 diabetes although confounding may be present.” In plain English, there’s no real proof that eating potatoes increases your risk of obesity, type 2 diabetes, or cardiovascular disease. French fries aren’t entirely off the hook, though.

From the Harvard School of Public Health, you’ll get a different view. Their website warns that
“potatoes seem to be a particular culprit for weight gain and diabetes.” They say that “the problem with potatoes” lies with their effect on blood sugar and insulin. “A cup of potatoes has a similar effect on blood sugar as a can of Coca Cola or a handful of jelly beans,” they say. These dire warnings tie back to a large observational study published in 2011. In that study, Harvard researchers found an association between eating more potatoes and gaining weight over time. But at the end of the day, even with this large, observational study, we are left with potential confounding factors that undermine the credibility of those warnings about the lowly spud. Correlation does not prove causation.

Dr Alan Barclay, Scientific Editor of GI News, advises caution about blaming any single food for health woes: “It’s just the same as the one-nutrient-at-a-time blame game. Of course the overall pattern is what counts. French fries are not typically consumed by themselves, but with hamburgers, deep fried chicken, etc. and slurred down with a soft drink (regular or diet). Dry, salty starchy foods alone are hard to swallow.”

—Thanks to Ted Kyle of Conscienhealth for this report. Click here for the study by Borch et al.

Click here for more from GI News and the Glycemic Index Foundation on potatoes.

WHAT’S ALL THIS TALK ABOUT SLOW METABOLISM?

The 27 July 2016 issue of Obesity is chock full of new data and intelligent commentaries on the subject. Journal editors, Donna Ryan and Eric Ravussin, open the issue with a reflection on new insights into metabolic adaptation after weight loss. They provide good insight on implications for trying to maintain a reduced weight and say: Laziness is clearly not a factor in the weight regain seen in contestants of “The Biggest Loser.” In fact, it may be challenging to find a more dedicated group of individuals. Thus, an emerging frontier in obesity research is weight loss maintenance. We need to better understand the biology behind weight regain if we are to improve treatment.

In another commentary, Angelo Tremblay builds on their comments about the importance of weight maintenance. He describes why obesity is a chronic disease, not yet readily curable: The reported thermogenic adaptation over time also reminds us that the metabolic vulnerability of individuals with obesity persists even after their condition has supposedly been cured by weight loss.

Michael Rosenbaum and Rudolph Liebel publish important new research in this issue. Their work points to important differences between acute changes in metabolism with weight loss and the changes that come with maintenance of a reduced weight.

Finally, Manfred James Müller comments on the work by Rosenbaum and Liebel. He explains the need for fresh thinking about metabolic adaptation. He asserts that “from now on, taking both points of view [acute and long-term changes] into account will be wise.”

Contrast this rich scientific understanding of metabolic adaptation with glib advice dispensed routinely to the public. The difference is stark. “Is it possible to be overweight because of a slow metabolism? Probably not,” says Dr Donald Hensrud on the Mayo Clinic website. Bless his heart, Hensrud probably means well. But he and countless others are dispensing bad information that’s simply unhelpful. It’s way past time for them to catch up on the science of obesity.

—Thanks to Ted Kyle of Conscienhealth for this report. Click here for the editorial by Ravussin and Ryan, here for the commentary by Tremblay, and here for the commentary by Müller. Fothergill’s study may be found here. The study by Rosenbaum and Liebel may be found here.
PERSPECTIVES WITH DR ALAN BARCLAY

HOW MUCH SUGAR IS IN THAT?

As most people know these days, the latest advice from the World Health Organisation is to keep average free sugars consumption to less than 10% of energy (kilojoules or calories) to help reduce the risk of developing tooth decay and to limit “empty calories” which may contribute to unwanted weight gain.

Free sugars include all monosaccharides (e.g., galactose, glucose (dextrose), fructose) and disaccharides (e.g., lactose, maltose, sucrose (table sugar), etc.) added to foods by the manufacturer, cook or consumer, plus sugars naturally present in honey, syrups (e.g. rice or malt syrup) and fruit juices. Of course, the 10% of energy applies to all of the foods and drinks you consume over the course of a year or more, not to individual foods and drinks as such.

