



January 2019

GI News is published online every month by the University of Sydney, School of Life and Environmental Sciences and the Charles Perkins Centre, and delivered to the mailboxes of our 97,000 subscribers. Our goal is to help people choose the high-quality carbs that are digested at a rate that our bodies can comfortably accommodate and to share the latest scientific findings on food and diet with a particular focus on carbohydrates, dietary fibres, blood glucose and the glycemic index.

Publisher: Professor Jennie Brand-Miller, PhD, AM, FAA, FAIFST, FNSA

Editor: Philippa Sandall

Scientific Editor/Managing Editor: Alan Barclay, PhD, APD, AN

Social Media: Natasha Williams

Contact: ginewsfeedback@gmail.com

Join us on: 

Sydney University Glycemic Index Research Service

Manager: Fiona Atkinson, PhD, APD, AN

Contact: sugirs.manager@sydney.edu.au

FOOD FOR THOUGHT

AN EMPTY HOUSE IS BETTER THAN A BAD TENANT

Farts. Flatus. Wind. Gas. Whatever you call it, everyone does it. It's a natural part of life. Don't hold back. Here, Clare Collins, Professor in Nutrition and Dietetics, University of Newcastle shares some facts about flatus (and what happens when you try to hold on) in a piece first published in The Conversation (Australian edition) entitled "What Happens When You Hold in a Fart".

THE CONVERSATION

Flatus, farts and breaking wind refer to intestinal gases that enter the rectum due to the body's usual gastrointestinal processes of digestion and metabolism and then leave via the anus. As your body digests food in the small intestine, components that can't be broken down move further along the gastrointestinal tract and eventually into the large intestine called the colon. Intestinal bacteria break down some of the contents by fermentation. This process produces gases and by-products called fatty acids that are reabsorbed and used in metabolic pathways related to immunity and preventing disease development. Gases can either be reabsorbed through the gut wall into the circulation and eventually exhaled through the lungs or excreted via the rectum, as a fart.



HOW MUCH GAS IS NORMAL? It can be challenging for researchers to get people to sign up for experiments that measure farts. But thankfully, ten healthy adults volunteered to have the amount of gas they passed over a day quantified. In a 24-hour period all the flatus they expelled was collected via a rectal catheter (ouch). They ate normally but to ensure a boost in gas production they also had to eat 200 grams (half a large can or 7oz) of baked beans. The participants produced a median total volume of 705ml (24fl oz) of gas in 24 hours, but it ranged from 476ml (16fl oz) to 1490ml (50fl oz) per person. Hydrogen gas was produced in the greatest volume (361ml/12fl oz over 24 hours), followed by carbon dioxide (68ml over 24 hours). Only three adults produced methane, which ranged from 3ml over 24 hours to 120ml (4fl oz) over 24 hours. The remaining gases, thought to mostly be nitrogen, contributed about 213ml (7fl oz) over 24 hours. [Imperial measure conversions rounded.]

Men and women produced about the same amount of gas and averaged eight flatus episodes (individual or a series of farts) over 24 hours. The volume varied between 33ml (1fl oz) and 125ml (4fl oz) per fart, with bigger amounts of intestinal gas released in the hour after meals. Gas was also produced while they were asleep, but at half the rate compared to during the day (median 16ml/½fl oz per hour versus 34ml/1fl oz per hour).

FIBRE AND FLATUS What happens to intestinal gas production when you put people on a high-fibre diet? Researchers got ten healthy adult volunteers to eat their usual diet for seven days while consuming 30 grams (1oz) of psyllium a day as a source of soluble fibre, or not. In the psyllium week, they were asked to add 10 grams – about one heaped tablespoon – to each meal. At the end of each week, the participants were brought into the lab and, in a carefully controlled experiment, had an intra-rectal catheter inserted to quantify how gas (in terms of gas volume, pressure and number) moved through the intestine over a couple of hours. They found the high psyllium-fibre diet led to longer initial retention of gas, but the volume stayed the same, meaning fewer but bigger farts.

WHERE DO THE GASES COME FROM? Gas in the intestines comes from different sources. It can be from swallowing air. Or from carbon dioxide produced when stomach acid mixes with bicarbonate in the small intestine. Or gasses can be produced by bacteria that are

located in the large intestine. While these gases are thought to perform specific tasks that impact on health, producing excessive intestinal gas can cause bloating, pain, rumbling sounds (borborygmus), belching and lots of farts.

