June 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

GOING VEGAN Q&A: OUR EXPERTS ANSWER YOUR QUESTIONS
Dr Neal Barnard, Prof Jennie Brand-Miller, Dr Alan Barclay and Matthew Lore answer the most common questions we are asked about vegan diets.
Whether it’s for better health, a better environment or animal welfare, choosing to go vegan is one of the biggest diet trends. The plant-based/vegan world has exploded in the
last decade, with hundreds of books, many of them major bestsellers says Matthew Lore, whose company, The Experiment Publishing, has published 30+ plant-based/vegan books including #1 NYT bestseller *Forks Over Knives: The Plant-Based Way to Health*.

**WHERE DOES “VEGAN” COME FROM?** “Vegan” was coined by Donald Watson and his wife Dot in 1944 when they launched *Vegan News* which they sent to 25 subscribers in November. He had quit eating meat at the age of 14 after seeing a terrified pig being slaughtered on his uncle’s farm, and later gave up dairy foods. As an adult, finding many others shared his interest in a plant only diet, he produced a magazine. In issue 1 he writes: “We should all consider carefully what our Group, and our magazine, and ourselves, shall be called. ‘Non-dairy’ has become established as a generally understood colloquialism, but like ‘non-lacto’ it is too negative. Moreover, it does not imply that we are opposed to the use of eggs as food. We need a name that suggests what we do eat, and if possible one that conveys the idea that even with all animal foods taboo, Nature still offers us a bewildering assortment from which to choose. ‘Vegetarian’ and ‘Fruitarian’ are already associated with societies that allow the ‘fruits’(!) of cows and fowls, therefore it seems we must make a new and appropriate word. As this first issue of our periodical had to be named, I have used the title *The Vegan News*. Should we adopt this, our diet will soon become known as a VEGAN diet, and we should aspire to the rank of VEGANS.” Donald Watson lived to the age of 95.

**WHAT’S THE DIFFERENCE BETWEEN A VEGAN DIET AND A PLANT-BASED DIET?** “As the *Washington Post* reported in February 2019,” says Matthew Lore, “the rebranding of ‘vegan’ to ‘plant-based’ has been a long time coming. T. Colin Campbell introduced the term ‘plant-based’ in his 2005 book *The China Study*. Campbell, and Cleveland Clinic cardiologist Dr. Caldwell Esselstyn, Jr., are the major intellectual godfathers of the documentary, *Forks Over Knives*, which promotes a ‘whole foods, plant-based’ way of eating that both have long championed. Plant-based and vegan both refer to the same way of eating – but vegan now implies more of an identity with all-things animal-free (of course including eating no animal products whatsoever); whereas plant-based can be deployed pretty much everywhere meat is absent (surely not for nothing does Beyond Meat’s Beyond Burger packaging ID what’s inside as ‘Plant-Based Burger Patties’).”

**DOES A VEGAN/PLANT-BASED DIET HAVE HEALTH BENEFITS?** Yes, says Dr Neal Barnard, author of *Dr Neal Barnard’s Program for Reversing Diabetes*. Vegan diets skip the cholesterol and most of the saturated fat found in animal products, and are richer in fiber and some vitamins. Studies have shown that a low-fat vegan diet has enormous health benefits. “The DASH diet was one of the first studies to put plant-based diets on the map,” says Barnard. “Not that it used a vegetarian or vegan diet, but the DASH investigators openly acknowledged that the study was in large part inspired by the observation that vegetarian diets are associated with lower blood pressure. They modified the diet, partly hoping for broader acceptance, but their work led to more interest in plant-based regimens and what they could achieve.

Dean Ornish’s heart studies (*Lancet* 1900, *JAMA* 1998) were perhaps the next major advance. The regimen was nearly vegan, apart from a small amount of nonfat dairy and egg whites. And it showed that diet changes can do more than fight a battle of attrition; they can reverse disease. David Jenkins showed that it’s not just a question of what one avoids. By emphasizing foods with a low GI and, later, by introducing a portfolio of foods with special lipid-lowering properties, one can really put nutrition to work.
Epidemiologic studies showed that people following vegan diets are slimmer, with healthier cholesterol levels and a much lower risk of type 2 diabetes, compared with meat-eaters, pescatarians, and ovo-lacto-vegetarians.

Our randomized studies on diabetes, especially our *Diabetes Care* article in 2006 (with follow-up in *AJCN* 2009), established vegan diets for managing type 2 diabetes. I would argue that they are the regimen of choice."