Some people like to look at the amount of “Sugars” listed in packaged foods/drinks Nutrition Information/Facts panel to help them decide if they are going to consume them or not. It’s important to note that in most countries, only total “Sugars” are listed in packaged foods Nutrition Information/Facts panel. In this context, the term “Sugars” includes all sugars that occur naturally in foods and ingredients (e.g., fruits, vegetables, milk, etc.) as well as the free sugars as defined by the WHO. So, “Sugars” as found in the packaged foods Nutrition Information/Facts panel is not equivalent to all added sugars, free sugars or indeed sugar (i.e., high fructose corn syrups, sucrose or table sugar). So unfortunately, you are not able to simply pick up a packaged food to see how much (added/free) sugar it contains – you can only see how much total sugars.

Some people may think that in order to follow the WHO Sugars Guideline, you simply have to choose foods and drinks that contain less than 10 grams of total sugars per 100 grams of food. However, this is 10% by weight (or volume, depending on the product) which is not the same as 10% of energy. In the May 2015 edition of GI News, we showed readers how to calculate the percentage of energy from information in packaged foods mandatory Nutrition Information / Facts panel and ingredient list.

Most recipe / cook books currently on the market that include a nutritional analysis, usually only list total carbohydrates (= total starches + total sugars), while some also include total sugars. For
recipes included in the *GI News Kitchen*, we showcase some original recipes as well as some of the best recipes from the latest cookbooks that are suitable for people managing their blood glucose. For original recipes, we do our own full nutritional analysis and list total carbohydrates, sugars and starches. Whenever the information is provided in other cookbooks we also include it in *GI News*. At this point in time, no one is providing information about the added/free sugars content because it’s simply too difficult to estimate. One of the main reasons for this is that there are currently no scientific laboratory tests that can distinguish between naturally occurring and added sugars in foods and drinks. However, new methods of estimating (calculating) the added sugars content of foods have recently been published and are being increasingly used to estimate population intakes.

As regular *GI News* readers are aware, the USA’s FDA has recently mandated the inclusion of added sugars (calculated) in its Nutrition Facts panel (along with the percent Daily Value), but this is not quite the same as free sugars as defined by the WHO as it doesn’t include fruit or vegetable juice concentrated from 100 percent fruit juice. It is at least a step in the right direction, and as food regulatory agencies around the globe likely follow the USA’s precedent, perhaps they can tweak it to encompass the WHO’s definition of free sugars and associated guidelines.

*Alan Barclay PhD* is a consultant dietitian and scientific editor of GI News (alan.barclay@gisymbol.com). He worked for Diabetes Australia (NSW) from 1998–2014 and is a member of the editorial board of *Diabetes Management Journal* (Diabetes Australia) He is author/co-author of more than 30 scientific publications, and co-author of *The Low GI Diet: Managing Type 2 Diabetes* (Hachette Australia) and *The Ultimate Guide to Sugars and Sweeteners* (The Experiment, New York). His new book, *Reversing Diabetes* (Murdoch Books Australia), was published in 2016 and reviewed in Glycosmedia *Diabetes News*.

---

**Q&A WITH PROF JENNIE BRAND-MILLER**

*My Mum’s overweight so is my Gran (Mum’s mum) and so am I. Friends say that it must be our genes and we must have a slow metabolism? If that’s the case, what can I do about it?*

There is plenty of evidence to back up the idea that our body weight and shape is at least partially determined by our genes. A child born to overweight parents is much more likely to be overweight than one whose parents are not overweight. Most of this knowledge comes from studies of twins. Identical twins tend to be similar in body weight even if they are raised apart. Twins adopted out as infants show the body-fat profile of their biological parents rather than that of their adoptive parents.

We also know that when naturally lean people are fed 10 per cent more energy than they need, they increase their metabolic rate and their body resists the opportunity to gain weight. While overweight people, fed the same excess energy, pile on the kilos. The information stored in our genes governs our tendency to burn off or store excess kilojoules.

Our genetic make-up underlies our metabolic rate – how many kilojoules we burn per minute. Bodies, like cars, differ in this regard. An eight-cylinder car consumes more fuel than a small four-cylinder one. A bigger body requires more kilojoules than a smaller one. When a car is stationary, the engine idles – using just enough fuel to keep the motor running. When we are
asleep, the ‘revs’ are even lower and we use a minimum number of kilojoules. Our resting metabolic rate (RMR) – the kilojoules we burn by just lying completely at rest – is fuelling our large brain, heart and other important organs. When we start exercising, or even just moving around, the number of kilojoules (the amount of fuel we use) increases. But the greatest proportion of the kilojoules used in a 24-hour period are those used to maintain our RMR.