The smelliest farts are due to sulphur containing gases. This was confirmed in a study of 16 healthy adults who were fed pinto beans and lactulose, a non-absorbable carbohydrate that gets fermented in the colon. The odour intensity of flatus samples was evaluated by two judges (pity them). The good news was that in a follow-up experiment, the researchers identified that a charcoal-lined cushion was able to help quash the smell of the sulphur gasses.

HOLDING ON TO A FART Ever been in a situation where passing wind is going to be hugely embarrassing and you've had to hold in a fart? Let's face it – we all have. Trying to hold it in leads to a build-up of pressure and major discomfort. A build-up of intestinal gas can trigger abdominal distension, with some gas reabsorbed into the circulation and exhaled through your breath. Holding on too long means the build-up of intestinal gas will eventually escape via an uncontrollable fart. The research is not clear on whether the rise in pressure in your rectum increases your chance of developing a condition called diverticulitis, where small pouches develop in the gut lining and become inflamed – or whether it doesn't matter at all.

GI team: "Where 'ere you be let your farts go free" is what our Dads used to say and they were right. It's best for health. Just say "Beg pardon."

Read more:

- [Inhibitory actions of a high fibre diet on intestinal gas transit in healthy volunteers](#)
- [Investigation of normal flatus production in healthy volunteers](#)
- [What happens when you hold in a fart?](#) *The Conversation*
- [The Conversation](#)

WHAT'S NEW?

FOODS THAT MAY CAUSE GAS

The International Foundation for Functional Gastrointestinal Disorders (a non-profit) is a handy website to head over to if you are looking for reliable digestive health knowledge, support, and assistance about functional gastrointestinal (GI) and motility disorders (FGIMDs). Here's a slightly edited version of what they say about the foods that cause gas.

Most foods that contain carbohydrates (sugars, starches and dietary fibres) can cause gas. By contrast, fats and proteins cause little gas (although certain proteins may intensify the odour of gas).



SUGARS The sugars that cause gas are raffinose, lactose, fructose, and sorbitol.

- **Raffinose** — Beans contain large amounts of this complex sugar. Smaller amounts are found in cabbage, Brussels sprouts, broccoli, asparagus, other vegetables, and whole grains.
- **Lactose** — Lactose is the natural sugar in milk. It is also found in milk products, such as yoghurt and ice cream, and processed foods, such as bread, cereal, and salad dressing. Many people, particularly those of African, Native American, or Asian background, have low levels of the enzyme lactase needed to digest lactose. Also, as people age, their enzyme levels decrease. As a result, over time people may experience increasing amounts of gas after eating food containing lactose.
- **Fructose** — Fructose is naturally present in onions, artichokes, pears, and wheat. It is also used as a sweetener in some foods and drinks.

POLYOLS (SUGAR ALCOHOLS)

- **Sorbitol** — Sorbitol is a sugar found naturally in fruits, including apples, pears, peaches, and prunes. It is also used as an alternative sweetener in many dietetic foods and sugar-free candies and gums. (GI eds: It's not the only polyol that can cause gas. Isomalt, lactitol, maltitol, maltitol syrup, and mannitol do too. You won't find most polyols on the supermarket shelf. They are primarily used by the food industry as sugar substitutes, so read the ingredient panel on packaged foods.)

STARCHES Most starches, including potatoes, corn, noodles, and wheat, produce gas as they are broken down in the large intestine. Rice is the only starch that does not cause gas.

FIBRE Dietary fibre is carbohydrate that is indigestible in the small intestine and reaches the colon relatively intact. In the colon, certain bacteria digest fibre (fermentation), which produces gas. Dietary fibre can be classified as either soluble or insoluble.

- Soluble fibre dissolves in water and becomes a soft gel. It is found in oat bran, beans, barley, nuts, seeds, lentils, peas, and most fruits.
- Insoluble fibre does not dissolve or gel in water. It absorbs liquid and adds bulk to stool. Cellulose (found in legumes, seeds, root vegetables, and vegetables in the cabbage family), wheat bran, and corn bran are examples of insoluble fibre.

High fibre substances containing both soluble and insoluble fibres have the properties of both. They include oat bran, psyllium, and soy fibre. Methylcellulose is a semi-synthetic fibre. It is soluble and gel forming, but not fermentable.