**WHAT’S OUT? WHAT IN?** Switching to a vegan/plant-based diet means cutting out all animal products – meat, poultry, seafood, dairy foods, eggs and even honey. What’s in are the good carbs, many of which are low GI – fruit, veggies, legumes (beans, chickpeas and lentils), nuts and seeds, and grains. These plant foods power our brain, fuel our muscles, and provide us with energy, vitamins and minerals. They are also packed with “keep it regular” fibre. However, people following a vegan diet do need reliable sources of vitamin B12, such as fortified foods or supplements, as this vitamin can be difficult to get if meat, milk and eggs are off the menu.

**WHAT ABOUT CALCIUM?** Leafy greens like kale, broccoli and bok choy are rich in absorbable calcium. Fortified plant milks and cereals are good sources of calcium, too. Check the nutrition information panel. Other plant foods providing calcium include firm tofu, almonds, Brazil and pecan nuts, figs, oranges, and kiwi fruits, unhulled tahini, and chickpeas.

**WHAT ABOUT B12?** Found almost exclusively in animal foods, vitamin B12 in vegan diets comes from fortified foods or supplements. Some plant-based milks, like soy milk and almond milk, are fortified with B12. Check the nutrition information panel and choose products that contain 0.4ug (mcg) /100mL of B12. Some meat alternative products are fortified with B12 as are some brands of nutritional yeast. We check out B12 fortified foods in Product Review, and in Perspectives, Dr Alan Barclay discusses vitamin B12.

**WHAT ABOUT IODINE?** Iodine is in short supply for many people – not just those on a vegan diet. Eating sea vegetables is one strategy to ensure you get the iodine you need, and iodized salt makes it a nonissue for those using it.

**WHAT ABOUT IRON?** Iron is abundant in green leafy veggies (spinach, silverbeet/Swiss chard and broccoli); legumes (beans, chickpeas and lentils); nuts and seeds; grains (whole wheat, brown rice, quinoa), and dried fruit. You’ll also find it in fortified breakfast cereals. Check the nutrition information panel.

**WHAT ABOUT OMEGA-3?** When seafood (especially fatty fish) is off the menu, you’ll find the omega-3 you need in plant foods like chia and flax seeds, walnuts, soy beans and oil, wheat germ and green leafy veggies. Our body can convert these plant-based omega-3s to the longer chain form, like the omega-3 found in seafood.

Read More:

- [Physicians Committee for Responsible Medicine: Leading a revolution in medicine that puts a new focus on health and compassion](#)
- [Position of the Academy of Nutrition and Dietetics: Vegetarian Diets](#)
- Pregnant women and babies can be vegans but careful nutrition planning is essential – Prof Clare Collins looks at the nutritional needs of pregnant women and babies and provides sample menu plans
- Forks over Knives and other vegan/plant-based cookbooks from The Experiment Publishing
- PHOTO: Drake Eatery Grilled Eggplant, Macadamia, Ginger Miso, Furikake

WHAT’S NEW?
PLANT-BASED DIETS FOR CARDIOVASCULAR SAFETY AND PERFORMANCE IN ENDURANCE SPORTS
Meat-free athletes – from tennis champion Venus Williams to Formula 1’s Lewis Hamilton to Derrick Morgan of the NFL’s Tennessee Titans – have already proven the performance-boosting power of a plant-based diet. A review recently published in Nutrients adds further evidence that plant-based athletes may benefit from improvements in heart health, performance, and recovery.

“It’s no wonder that more and more athletes are racing to a vegan diet,” says review co-author James Loomis, M.D., M.B.A., medical director for the Barnard Medical Center. “Whether you're training for a couch-to-5K or an Ironman Triathlon, a plant-based diet is a powerful tool for improving athletic performance and recovery.” Dr. Loomis, who is currently training for an Ironman Triathlon, is also featured in The Game Changers, a documentary on vegan athletes. He also served as team internist for the St. Louis Rams and the St. Louis Cardinals.

Plant-based diets play a key role in cardiovascular health, which is critical for endurance athletes. But the review finds that even well-trained athletes are at risk of heart disease. A 2017 study found that 44 percent of middle-aged and older endurance cyclists or runners had coronary plaques. A low-fat, vegetarian diet is the most effective dietary pattern clinically shown to reverse plaque. A plant-based diet also addresses other key contributors to atherosclerosis, including dyslipidemia, elevated blood pressure, elevated body weight, and diabetes.