Since our RMR is where most kilojoules are used, it is a significant determinant of body weight. The lower your RMR, the greater your risk of gaining weight, and vice versa. Whether you have a high or low RMR is genetically determined and runs in families. We all know someone who appears to eat like a horse but is positively thin. Almost in awe we comment on their fast metabolism, and we may not be far off the mark.

Men have a higher RMR than women because their bodies contain more muscle mass and are more expensive to run; body fat, on the other hand, gets a free ride. These days, too many men and women have undersized muscles that hardly ever get a workout. Increasing muscle mass with weight-bearing (resistance) exercise will raise your RMR and is one of the secrets to lifelong weight control.

Interestingly, we know that our genes dictate the fuel mix we burn in the fasting state (overnight). Some of us burn more carbohydrate and less fat even though the total energy used is the same. Scientists believe that subtle deficiencies in the ability to burn fat (as opposed to carbs) lie behind most states of being overweight and obese.

Indeed, in their latest research, if you have one copy of a high risk gene called FTO, geneticists have found you are 30 per cent more likely to become overweight. If you have two copies, then you are 67 per cent more likely! That is the strongest association yet of a common gene with obesity. Unfortunately, one in six people of European descent carry two copies and are therefore more prone to gain weight in the current environment.

This doesn’t mean that if your genes are to blame you should resign yourself to being overweight too. But it may help you understand why you have to watch what you eat while other people don’t. Furthermore, the current epidemic of overweight can’t be blamed on our genes – our genes haven’t mutated in a space of 35 years, but our environment has. So while genetics writes the code, environment presses the buttons. Our current sedentary lifestyles and food choices press all the wrong buttons!

If you were born with a tendency to be overweight, what you eat matters more. Genes can be switched on or off. By being choosy about carbohydrates and fats you will maximise your insulin sensitivity, up-regulate the genes involved in burning fat and down-regulate those involved in burning carbs. By moving your fuel ‘currency exchange’ from a ‘carbohydrate economy’ to a ‘fat economy’, you increase the opportunity of depleting fat stores over carbohydrate stores. This is exactly what will happen when you begin to eat a nutritious, low GI diet.

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

Here, I’ll be focusing on good food and good living for heart health throughout 2016. Each month, I’ll bring you news you can use and ideas to inspire you to look after your heart. Whether it’s high cholesterol, high blood pressure, high blood glucose, a big belly or the whole darn lot, you’ll find advice, hints, tips and tricks to help you and your family get back to whole-hearted health.

DOES BLOOD CHOLESTEROL EVEN MATTER ANY MORE?

You might have heard the conspiracy theories about cholesterol. They say concern about high cholesterol is a story made up by Big Pharma to sell more drugs. I’m not happy about the billions spent on cholesterol-lowering drugs either (diet works too), but that doesn’t mean your cholesterol level isn’t important, or that drugs aren’t helpful for many people. It’s true that estimating cardiovascular risk involves assessment of many factors and cholesterol management is more nuanced nowadays but cholesterol in your blood is still important.

Here are a few facts that reinforce the importance of actively measuring and managing blood cholesterol levels:

- **High blood cholesterol** increases your chances of having a heart attack; the higher your cholesterol, the greater your cardiovascular risk.
- The World Health Organisation says over 60% of coronary heart disease in developed countries is due to total cholesterol levels over 3.8mmol/L (150mg/dL).
- The US Department of Health says research from experimental animals, laboratory investigations, epidemiology, and genetic forms of hypercholesterolemia indicate that elevated LDL cholesterol is a major cause of CHD. In addition, recent clinical trials robustly show that LDL-lowering therapy reduces risk for CHD, and consider LDL cholesterol a primary target for treatment.
- The INTERHEART study of 30,000 people in 52 countries estimated 45% of heart attacks in Western Europe are due to abnormal blood lipids, and people with abnormal blood lipids are three times more likely to have a heart attack than those with normal levels.

Drugs or diet? Cholesterol lowering drugs are some of the most commonly prescribed in the community and there’s a common misconception that taking a cholesterol-lowering medication means you can eat whatever you want. Wrong. Drugs can’t overcome a poor diet. Fortunately, in this age of “natural health” there is a growing interest in avoiding medication if possible, and an increasing acceptance of diet as a mainstay of treatment.