The solubility and fermentation of a particular fibre affects how it is handled in the GI tract. However, the effect of identical fibres varies from person to person. A gradual increase in dietary fibre can modify and improve symptoms. But individual responses vary and too much of a type of fibre can worsen symptoms. It may be necessary to try different types of fibre. With any dietary fibre it is best to start out low and go slow.

Read more

- [International Foundation of Gastrointestinal Disorders: Controlling Intestinal Gas](#)

BRING ON THE BEANS

A 3-month randomised controlled trial with a group of 121 people with type 2 diabetes by Dr David Jenkins and colleagues found consuming about 1 cup (190g or 7oz) of cooked legumes (beans, chickpeas or lentils) helped people with diabetes manage their blood glucose and reduce their heart disease risk through a reduction in blood pressure. After three months, hemoglobin A1c levels had dropped from 7.4% to 6.9% in people eating beans, while it had fallen from 7.2% to 6.9% in those getting extra whole wheat. Even though the drops were not huge says Jenkins, they were impressive in part because the whole-grain comparison diet is a healthy one and in part because people in the study were already on diabetes and blood pressure medications. “We hope that this could be the point that allows a person with diabetes to delay medication use,” he said.



What about wind? The study didn't find any more gastrointestinal complaints in the legume group, although the comparison group also got a lot of fibre, which could have drowned out a potential effect.

Read more

- [Effect of Legumes as Part of a Low Glycemic Index Diet on Glycemic Control and Cardiovascular Risk Factors in Type 2 Diabetes Mellitus: A Randomized Controlled Trial](#)

THE FIBER–FODMAP CONTROVERSY

In an article in *Cereal Foods World*, Prof Fred Brouns and colleagues discuss whole grain foods and their contribution of significant amounts of dietary fibers that are crucial for optimizing gut health. Here we post their key points summary of what is known and what is new/needs attention.



WHAT IS KNOWN

- Dietary fibers and prebiotics are important for gut health and function, and increased consumption is generally recommended.
- Avoidance of FODMAPs (nondigestible, rapidly fermentable carbohydrates) is being recommended for persons suffering from irritable bowel syndrome to alleviate abdominal distress due to intestinal gas production and fluid shifts that lead to bloating.
- Small osmotic effects and gas formation are normal processes in a healthy gut and are not disease symptoms.
- Cereals contain small quantities of rapidly fermentable carbohydrates.

WHAT IS NEW/NEEDS ATTENTION

- Avoidance of fermentable dietary fibers may impair favorable gut flora metabolism, gut function, and health.
- Eliminating grains from the diet to avoid FODMAPs means also eliminating a wide range of other components that are known to be beneficial.
- Increasingly FODMAP-free foods are being marketed and promoted to the general public and the hype surrounding them seems to be increasing.
- Avoidance of FODMAPs to relieve intestinal discomfort is only recommended on an individual basis and under medical/dietetic supervision.

Read more:

- [The Dietary Fibers–FODMAPs Controversy](#)

PERSPECTIVES: DR ALAN BARCLAY

FABULOUS FIBRES

Most of us know that dietary fibre is good for our health and wellbeing. Many of the health benefits we obtain from consuming dietary fibre occurs when dietary fibres pass through to our large bowel (intestine), and are digested by the trillions of microorganisms that form our microbiome, converting the indigestible carbohydrate in to important fuels (e.g., fatty acids like butyrate), gases (e.g., hydrogen), and providing the bulk so important for laxation.



WHAT EXACTLY IS DIETARY FIBRE? The United States [Food and Drug Administration](#) recently narrowed its definition of dietary fibre to: “non-digestible soluble and insoluble carbohydrates (with 3 or more monomeric units), and lignin that are intrinsic and intact in plants” and “isolated or synthetic non-digestible carbohydrates (with 3 or more monomeric units) determined by FDA to have physiological effects that are beneficial to human health.” “such as lowering blood glucose and cholesterol levels, increasing feelings of fullness (satiety) resulting in reduced calorie [kilojoule] intake, and improving bowel function.”

To-date, the list of isolated or synthetic fibres that have been assessed and classified as fibre by the FDA includes:

- B-glucan soluble fibre
- Psyllium husk
- Cellulose
- Guar gum
- Pectin
- Locust bean gum
- Hydroxypropylmethylcellulose
- Arabinoxylan
- Alginate
- Inulin and inulin-type fructans
- High amylose starch (resistant starch 2)
- Galactooligosaccharide
- Polydextrose
- Resistant maltodextrin/dextrin

Both intrinsic and isolated fibers are currently grouped together as “Dietary Fibre” in the USA’s Nutrition Facts panel.