Because a plant-based diet is typically high in carbohydrates, it may also offer performance advantages. Carbohydrates are the primary energy source during aerobic exercise, and endurance is enhanced by a high-carbohydrate intake. But a 2016 study of Ironman triathletes found that fewer than half reported meeting the recommended carbohydrate intake for athletes training 1–3 hours per day.
The researchers also find that a plant-based diet boosts athletic performance and recovery by increasing blood flow and tissue oxygenation and reducing oxidative stress and inflammation. A varied diet of fruits, vegetables, grains, and legumes, along with a vitamin B12 supplement, provides all of the necessary nutrients an endurance athlete needs, including protein, calcium, and iron.

“Like any endurance athlete, plant-based athletes just need more calories than less active people,’ says review co-author Susan Levin, M.S., R.D., C.S.S.D., a board certified specialist in sports dietetics and director of nutrition education for the Physicians Committee for Responsible Medicine. “And if they are eating a wide variety of nutrient-dense fruits, vegetables, grains, and beans, they will easily meet all of their nutritional needs.”

Read more
• Plant-Based Diets for Cardiovascular Safety and Performance in Endurance Sports

WHAT’S HOT?

PLANT-BASED EATING
For some people, plant-based means a plant-only diet that consists of fruits, vegetables, whole grains, legumes, nuts and seeds and products made from them and excludes all animal products, including meat, poultry, seafood, eggs, dairy products and honey. For others, it’s a diet centred largely around fruits, vegetables, whole grains, legumes, nuts and seeds but spares the hard stop of cutting out animal products. Wholesome plant-based eating whether vegan or omnivore certainly aligns with our goals at GI News encouraging people to tuck into “the good carbs and minimally processed staple foods made from them that are digested at a rate that our bodies can comfortably accommodate.”

The health benefits are measurable. Dr John Sievenpiper of St. Michael's Hospital and his team carried out a systematic review and meta-analysis of 112 randomized control
trials in which people substituted plant proteins for some animal proteins in their diets for at least three weeks. They found: “substituting one to two servings of animal proteins with plant proteins every day could lead to a small reduction in the three main cholesterol markers for cardiovascular disease prevention.” The health benefits could be even greater they said “if people combined plant proteins with other cholesterol-lowering foods such as viscous, water soluble fibres from oats, barley and psyllium, and plant sterols.”

According to consumer research company Mintel, “plant-based” is the hottest trend because it has rebranded “vegan” for the mainstream market – consumers who are willing to eat more vegetables, but not give up meat. New US food and drink products that mentioned “plant-based” grew 268% between 2012 and 2018 they say.

Like many food and diet trends, when opportunity knocks, the market answers with a myriad of processed products of varying nutritional quality. Atlantic Natural Foods plant-based seafood alternative, Loma Linda Tuno in Spring Water, has just arrived on our supermarket shelves. (The Australian product is made in Thailand and distributed by Freedom Foods.) The label on the can tells us it’s a “plant based seafood alternative.” While it may have a “fish flavour”, it’s not really an alternative to seafood if you are eating a vegan diet as it hasn’t been fortified with the B vitamins (including B12) you’ll get in canned tuna.

The take-home? We are fans of a plant-based diet built around good carbs and the minimally processed foods made from them, including products fortified with essential vitamins lacking in vegan diets. With processed foods, be a bit wary. “Vegan” and “plant-based” on the label doesn’t give a product a “health halo”. The food inside can be high in calories (kilojoules), saturated fat (from coconut and other plant fats), added sugars, refined starches and added sodium and low in essential vitamins and minerals. Remember, says dietitian Nicole Senior: “a soy-based frozen dessert may be lower in saturated fat than regular ice cream as the fat predominantly comes from vegetable oils (not cream). However, it’s no lower in calories (kilojoules) and the main ingredient is added sugar. Like ice cream, it’s an occasional treat.”

Read more:
- Effect of Plant Protein on Blood Lipids: A Systematic Review and Meta-Analysis of Randomized Controlled Trials (PDF)
- A Plant-Based Dietary Intervention Improves Beta-Cell Function and Insulin Resistance in Overweight Adults: A 16-Week Randomized Clinical Trial
- The Good Carbs Cookbook
- Nicole Senior looks at processed vegan foods
- Photo: Drake Eatery: Avocado, Lime, Coriander, Char-grilled Sourdough