The good news is that diet and medication can work together to produce even better results. They are complementary because they work via different mechanisms – most (statin) medication works on cholesterol production in the liver while diet works in a variety of ways including reducing absorption of cholesterol from the gut. The big plus for diet, however, is it works to improve numerous risk factors simultaneously including blood vessel function, weight, blood glucose, blood pressure, inflammation and blood clotting (just to name a few of the ones we know about).

If your doctor recommends taking a cholesterol-lowering drug, there’s a lot you can still do to help your heart. While you might forget to take your pill, eating is something we do every day and making the right food choices can be just as powerful – and even better – than any drug. And the best part: it can taste terrific!

As regular readers will know, actively measuring and managing blood cholesterol levels is a topic that’s close to my heart and I published a cookbook (with Veronica Cuskelly) about it – Eat to Beat Cholesterol – back in 2007. We have just completely revised and updated it with many more recipes. You can find out more about it HERE.
Nicole Senior is an Accredited Nutritionist, author, consultant, cook, food enthusiast and mother who strives to make sense of nutrition science and delights in making healthy food delicious. You can follow her on Twitter, Facebook, Pinterest, Instagram or check out her website.

KEEP GOOD CARBS AND CARRY ON

RYE

Finland in July. Midsummer. Fields and ripening fields of rye, dense rye sourdough from “The Bakery in the Woods” with hot smoked salmon for lunch and toasted and topped with wild bilberry jam at breakfast or with the golden chanterelles gathered in the woods. As a bonus to its flavour and texture, rye bread is an excellent source of fibre, vitamins and minerals.

Rye is a northern hemisphere crop. It’s very hardy and thrives in these cooler climes where it’s been a staple for about 3000 years and was long the dominant grain for baking bread. In fact, it produces a very distinctive kind of bread thanks to its unusual carbohydrates as Harold McGhee explains in his wonderful On Food and Cooking.

“Rye contains a large quantity, up to 7% of its weight, of carbohydrates called pentosans (an old term; the new one is arabinoxyllans). These are medium-sized aggregates of sugars [and a form of dietary fibre] that have the very useful property of absorbing large amounts of water and producing a thick, viscous, sticky consistency. Thanks to pentosans, rye flour absorbs eight times its weight in water, while wheat flour absorbs two. Unlike starch, the pentosans don’t retrograde and harden after being cooked and cooled. So they provide a soft, moist texture that helps give rye breads a shelf life.”

Most rye breads on the market are a combination of rye and wheat flours – wheat brings the rising power of gluten to the mix. Rye proteins simply don’t form an elastic network like gluten, (says Harold McGhee) because the glutenin molecules can’t link up end-to-end into long chains.

As well as breads, you can buy a range of rye products including:

- Rye kernels (also called berries or groats) can be substitutes for wheat berries in recipes. Look in health food stores or online. They have a low GI – ¼ cup cooked rye kernels: GI 34 (average), carbs 21g, GL 7.
- Cracked rye (rye grits) is the whole grain cut into small bits. Look in health food stores or online.
- Rye flakes are the hulled, steamed and rolled rye grains. Like rolled oats, you can eat the flakes as a porridge or sprinkle them over bread before you bake it or add them to bread and cake recipes. Look in health food stores or online.
- Rye flours – dark rye flour (rye meal) is produced when the whole kernels are milled; light rye flour means that the germ and bran were removed from the kernel before milling. Look in larger supermarkets and health food stores.
RYE AND CARAWAY BREAD

If you are toasting this bread, note that it will take a little longer to turn golden than other breads. Try adding different seeds, such as sunflower seeds or pepitas (pumpkin seeds). Recipe reproduced with the kind permission of Murdoch Books from Dr Alan Barclay’s Reversing Diabetes.