WHAT ARE THE DIFFERENT TYPES OF FIBRES INTRINSIC TO PLANTS AND WHAT ARE THEIR FUNCTION? While we are generally advised to “eat more fibre”, there are many [different types of dietary fibres](#) that occur naturally in plant foods, and they don’t all have the same effect on our health. Here’s a summary of the intrinsic/intact fibres in our foods and their primary function:

FIBRE	DESCRIPTION	CLASS	EFFECT	SOURCE
Cellulose	The major cell-wall component of plants, they are chains of glucose with β -1,4 linkages (indigestible by humans)	Insoluble	Laxation	About a quarter of the dietary fibre in cereal grains and fruits, and one third in vegetables and nuts.
Hemicellulose	High branched chains of glucose, xylose, galactose, mannose, arabinose and other sugars with β -1,4 and β -1,3 linkages (indigestible by humans)	Insoluble and soluble forms	Laxation	Cereal grains
B-glucan	Chains of glucose with β -1,3 and β -1,6 linkages (indigestible by humans)	Soluble	Lowers blood cholesterol Improves blood glucose	Barley (5–11 %), oats (3–7 %) and sorghum (1.1–6.2 %)
Pectin	Chains of galacturonic acid (indigestible by humans)	Soluble	Lowers blood cholesterol	Fruit, vegetables, legumes and nuts
Gums and mucilages	Complex chains of galactose, mannose, arabinose, xylose and other sugars (indigestible by humans).	Soluble	Lowers blood cholesterol	Derived from plant exudates, seeds and seaweed extracts
Lignin	The only type of fibre that isn’t a carbohydrate, it consists of chains of phenylpropane (indigestible by humans).	Insoluble	Laxation Antioxidant	Foods with a “woody” component, e.g., celery and the outer layer of cereal grains.

HOW MUCH FIBRE DO WE NEED? It is generally agreed we need at least 3.3 g of fibre for every 1000kJ (240 calories) of energy we consume each day. This equates, on average, to:

- Children aged 1–3 – 14g a day
- Children aged 4–8 – 18g a day
- Boys aged 9–13 – 24g a day
- Boys aged 14–18 – 24g a day
- Girls aged 9–13 – 20g a day
- Girls aged 14–18 – 22g a day
- Men aged over 19 – 30g a day
- Women aged over 19 – 25g a day

HOW MUCH DO WE GET? Few of us get this because most of us don't eat enough of the natural sources of dietary fibre like fruit, vegetables, legumes and wholegrains each day.

- In the USA in 2010, people consumed an average of 2.0g per 1000kJ (240 calories), or 16g per day.
- In Australia, people consumed around 2.5g per 1000kJ (240 calories) and fibre intakes appear to be dropping, from 23.1g per day in 1995 to 22.9g in 2011/12 likely thanks to the popularity of fad diets (e.g., low fructose; gluten free; low-carbohydrate diet) that are typically lower in fibre.

THE TAKE-HOME There's much more to dietary fibres than laxation. Tuck in. Enjoy a variety of fibres from a wide range of wholegrains, legumes, fruits and vegetables for your long-term good health and wellbeing.



Alan Barclay PhD is a consultant [dietitian](#). He is author of *Reversing Diabetes* (Murdoch Books), and co-author of 30-plus scientific publications, *The Good Carbs Cookbook* (Murdoch Books), *Managing Type 2 Diabetes* (Hachette Australia) and *The Ultimate Guide to Sugars and Sweeteners* (The Experiment Publishing). Follow him on [Twitter](#) or check out his [website](#).

KEEPING IT GREEN – EATING FOR BODY AND PLANET

A GREENER NEW YEAR IN THE KITCHEN

New Year is a good time for fresh starts and resolutions. How about adopting environmentally friendly habits for 2019? Looking after our planet is a gift that keeps on giving throughout the year and beyond, and after all, it's the only one we've got.