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<thead>
<tr>
<th>Food Facts</th>
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<tr>
<td>Serving size – 57 grams (2oz)</td>
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<tr>
<td>Kilojoules</td>
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<tr>
<td>Calories</td>
<td>44</td>
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<tr>
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<tr>
<td>Fats – Total</td>
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<tr>
<td>– Saturated fat</td>
<td>0.1g</td>
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<tr>
<td>Carbohydrate - Sugars</td>
<td>2.5g</td>
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<tr>
<td>- Sugars</td>
<td>0g</td>
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</table>
Dietary fibre 2g  
Sodium 170mg  

| Ingredients: Textured soy protein 63%, spring water 35%, Vegan Fish Flavour (Yeast Extract, Maltodextrin, Natural Flavours, Thickener (Gum Arabic), Sunflower Oil, Coconut Oil), Sea Salt (0.2%), Seaweed Powder, Potassium Chloride. |

Source: Loma Linda Tuno in Spring Water distributed in Australia and New Zealand by Freedom Foods Group Trading Pty Ltd. Made in Thailand. Values relate to the solid portion of the content.

PRODUCT REVIEW
5-STAR FOODS BOOSTED WITH B12
We chose three B12 fortified foods for Product Review – So Good Soy Milk (Sanitarium), Vegie Delights Savoury Mince (Life Health Foods), and Wellness Road Nutritional Yeast Flakes (Coles). These 5-star products set the standard for what you should be looking for on the nutrition facts panel of similar B12-fortified plant products. Australia’s Health Star Rating is a front-of-pack labelling system that rates the overall nutritional profile of packaged food and assigns it a rating from ½ a star to 5 stars. It provides a quick, easy, standard way to compare similar packaged foods.

SO GOOD REGULAR SOY MILK
Ingredients: Filtered water, soy protein (3.5%), corn maltodextrin, vegetable oils (sunflower, canola), cane sugar, minerals (calcium, phosphorus, magnesium), acidity regulators (332, 450), antioxidant (ascorbic acid), vitamins (A, B12, D2, B2, B1), natural flavour.
Glycemic Index: 37

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<td>Energy (Calories)</td>
<td>163 Cal</td>
<td>65 Cal</td>
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<tr>
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<td>8g</td>
<td>3.2g</td>
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Fat | 8.8g | 3.5g
---|---|---
–Saturated | 1.0g | 0.4g
–Polyunsaturated | 4.3g | 1.7g
–Mono-unsaturated | 3.5g | 1.4g
Available carbohydrate | 12.8g | 5.1g
–Sugars | 5.0g | 2.0g
Sodium | 100mg | 40g
Potassium | 363mg | 145mg
Vitamin A | 100mcg | 40mcg
Riboflavin (vitamin B2) | 0.43mg | 0.17mg
Vitamin B12 | 1.0mcg | 0.4mcg
Vitamin D | 5.0mcg | 2.0mcg
Calcium | 400mg | 160mg

VEGIE DELIGHTS SAVOURY VEGIE MINCE

**Ingredients**: Water, Vegetable Protein (23%) (Soy, Colour Caramel), Tomato, Onion, Garlic, Sugar, Salt, Flavour, Spices, Thickener (Xanthan Gum), Sunflower Oil, Minerals (Zinc, Iron), Vitamin (B12), Colour Caramel

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<tr>
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<tr>
<td>Protein</td>
<td>14.8g</td>
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<tr>
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<tr>
<td>–Saturated</td>
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<td>Available carbohydrate</td>
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<tr>
<td>–Sugars</td>
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<tr>
<td>Fibre</td>
<td>6.4g</td>
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<tr>
<td>Sodium</td>
<td>260mg</td>
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<tr>
<td>Vitamin B12</td>
<td>2.0mcg</td>
</tr>
<tr>
<td>Iron</td>
<td>3.5mg</td>
</tr>
<tr>
<td>Zinc</td>
<td>4.4mg</td>
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</table>

WELLNESS ROAD NUTRITIONAL YEAST FLAKES

**Ingredients**: Inactive yeast flakes, B vitamins (Thiamin, Riboflavin, Niacin, Vitamin B6, Vitamin B12), Folic acid, Iron