Makes: 1 loaf (16 slices)
Prep time: 15 minutes + 2 hours 25 minutes resting and rising
Cooking time: 40 minutes

2 teaspoons instant dried yeast
1 teaspoon light brown sugar
1⅓ cups rye flour
1⅓ cups stone-ground plain (all-purpose) flour, plus 2 tablespoons for kneading
¼ cup rolled (porridge) oats
2 tablespoons chia seeds
2 tablespoons caraway seeds
1 tablespoon linseeds (flaxseeds)
olive oil spray
1 teaspoon semolina

Combine the yeast, brown sugar and 1⅓ cups tepid water in a bowl. Stir until the yeast has dissolved, then set aside for 10 minutes or until frothy. • Put the flours in a large bowl. Combine the oats, chia seeds, caraway seeds and linseeds in a bowl. Set aside a pinch of the mixture for sprinkling, add the remaining mixture to the flours and mix to combine. Make a well in the centre, then pour in the yeast mixture and stir until the dough comes together. Turn the dough onto a lightly floured surface and knead for 8–10 minutes or until smooth and elastic. Return the dough to the lightly oiled bowl, cover with a clean tea towel (dish towel) and rest in a warm place for 1½ hours or until doubled in size. • Lightly spray a 9 x 19 cm (approx. 4 x 8in) loaf tin (base measurement) with olive oil and sprinkle with the semolina. Using your hands, knock back the dough to its original size. Knead the dough for 2–3 minutes, then roll into a log shape and cut three diagonal slashes into the top of the log. Place in the prepared tin, sprinkle with the reserved oat and seed mixture, cover and set aside to rise for 45 minutes. • Preheat the oven to 200°C (400°F/Gas 6). Bake the bread for 35–40 minutes or until the top is golden and the loaf sounds hollow when tapped. Transfer to a wire rack to cool before slicing.

Per serve (one slice)
510kJ/ 120 calories; 4g protein; 2g fat (includes 0.3g saturated fat; saturated : unsaturated fat ratio 0.18); 18g available carbs (includes 0.5g sugars and 17g starch); 4g fibre
IN THE GI NEWS KITCHEN THIS MONTH

Recipes from Veronica Cuskelly and Anneka Manning make it easy to whip up a meal with fish that doesn’t cost a fortune and that the whole family will love.

EAT TO BEAT CHOLESTEROL

These easy fish cakes are a good source of omega-3 fats. The recipe is reproduced from the latest (it’s the third if you are counting) edition of Nicole Senior’s Eat To Beat Cholesterol (New Holland). The delicious recipes in the book were created by Veronica Cuskelly.

EASY FISH CAKES

We used Burgen brand Soy-Lin bread but you could use any mixed grain and seed bread.
Preparation time: 15 minutes • Cooking time: 15 minutes • Serves: 2

Patties
3 slices soy and linseed bread, crumbed
2 x 110g (4oz) cans sardines in water, drained and mashed
½ cup diced red onion
2 tsp finely chopped dill
1 lemon, finely zested
1 egg, lightly beaten
1 tbsp wholemeal flour
1 tbsp canola oil
Lemon wedges

Salad
2 handfuls salad leaves – spinach, kale and rainbow chard
1 cup finely shredded carrot
Dill sprigs
½–1 tbsp caramelised balsamic vinegar

To make the patties, place the breadcrumbs into a mixing bowl. Add sardines, onion, dill, lemon zest and egg and mix well. Shape into four even patties. (The mixture should be easy to handle, if it is too soft, mix in a little wholemeal flour.) Place flour on a flat plate and coat patties, one at a time, well with flour. • Heat the oil in a non-stick frying pan over a medium heat and cook the cakes until golden on each side and cooked through, 8–10 minutes. • To make the salad, combine the salad leaves, carrot, dill sprigs and vinegar. Serve the patties with lemon wedges and salad on the side.

Per serve
1900kJ/ 450 calories; 33g protein; 24g fat (includes 4g saturated fat; saturated: unsaturated fat ratio 0.2); 25g available carbs; 6g fibre 408mg sodium

GOOD FAMILY FOOD

Tasty, nourishing, sustaining, easy to prepare and not hard on the wallet: Anneka’s family fare ticks all the right boxes.
EASY BAKED CRISPY FISH PIECES

Get everyone tucking into veggies and wholegrains with Anneka Manning’s recipe from The Low GI Family Cookbook (Hachette Australia). It’s on the table in 20 minutes and usually has them lining up for seconds.