BUY SUSTAINABLE FOOD Choose locally grown, in-season, plant-based foods with minimal packaging. Foods that are not in season have been transported further, producing more greenhouse gases. Choose more [plant-based foods as they have a smaller environmental impact](#) than meat, dairy and eggs. Why not visit your farmers market for the best local and seasonal produce and support local agriculture? Buy fruits and vegetables without plastic packaging – Mother Nature already gave them compostable packaging. Bring your own re-usable bag and skip the receipt if you have no intention of returning your purchases.

REDUCE YOUR FOOD WASTE Food rescue charity *Oz Harvest* reports that a massive [one-third of all food produced globally is wasted](#)! Make a habit of planning your meals each

week, buying only what you need and saving your hard-earned money from going to waste. Even better, cook a few plant-based meals on the weekend and freeze them in reusable storage containers to have quick, healthy and sustainable meals on hand for days when you get home late. Invest in some good glass or metal storage containers with lids instead of covering food with plastic wrap. Or clean old peanut butter jars or spaghetti sauce jars and use them to store foods like overnight oats or baked beans. If you are time poor and tend to drop by the local supermarket and pile the trolley on the way home, investigate subscription food boxes or meal delivery services, many of them feature fresh locally grown foods. Choice magazine reviews Australian offerings [here](#).

BE AN ECO-FRIENDLY DINER Disposable plastic plates, cups, straws and cutlery are used for only a few minutes but ultimately spend hundreds of years in landfill. Cutting down on single-use plastic is one of the easiest ways to reduce waste. When eating out, choose to dine inside the restaurant using real reusable tableware rather than ordering take away. If you must have your food on the run, let the restaurant know you don't require straws, plastic cutlery, napkins, moist towelettes and plastic bags. Keep a reusable coffee cup, water bottle and metal 'spork' in your bag instead of using disposables. Leave a reusable plate at work.



BE A BETTER RECYCLER Most of us are already using our council recycling bins to recycle glass and plastic bottles, aluminium cans and paper. But if you have a garden, there are more materials that you can divert from landfill. Fruit and vegetable scraps, tea, corks, eggshells, newspaper and tissues don't breakdown properly in landfill, but they can be composted! Keep a mini compost bin in your kitchen for easy access; when full, transport it to a larger compost bin or worm farm outdoors where it will eventually turn into free garden fertiliser.

Keep a bag handy in your kitchen or garage and fill it with any soft plastics that can be scrunched into a ball such as bread bags, plastic toilet paper wrapping and rice bags. When full, take it to a supermarket that has a soft plastic collection bin to be recycled. If you are in Australia, Canada or the US, set up some boxes in your garage to collect used cosmetics containers, coffee capsules, toothpaste tubes and postal bags, when full post them to a company like [TerraCycle](#) so they can be recycled and used to make park benches and other useful things.

HERE'S A TIP TO HELP YOU STICK WITH YOUR RESOLUTIONS The problem with New Year resolutions is that they all too often fall by the wayside as willpower fades. The key to sticking with them is to create habits you can do on autopilot. Remember that every change starts with a single step, so start with one goal at a time. Once it becomes second nature, choose another. Lose that "all-or-nothing" mindset. And don't over-commit.

Greener Resolutions in a Nutshell

- To make your resolutions stick, create habits rather than relying on willpower.
- Try one new change at a time rather than an 'all-or-nothing' approach.
- Avoid food waste.
- Avoid single-use disposable plastics.
- Recycle as much as you can.

Happy New Year!

Thanks to Rachel Ananin aka TheSeasonalDietitian.com for her assistance with this article.



In this series we explore how you can reduce your ecological impact through your food choices. We'll help you do your bit for the environment, one mouthful at a time.

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.

Contact: You can follow her on [Twitter](#), [Facebook](#), [Pinterest](#), [Instagram](#) or check out her [website](#).

GOOD CARBS FOOD FACTS A TO Z

RED KIDNEY BEANS

Dietitian Nicole Senior is such a fan of red kidney beans, we asked her to share the facts in this month's Good Carbs Food Facts A to Z.

Raw red kidney beans (*Phaseolus vulgaris*) are beautiful. Their deep dark colour is delightful and their smooth rounded edges are pleasing to touch – they remind me of little river pebbles hewn by perpetual flowing water. And, in a wooden box or plastic container, they make great DIY maracas for your family band. As well as the dark brownish-red variety, there are also a couple of speckled varieties that look gorgeous and remind me of little wild bird's eggs.