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<tr>
<td>Energy (Calories)</td>
<td>50 Cal</td>
<td>337 Cal</td>
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<tr>
<td>Protein</td>
<td>7.1g</td>
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<tr>
<td>Fat</td>
<td>Less than 1g</td>
<td>5.0g</td>
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<tr>
<td>–Saturated</td>
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<tr>
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<td>2.3g</td>
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<tr>
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<tr>
<td>Sugars</td>
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<td>0.0g</td>
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<tr>
<td>Fibre</td>
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<tr>
<td>Sodium</td>
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<tr>
<td>Potassium</td>
<td>315mg</td>
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<tr>
<td>Thiamin</td>
<td>0.55mg</td>
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<tr>
<td>Riboflavin</td>
<td>0.43mg</td>
<td>2.9mg</td>
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<tr>
<td>Niacin</td>
<td>2.5mg</td>
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</tr>
<tr>
<td>Folate</td>
<td>100mcg</td>
<td>667mcg</td>
</tr>
<tr>
<td>Vitamin B6</td>
<td>1.0mg</td>
<td>2.7mcg</td>
</tr>
<tr>
<td>Vitamin B12</td>
<td>0.5mcg</td>
<td>3.3mcg</td>
</tr>
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</table>

Nutritional yeast flakes add a savoury cheesy flavour to dips, dressings, sauces, spreads and soups. They are made from a variety of *Sarrcharomyces cerevisiae* and are inactive (don’t make food rise or ferment). Manufacturers grow nutritional yeast on a variety of sources including blackstrap molasses, whey and sugar beets. They add the B vitamins during processing.

**PERSPECTIVES: DR ALAN BARCLAY.**

**B12: THE COMPLEX VITAMIN**

Vitamin B12, or cobalamin, is the largest and most structurally complex of all of the vitamins. It’s essential for the development of red blood cells, normal growth, and nervous system maintenance. Our primary sources are animal products (meats, dairy, poultry, eggs and seafood) because it is only synthesized by microorganisms (bacteria and archaea), some of which are found in the soil around the grasses/weeds animals eat.

![B12 molecule](image)

**How much do we need?** The Recommended Dietary Intake (Recommended Dietary Allowance in North America) of 2.4 micrograms per day for women and men is relatively small, as B12 is concentrated and stored in the liver (3000–5000 micrograms in the average liver), secreted in bile and reabsorbed in the terminal ileum (small intestine). To put this into perspective, if you don’t consume any B12, the supplies in the liver will typically last a healthy adult several years.
**Vitamin B12 deficiency** Symptoms can be gradual, non-specific and subtle, so deficiency is hard to recognise. Milder symptoms such as weakness, tiredness, and memory loss can occur before true deficiency develops. True deficiency leads to serious health problems including megaloblastic anaemia (unusually large, structurally abnormal, immature red blood cells), paraesthesia, dementia, fatigue, and mood disturbances. If left untreated, serious neurological and neuropsychiatric complications can occur. Vitamin B12 deficiency has also been linked with an increased risk of heart attack and stroke.

True vegans, who are at risk of developing B12 deficiency because animal foods are off the menu, should make sure they consume B12-fortified foods such as some soy milks, or yeast-products where the yeast has been grown in a B12-fortified medium. Alternatively, they should take a B12 supplement (preferably chewable).

But they are not the only group of people at risk. In fact, the most common cause of B12 deficiency is autoimmune pernicious anaemia, where absorption is impaired due to intrinsic factor deficiency arising from autoimmune destruction of parietal cells in the stomach. Other common causes of B12 deficiency include gastrectomy (gastric surgery), ileal (small intestine) resection, pancreatic insufficiency, and malabsorption syndromes including Crohn’s disease and coeliac disease. Other less common causes of B12 deficiency include use of drugs such as biguanides (metformin), antacids, antibiotics and colchicines (used to treat gout), and rarely, malabsorption due to gastrointestinal bacterial overgrowth, congenital defects (e.g. birth transcobalamin deficiency), and infestation. Pure nutritional deficiency is rare and usually occurs only in strict vegans.

The incidence of vitamin B12 deficiency increases with age, probably due to the fact that elderly people are more likely to suffer from malabsorption. This malabsorption is caused primarily by gastric atrophy but also by chronic carriage of *Helicobacter pylori* (the bacteria that causes stomach ulcers), long-term ingestion of metformin and certain antacids, and increased chances of having gastric surgery. As well as varying with age, prevalence also varies with gender: elderly men are more likely to have low B12 levels than elderly women.

People with type 2 diabetes or polycystic ovarian syndrome who are treated with biguanides (metformin) may become deficient in B12. Metformin-induced B12 malabsorption may be due to digestive changes, which leads to the binding of B12-intrinsic factor complex. If you have been taking metformin for a prolonged period of time, ask your doctor to check your B12 status.