Serves: 4 • Preparation time: 10 minutes • Cooking time: 10 minutes

2 tbsp plain flour
freshly ground black pepper, to taste
1 egg, lightly whisked
2 tbsp reduced fat milk
1 cup firmly packed grainy breadcrumbs (from day-old grainy bread), toasted (see tip)
½ cup finely shredded parmesan (optional)
450g (1lb) boned skinless white fish fillets
olive oil cooking spray

Preheat oven to 220ºC (425ºF/Gas 7) and line an oven tray with non-stick baking paper. • Spread the flour on a plate and season with pepper. Use a fork to whisk together the egg and milk in a shallow bowl. Combine the breadcrumbs and parmesan, if using, and spread on a plate. • Cut each fish fillet into manageable portions. Lightly dust the fish pieces with flour. Dip into the egg mixture, allowing any excess to drip off, and then coat well in the breadcrumb mixture, pressing the crumbs firmly so they stick. Place the coated fish pieces on the lined tray. • Lightly spray both sides of the fish pieces with the olive oil. • Bake for 10 minutes or until golden, crisp and just cooked through, turning the pieces over halfway through cooking time. • Serve immediately with salad or veggies and hummus or guacamole.

Per serve (adult)
1100kJ/ 260 calories; 31g protein; 8g fat (includes 3g saturated fat; saturated : unsaturated fat ratio 0.6); 17g available carbs (includes 2g sugars and 15g starch); 1g fibre; 350mg sodium

Cook’s tip
To toast breadcrumbs: spread crumbs on an oven tray and bake in an oven preheated to 180ºC (350ºF/Gas 4) for 5–8 minutes or until golden. Cool on the tray.

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

GLYCEMIC INDEX FOUNDATION NEWS

A POCKETFUL OF RYE

Step out of your wheaty comfort zone and try rye bread. It has all sorts of good nutrition things going for it in the vitamin and mineral department and many rye breads are low or lower GI. You’ll find there’s plenty of choice from traditional rye breads made with a sourdough method to dark rye breads made with wholegrain rye flour and light rye breads which are a mixture of rye and wheat
flours. Breads like pumpernickel are made wholly from rye flour. The Burgen rye breads widely available in Australia carry the low GI Symbol.

- **Bürgen Rye® with RyePlus™ bread** is a wholegrain moist bread specifically developed to help support digestive health (keep you regular). It's made with wheat flour and kibbled rye and/or triticale (16%). Delicious fresh, toasted or topped with cream cheese and salmon for a Nordic snack.
- **Bürgen® Fruit & Muesli Bread** is a deliciously moist grainy bread, baked with a combination of wholegrains (kibbled rye, rolled oats, kibbled wheat), dried fruits (sultanas, dried apricot, dried apple) and sunflower seeds. A perfect way to start the day.

As for flavour, you’ll find rye bread is the perfect match for salmon or ocean trout with a touch of dill when you tuck into these rye crostinis the team at Burgen Australia have created. (Recipe and image kindly provided by George Weston Foods.) Serves 4.

**Ingredients – 8 slices of Bürgen Rye bread (crusts removed)**

**Herbed goats curd:** 1 cup goats curd • 2 tbsp chopped walnuts • 1 stick celery, finely diced • 1 tbsp chopped chives • watercress (topping)

**Ocean trout:**
4 slices of smoked ocean trout – cut into strips • 4 tbsp light cream cheese • 1 tbsp baby capers • Dill to garnish

**Method** – For the goats curd topping, mix goats curd, walnuts, celery and chives. • Spread 4 slices of bread with goats curd mix. Cut into quarters and top with watercress. • For the ocean trout, spread cream cheese over 4 slices of bread. Top with ocean trout strips, baby capers and chives.

**5 WHOLEGRAIN RYE FOODS FROM THE GI DATABASE**

The database has four pages of rye products, but many were tested over 20 years ago and may not be on the market any more. We have picked out a range of recently tested products to encourage you to add a pocketful of rye to your life.

<table>
<thead>
<tr>
<th>SERVING: TYPICAL PORTION – about 30–40 grams</th>
<th>SERVING: PER 100 GRAMS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Rye kernels (berries), ¼ cup cooked</strong></td>
<td>GI 34</td>
</tr>
<tr>
<td><strong>Bürgen Rye® with RyePlus™ bread made by George Weston Foods (1 slice/42g)</strong></td>
<td>53</td>
</tr>
<tr>
<td><strong>Burgen Fruit and Muesli bread made by George Weston Foods (1 slice/42g)</strong></td>
<td>53</td>
</tr>
<tr>
<td><strong>Van der Meulen Pumpernickel Wholegrain Rye bread (1 slice/50g)</strong></td>
<td>49</td>
</tr>
<tr>
<td><strong>Monster Muesli Multigrain Porridge (rolled oats, wheat, triticale, rye, barley and rice). ½ cup (60g) cooked (with water)</strong></td>
<td>55</td>
</tr>
</tbody>
</table>