They are rich in the trace element molybdenum, high in fibre – including soluble fibre that helps lower bad LDL cholesterol and modulate blood glucose response – and a good source of protein, folate, manganese and copper. They also contain iron, B-vitamins, potassium and magnesium. As well as being rich in nutrients, kidney beans also contain an array of phytochemicals including phenolic compounds with anti-inflammatory and antioxidant effects. And to top it all off, they have a low GI (36 for canned kidney beans; 51 for home-cooked dried beans). It is perhaps not surprising that eating legumes regularly is associated with reduced risk of cardiovascular disease, probably due to their ability to lower bad LDL cholesterol, but they have also been shown to reduce blood pressure in clinical studies. Like all legumes, kidney beans walk the line between two food groups, being both vegetables and meat alternatives. A serving is half a cup of cooked beans.

Red kidney beans are great in soups, stews, curries and salads. They feature in many well-known dishes around the world such as *chilli con carne* in Latin America, *rajma* in India and Pakistan, and *red beans and rice* in Creole cuisine of Southern USA. They give great texture and colour to salsas and dips, are a frugal filling for wraps, and give starchy satisfaction to salads. They go wonderfully with corn, spices and avocado, and are expert extenders of one-pot meat meals (such as chilli beef) to reduce the amount of meat and add health benefits.

What about wind? The main culprits are their large indigestible sugars (raffinose, stachyose and verbascose). They zip through the digestive system and arrive in the large bowel intact where the resident healthy bacteria enthusiastically ferment them and feast. The bad news: gas. The good news: these indigestible sugars are water soluble. If you are cooking from scratch, rinsing and soaking before cooking dried beans helps wash them away. If you opt for canned convenience, rinse beans well before using. Here are some handy tips on cooking beans from scratch from *The Good Carbs Cookbook*.

CLEAN Pick through the dried beans, discarding discoloured or shrivelled ones.

RINSE several times and then swirl them around in a bowl of cold water discarding any floaters.

SOAK Beans and peas will double or triple in size depending on which soaking method you use so it's important to use a large enough container.

- **Cold soak** – Pour room temperature water over beans to cover and soak for 8 hours or overnight. Discard the soaking water and rinse beans in fresh cool water. Cold water starts but does not complete the rehydration process so they will appear wrinkled after soaking. They will fully hydrate during cooking.
- **Quick soak** – The warmer the water the faster the beans absorb it. This method reduces cooking time and produces consistently tender legumes. Put beans in a large pot and add 4 cups of water for every 1 cup of legumes. Bring to boil, reduce the heat and gently simmer for 10 minutes. Remove the pot from the heat, cover, and let stand for 1 hour. Drain and rinse with fresh cool water before cooking.

COOK – STOVETOP For 1 cup of legumes allow 3–4 cups of water or stock. In general, for every 1 cup dried legumes you should get 2–2½ cups of cooked legumes. Cooking time

depends on the type of bean.

- Keep the cooking water at a gentle simmer to prevent split skins.
- Add warm water periodically during cooking to keep the beans covered.
- Stir the beans occasionally to prevent sticking.
- They are done when they are tender, but not mushy. Check by either biting one for tenderness or pressing between your thumb and forefinger when it will break up easily.
- Drain immediately they reach the desired tenderness to stop the cooking process and prevent over-cooking.
- Hold the seasonings until the end of cooking. Acidic ingredients such as lemon juice, vinegar, wine or tomato sauce prevent softening, so don't add them until the beans are tender.

COOK – PRESSURE COOKER Use about 2½ cups of water per 1 cup of soaked beans and cook for about 20 minutes (following the manufacturer's instructions for cooking beans in the pressure cooker). Make sure the pressure cooker is no more than half full of ingredients including cooking liquid.

Good Carbs Food Facts	
Red kidney beans	
★ ★ ★ ★ ★	
Glycemic index 51 (home-cooked beans)	
Gluten free	
Serving size – ½ cup cooked beans	
Kilojoules	355
Calories	84
Protein	7g
Fats – Total	0.5g
Includes:	
–Saturated fat	0.01g
–Unsaturated fat	0.49g
–Cholesterol	0g
Saturated : unsaturated fat ratio	0.0
Carbohydrates – Total	15g
<i>Available</i>	8.5g
Includes:	
--Natural sugars	0.5g
–Natural starches	8g
–Added sugars	0g
–Added starches	0g
<i>Unavailable</i>	6.5g
Includes:	
–Dietary fibre	6.5g
Sodium	7mg
Potassium	268mg
Sodium : potassium ratio	0.03