Commonly used antacid medications for gastrointestinal problems relating to excessive acid production include proton pump inhibitors and histamine 2-receptor antagonists. Common conditions that may require the use of antacids include peptic ulcer diseases, oesophagitis, gastro-oesophageal reflux diseases and Zollinger-Ellison syndrome. Antacid use is related to vitamin B12 deficiency in two ways. First, by lowering gastric acidity, it interferes with vitamin B12 absorption as vitamin B12 cannot be unbound from dietary protein in the stomach. Second, a higher pH creates an environment that promotes bacterial overgrowth in the intestine impairing the absorption process.

If you think you might be deficient in B12, consult your doctor.

**Read more:**
- [NHMRC. Vitamin B12](https://www.nhmrc.gov.au/)
- [Association between metformin and vitamin B12 deficiency in patients with type 2 diabetes: A systematic review and meta-analysis](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4626418/)


BEST FOOD FORWARD
WOMEN AND SEAFOOD: GET HOOKED.

Seafood is good for the heart and many of us don’t eat enough, including women. We thought we’d look at women in particular because we often overlook our heart health, and because women are still major influencers on food choices in households. It’s time we got hooked in seafood, both for ourselves and our families.

While plant foods are attracting a lot of attention (and for good reasons) we seem to have forgotten that seafood is a superfood. Fish and seafood are staple foods in the Mediterranean diet considered to be one of the healthiest eating patterns in the world. A high seafood intake is also thought to contribute to the healthiness of the traditional Japanese diet. Women should eat more seafood because it:

- **Is a nutrient-dense core food:** Seafood provides essential nutrients including protein, iron, zinc, iodine, calcium (in fish bones), B12 and omega-3 fats, just to name a few.
- **Supports healthy pregnancy:** Eating enough omega-3s during pregnancy and breastfeeding is important for optimal child brain development and may even affect child intelligence.
- **Helps protect against the biggest killer in the world:** Eating fish and seafood regularly reduces your risk of coronary heart disease.

**HOW MUCH?** Nutrition guidelines around the world suggest adults eat two serves a week. One serve is 100g (3½oz) of cooked (or 115g/4oz raw) seafood which is around the size of your hand, or the amount in a small can. While battered and deep-fried fish ‘n’ chips are delicious, steamed, broiled/grilled, baked or pan-fried fish are healthier options. Be sure to serve with plenty of vegetables or salad to boost the health benefits of the meal even more.
WHICH FISH? There is a huge variety of seafood to choose from but there are times women need to be selective. If you’re pregnant, avoid raw fish (e.g. sashimi, sushi), pre-cooked prawns and smoked salmon due to the risk of listeria (a bacteria that can cause problems for the unborn child if the mother becomes infected). Seafood is a nutritionally important food during pregnancy but some species contain high levels of mercury and some caution is required. Check your local health authority for which species to limit or avoid but keep in mind most are OK. In general, predator fish species at the top of the food chain accumulate higher levels of mercury – smaller fish species are lower in mercury. Canned fish products are not high in mercury.

WHAT ABOUT SUSTAINABILITY? Choosing sustainable seafood is important to ensure an ongoing supply for future generations. Look for sustainability logos on-pack when shopping for packaged seafood, such as the MSC (Marine Stewardship Council) logo. Check out the sustainability status of fresh fish and seafood in your country via websites or apps, such as the SAFS (Status of Australian Fish Stocks).

THE DISH ON FISH
- Seafood provides important nutrients for women, especially during pregnancy.
- Aim to eat seafood twice a week.
- During pregnancy, avoid seafood with high mercury content and raw fish due to risk of listeria.
- Choose sustainable seafood options.

Further reading
- Fish intake risks and benefits
- Marine Stewardship Council www.msc.org
- Omega-3 fatty acids and pregnancy

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 healthy 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
LENTILS
The term “superfood” is over-used, but in the case of lentils it is true says dietitian Nicole Senior. They are part of a highly nutritious group called legumes (or pulses) containing a marvellous package of nutrients including protein, fibre (all three types: insoluble and soluble fibre, and resistant starch), low GI carbohydrates, vitamins, minerals and an array of beneficial phytochemicals such as isoflavones and lignans. And thankfully for people with
celiac disease, legumes are naturally gluten free. Legumes are an integral part of plant-based diets known to promote good health and longevity.

Not only are lentils nutritious, they are cheap as well. They form the basis of many peasant dishes (now fashionable in affluent places where food is plentiful) and have provided a valuable meat alternative for poor households the world over. The rise of vegetarian, vegan and plant-based diets in developed countries has also given lentils the exposure they richly deserve. The other plus for legumes such as lentils is their environmental sustainability credentials. Compared to animal sources of protein, they require fewer inputs and produce fewer carbon emissions.