Check out the [GI database](#) for the GI values of more rye foods. To search for a food, just enter the name such as “rye bread”.
Dianna Crisp is the Communications and Partnership Manager at the Glycemic Index Foundation, a not-for-profit, health promotions charity. Email on info@gisymbol.com

For more on the GI Foundation go to www.gisymbol.com, like us on Facebook or follow us on Twitter.

THE UNIVERSITY OF SYDNEY

In this section we will be covering all you need to know about GI Testing, the partnership with the Glycemic Index Foundation and their initiatives including the GI Symbol Program and CSIRO Total Wellbeing Diet including the new Slimtember initiative. We have also included links to The Boden Institute at the University of Sydney for any readers who are based in Sydney and are interested in taking part in clinical trials.

GLYCEMIC INDEX TESTING

The Sydney University GI Research Service (SUGiRS) has provided a reliable commercial GI testing service for over 20 years. Food samples are tested in healthy volunteers according to international standardised methods. Testing of foods for their glycemic index, insulin index, satiety response, and other metabolic parameters can be assessed simultaneously. SUGiRS also works with companies to help them develop new low GI products or help lower the GI of existing products. Other analyses such as in vitro GI testing and siaclic acid measurement are available.

- Principal researchers/consultants: Professor Jennie Brand-Miller, SUGiRS Manager Fiona Atkinson, PhD.
- Email: sugirs.manager@sydney.edu.au

BODEN INSTITUTE UNIVERSITY OF SYDNEY CLINICAL TRIALS

The Boden Institute, a joint initiative of the Faculties of Health Sciences, Medicine, and Science at the University of Sydney, regularly recruits participants for a range of clinical trials. If you live in the Sydney (Australia) metropolitan area and would like to find out about participating in clinical research, please visit:

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

GLYCEMIC INDEX FOUNDATION

The Glycemic Index Foundation (GIF), a not-for-profit health promotion charity supported by the University of Sydney and JDRF (Australia), provides a range of health education materials and tools. Key programs include the GI Symbol program, GI News and the CSIRO Total Wellbeing Diet.
THE GI SYMBOL PROGRAM

This certified symbol identifies foods that have been GI tested following the international standardised method. Manufacturers pay the GI Foundation a licence fee to use the symbol on their products and this income is channelled back to education and research. To earn certification, foods must be a good source of carbohydrate and meet a host of other nutrient criteria including total carbohydrate (to limit glycemic load), kilojoules (calories), total and saturated fat, sodium (salt), and when appropriate, dietary fibre and calcium. You can download the Product Eligibility and Nutrient Criteria here.

If you are a food company or retailer and you have a product that you think may be eligible to carry the GI Symbol, we’d love to hear from you.
- Email Dianna Crisp on info@gisymbol.com
- Website: www.gisymbol.com
- Facebook
- Twitter

THE TOTAL WELLBEING DIET ONLINE

The GI Foundation has partnered with the CSIRO to provide the new, personalised 12-week online Total Wellbeing Diet weight-loss program that includes a wide range of low GI carbohydrate foods and meals. The program offers:

- 12 weeks of membership
- Over 1000 delicious and family-friendly recipes
- Online tools to help track your progress
- Weekly tutorials from CSIRO and Glycemic Index Foundation experts
- Step-by-step exercise programs
- Optional home delivery of your meal plan groceries with Woolworths online

For more information, visit: Total Wellbeing Diet.

The CSIRO Total Wellbeing Diet has launched a new initiative, ‘Slimtember’, a four-week campaign commencing September 5 encouraging Australians to lose some weight and improve their health by following the CSIRO Total Wellbeing Diet online, while helping to raise money for JDRF Australia (Juvenile Diabetes Research Foundation). Registration costs $69, which includes the Slimtember kit and a $10 donation to JDRF Australia. The kit includes:

- One month’s membership to the Total Wellbeing Diet online
- Slimtember Get Started booklet and recipes
- Four weeks’ worth of meal plans
- $10 online shopping voucher.

To register or find out more visit www.slimtember.org