Glycemic load	4
Diabetes exchange	½
Ingredients: Beans	

IN THE GI NEWS KITCHEN

ANNEKA MANNING: BAKECLUB



Aneka Manning – author, food editor, home economist, mother of two and the founder of BakeClub – specialises in teaching the ‘why’ behind the ‘how’ of baking, giving home cooks the know-how, understanding and skill to bake with confidence and success, every time. She has written and contributed to a number of books, including popular titles such as *The Low GI Family Cookbook* (Hachette), and *BakeClass* (Murdoch Books).

TACOS

There’s nothing like Aneka Manning’s tasty tacos to get the family to feast on those budget-friendly, nutrition power packs – beans. To add a little heat to the occasion, add 1 chopped red chilli to the tomato sauce with the red kidney beans and paprika. Aneka 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. Makes 12.



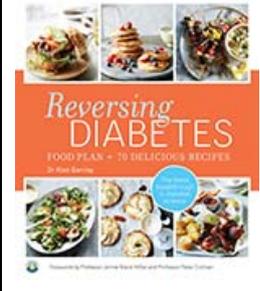
- 2 cups tomato pasta sauce
- 2 x 300g (10oz) cans red kidney beans drained and rinsed
- 1 teaspoon mild paprika
- Freshly ground black pepper, to taste
- 12 taco shells
- ½ iceberg or cos lettuce, shredded
- 2 carrots, scrubbed, coarsely grated
- 1½ cups coarsely grated reduced fat cheddar cheese
- 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; saturated : unsaturated fat ratio 0.7); Available carbohydrate 22 g; Fibre 6 g

REVERSING DIABETES

	<p>The latest research into type 2 diabetes shows that for some people it's possible to put diabetes into remission and for others they can prevent or at least delay the complications of diabetes. <i>Reversing Diabetes</i> published by Murdoch Books explores what these findings mean. Drawing on over 20 years of clinical experience as an Accredited Practising Dietitian, Dr Alan Barclay combines the highest quality evidence about the nutritional management and prevention of diabetes into one easy-to-read book with 70 delicious recipes.</p>
---	---

TARRAGON CHICKEN AND BEANS

Serves 4 • Preparation 15 minutes • Cooking 35 minutes

Olive oil spray

4 x 120g (4oz) boneless, skinless chicken thigh fillets, fat trimmed

2 red onions, cut into wedges

2 celery stalks, sliced

½ cup dry white wine

1 small handful tarragon leaves, plus extra leaves and flowers to serve

2 x 400 (14oz) cans no-added-salt borlotti beans, rinsed and drained

½ cup reduced-fat evaporated milk or equivalent

1 cup frozen peas, thawed

400g/14oz broccolini, steamed

Spray a large heavy-based saucepan with olive oil and place over medium heat. Cook the chicken for 2 minutes on each side or until browned. Transfer to a plate. • Add the onion wedges and celery to the pan and cook, stirring, for 2 minutes or until the onions have softened. Pour in the wine and stir until combined. Return the chicken to the pan, cover and cook for 15 minutes or until the chicken is cooked through. • Add the tarragon leaves, borlotti beans, evaporated milk and peas to the pan and cook for 10 minutes or until the sauce is thickened and heated through. • Sprinkle the chicken and beans with the extra tarragon and serve with the broccolini.

Per serve

2465kJ/586 calories; 50g protein; 12g fat (includes 4g saturated fat; saturated : unsaturated fat ratio 0.5); 63g carbohydrate (includes 10g sugars and 53g starches); 14g fibre; 200mg sodium; 1800mg potassium; sodium : potassium ratio 0.11

YOTAM OTTOLENGHI AND SAMI TAMIMI'S JERUSALEM



Yotam Ottolenghi and Sami Tamimi's *Jerusalem* (Random House) is available from good bookshops and online. "I have to say this cookbook is like having a bible of nutrient-dense, low GI recipes. It makes eating the healthy, low GI way deliciously easy."
– Prof Jennie Brand-Miller.