Canned lentils are convenient but dried lentils are dead-easy to cook. Thin lentil varieties such as the common red lentil don’t need soaking; just simmer 10–15 minutes until tender. For the larger types such as brown and puy (French) lentils, simmer in water until tender and then freeze in meal-sized portions. They are also well suited to slow cooking.

<table>
<thead>
<tr>
<th>Good Carbs Food Facts</th>
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<tbody>
<tr>
<td><strong>Cooked Red Lentils</strong></td>
<td><strong>★★★★★</strong></td>
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<tr>
<td><strong>Glycemic index</strong> – 25</td>
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<tr>
<td><strong>Gluten free</strong></td>
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<tr>
<td><strong>Serving size</strong> – ½ cup (about 90g or 3¼oz)</td>
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<tr>
<td>Kilojoules</td>
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<td>Calories</td>
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<td>– Mono-unsaturated</td>
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<td>Includes:</td>
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<td>– Natural sugars</td>
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—Natural starches
—Added sugars
—Added starches
Unavailable
Includes:
—Dietary fibre

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<td>Sodium</td>
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<td>Diabetes exchange</td>
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Ingredients: Red lentils

Source: The Good Carbs Cookbook

IN THE GI NEWS KITCHEN
Tomato and Red Lentil Soup with Toast Fingers • Anneka Manning’s Roasted Vegetables and Quinoa Salad • Ottolenghi’s Roasted Sweet Potatoes and Fresh Figs

TOMATO AND RED LENTIL SOUP WITH TOAST FINGERS
This simple soup from Anneka Manning’s Low GI Family Cookbook (Hachette Australia) is a great way to get in an extra serve or two of vegetables along with a scoop of nutritional power pack lentils. Dress it up with a dollop of plain yoghurt and a sprinkling of chopped parsley. If you make the soup a day or two ahead, keep in an airtight container in the refrigerator. Reheat in a saucepan over medium heat, stirring frequently, until simmering and heated through. • Freeze leftovers in serving portions in airtight containers for up to 2 months. Thaw in the refrigerator before reheating • Serves 4

1 brown onion, chopped
1 medium carrot, peeled, chopped
1 celery stick, chopped
2 garlic cloves, crushed
¾ cup water
2 tsp ground cumin
½ tsp paprika (optional)
400g (14oz) can no-added-salt diced tomatoes
1 tbsp no-added-salt tomato paste
½ cup split red lentils
3 cups salt-reduced vegetable stock
2 tsp sugar, or to taste
freshly ground black pepper, to taste

Toast fingers
4 slices multigrain low GI bread
2 tsp olive or canola oil margarine

Combine the onion, carrot, celery, garlic and water in a large saucepan. Cover and cook over medium heat, stirring occasionally, for 8–10 minutes or until the onion is soft. Stir in the cumin and paprika (if using) and cook, uncovered, for 1–2 minutes or until the water has evaporated. • Add the canned tomatoes, tomato paste, lentils and stock and bring to a simmer. Reduce heat to low, cover partially, and simmer gently, stirring occasionally, for 20 minutes or until the lentils are tender. Meanwhile, to make the toast fingers. • Preheat oven to 200ºC (400ºF) and line an oven tray with non-stick baking paper. Spread both sides of the bread slices with the margarine and cut each into 3 fingers. Place the bread on the lined oven tray. Just as the lentils are becoming tender, bake the bread for 10 minutes or until lightly golden and crisp. Turn off oven and leave it there to keep warm. • Transfer half the soup mixture to a blender or food processor and blend until smooth. Repeat with the remaining mixture. Return the soup to the pan and simmer gently until heated through or reduced to desired consistency. Taste before seasoning with a little sugar and pepper if you wish. Serve with the warm toast fingers for dipping. Yum.

Per serve
1215kJ/290 calories; 14g protein; 7.5g fat (includes 1g saturated fat; saturated : unsaturated fat ratio 0.15); 37g available carbs (10g sugars; 27g starch); 9g fibre; 962mg sodium; 719mg potassium; sodium : potassium ratio 1.3.

ANNEKA MANNING’S ROASTED VEGETABLES AND QUINOA SALAD
Anneka 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. This is one of her favourite salads which she makes year-round, but especially for lunch or dinner in winter served warm. Serves 4 • Preparation time: 25 minutes • Roasting time: 30–40 minutes
3 medium carrots, halved lengthways and thickly sliced
2 small red capsicum, deseeded and cut into 4cm pieces
2 medium zucchini (courgettes), trimmed, halved lengthways and thickly sliced
¼ small Jap pumpkin, seeded, peeled and cut into 4cm (1½in) chunks
2 tablespoons olive oil
1 cup tri-colour quinoa
2 cups water
1½ tablespoons freshly squeezed lemon juice, or to taste
¼ cup chopped flat-leaf parsley
¼ cup chopped fresh coriander or mint
40g rocket

Preheat the oven to 210°C/400°F (180°C/350°F fan-forced). • Toss the carrots, capsicum, zucchini and pumpkin with 1½ tablespoons of the oil and season with salt and freshly ground black pepper. Spread in a single layer over a large oven tray. Roast in preheated oven for 30–40 minutes, tossing gently after 20 minutes, or until the vegetables are tender and starting to brown. • Meanwhile, place the quinoa in a sieve and rinse under cold running water. Transfer to a medium saucepan and add the water. Bring to a simmer over a high heat. Cover with a lid, reduce the temperature to low and simmer gently for 10–12 minutes or until all the water has been absorbed. Remove from the heat and set aside, covered for 5 minutes. • Transfer the warm quinoa to large bowl and drizzle with the remaining 2 teaspoons of oil and the lemon juice. Season with salt and freshly ground pepper. Taste and adjust the seasoning with a little more lemon juice if necessary. Add the herbs and roasted vegetables and rocket and toss gently to combine evenly. Serve warm or at room temperature.

*Per serve*
Energy: 1205 kJ/290 calories; 9g protein; 12g fat (includes 2g saturated fat; saturated to unsaturated fat ratio 0.2); 33g available carbohydrate (includes 8g sugars and 25g starches); 6g fibre; 30mg sodium; 675mg potassium; sodium to potassium ratio 0.04

**OTTOLENGHI’S ROASTED SWEET POTATOES AND FRESH FIGS**
This combination of fresh fruit and roasted vegetables is one of the most popular at Ottolenghi’s restaurant. It wholly depends, though, on the figs being sweet, moist and perfectly ripe. Go for plump fruit with an irregular shape and a slightly split bottom. Pressing against the skin should result in some resistance but not much. Try to smell the sweetness. The balsamic reduction is very effective here, both for the look and for rounding up the flavours. To save you from making it you can look out for products such as balsamic cream or glaze. The goat cheese is optional – leave it out to make it vegan. Serves 4.
4 small sweet potatoes (1 kg in total)
5 tbs olive oil
2 tbs (40ml) balsamic vinegar (you can use a commercial rather than a premium aged grade)
20g (¾oz) caster sugar
12 spring onions, halved lengthways and cut into 4cm (1½in) segments
1 red chilli, thinly sliced
6 fresh and ripe figs (240g/½lb in total), quartered
(optional) 150g (5oz) soft goat’s cheese, crumbled
Maldon sea salt and black pepper

Preheat the oven to 240°C/ 460°F (Fan-forced 220°C/420°F). • Wash the sweet potatoes, halve them lengthways and then cut each again similarly into 3 long wedges. Mix with 3 tablespoons of the olive oil, 2 teaspoons of salt and some black pepper. Spread the wedges out on a baking sheet, skin-side down, and cook for about 25 minutes until soft but not mushy. Remove from the oven and leave to cool down. • To make a balsamic reduction, place the balsamic vinegar and sugar in a small saucepan. Bring to a boil then reduce the heat and simmer for 2–4 minutes, or until it thickens. Be sure to remove the pan from the heat when the vinegar is still runnier than honey; it will continue to thicken as it cools. Stir in a drop of water before serving if it does become too thick to drizzle. • Arrange the sweet potatoes on a serving platter. Heat the remaining oil in a medium saucepan and add the spring onions and chilli. Fry on a medium heat for 4–5 minutes, stirring often, making sure not to burn the chilli, and then spoon the oil, onions and chilli over the sweet potatoes. Dot the figs among the wedges and then drizzle over the balsamic reduction. Serve at room temperature with the cheese crumbled over, if using.
Per serve (without goat’s cheese)
1890kJ/451 calories; 11g protein; 24g fat (includes 6g saturated fat; saturated : unsaturated fat ratio 0.33); 47g available carbs (includes 25g sugars and 22g starch); 6.5g fibre

Jerusalem by Yotam Ottolenghi and Sami Tamimi (Random House) – available from good bookshops and online. Recipe reproduced with permission.