ROASTED CHICKEN WITH JERUSALEM ARTICHOKE AND LEMON

The combination of saffron and whole lemon goes exceptionally well with the nutty earthiness of the Jerusalem artichokes, a veg that has nothing to do with Jerusalem or globe artichokes. They are sunchokes (and a member of the same family as sunflowers) and their sweetly succulent tubers were cultivated by Native Americans long before any European foot plonked itself down in the New World. They have their devotees, but many people dodge them because their windy reputation is extremely well deserved—they are rich in a soluble fibre called inulin that we can't digest, but our gut bacteria can and do with gusto (and share their enthusiasm). They are so rich in inulin, they are one of the main commercial sources (chicory root is the other). Tip: An easy way to scrape Jerusalem artichokes is to use a teaspoon
Serves 6

450g (about 1lb) Jerusalem artichokes, peeled or scraped and cut into six lengthways (1.5cm/½ in thick wedges)

3 tablespoons (45ml) lemon juice

8 chicken thighs, on the bone with the skin on, or a medium whole chicken, divided into four

12 banana shallots, peeled and halved lengthways

12 large garlic cloves, sliced

1 medium lemon, cut in half lengthways and then into very thin slices

1 teaspoon saffron threads

3 tbsp olive oil

⅓ cup (160ml) cold water

1½ tbsp pink peppercorns, slightly crushed

10g (½oz) fresh thyme leaves

40g (1½oz) tarragon leaves, chopped

2 teaspoon salt

½ teaspoon black pepper



Put the Jerusalem artichokes in a medium saucepan, cover with plenty of water and add half the lemon juice. Bring to the boil, reduce the heat and simmer for 10–20 minutes, until tender but not soft. Drain and leave to cool. • Place the Jerusalem artichokes and all the remaining ingredients, excluding the remaining lemon juice and half of the tarragon, in a large mixing bowl and use your hands to mix everything together well. Cover and leave to marinate in the fridge overnight, or for at least 2 hours.

Preheat the oven to 240°C/220°C (400°F) Fan/Gas Mark 9. • Arrange the chicken pieces, skin-side up, in the centre of a roasting tin and spread the remaining ingredients around the chicken. Roast for 30 minutes. Cover the tin with foil and cook for a further 15 minutes. At this point, the chicken should be completely cooked. • Remove from the oven and add the reserved tarragon and lemon juice. Stir well, taste and add more salt if needed. Serve at once.

Per serve (one chicken thigh)

3375 kJ/ 805 calories; 61g protein; 59.5g fat (includes 18g saturated fat; saturated : unsaturated fat ratio 0.43); 10g available carbs (includes 3.5g sugars and 6.5g starch); 5g fibre; sodium : potassium ratio 0.7

COPYRIGHT AND PERMISSION

This website and all information, data, documents, pages and images it contains is copyright under the Copyright Act 1968 (Commonwealth of Australia) (as amended) and the copyright laws of all member countries of the Berne Union and the Universal Copyright Convention. Copyright in the website and in material prepared by GI News is owned by University of Sydney, School of Life and Environmental Sciences and the Charles Perkins Centre. Copyright in quotations, images from published works and photo libraries, and materials contributed

by third parties including our regular contributors Alan Barclay, Jennie Brand-Miller and Nicole Senior is owned by the respective authors or agencies, as credited.

GI News encourages the availability, dissemination and exchange of public information. You may include a link to GI News on your website. You may also copy, distribute, display, download and otherwise freely deal only with material owned by GI News, on the condition that you include the copyright notice “© GI News, University of Sydney, School of Life and Environmental Sciences and the Charles Perkins Centre” on all uses and prominently credit the source as being GI News and include a link back to www.gisymbol.com/gi-news. You must, however, obtain permission from GI News if you wish to do the following: charge others for access to the work; include all or part of the work in advertising or a product for sale, or; modify the work. To obtain such permission, please contact ginewsfeedback@gmail.com. This permission does not extend to material contributed and owned by other parties. We strongly recommend that you refer to the copyright statements at their respective websites and seek their permission before making use of any such material, whether images or text. Please contact GI News if you are in doubt as to the ownership of any material.

DISCLAIMER GI News endeavours to check the veracity of news stories cited in this free e-newsletter by referring to the primary source, but cannot be held responsible for inaccuracies in the articles so published. GI News provides links to other World Wide Web sites as a convenience to users, but cannot be held responsible for the content or availability of these sites. All recipes that are included within GI News have been analysed however they have not been tested for their glycemic index properties by an accredited laboratory according to the ISO standards.

© ^{®™} The University of Sydney, Australia.