



GI NEWS

The Official Glycemic Index Newsletter



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THIS MONTH: Captain Cook's scurvy cure and the beginnings of nutrition science; Weight loss naturally bumps up appetite; Gut microbes, obesity and "yo-yo dieting" – Ted Kyle on what this mouse study did and didn't show; Dr Alan Barclay on why "personal journey" weight loss books are prone to false attribution and rarely supported by higher levels of scientific evidence; Nutrition follies with Prof Jennie Brand-Miller – the 3,500 calorie rule; How healthy is almond milk? Nicole Senior checks it out; Low GI fruit and veg boost vitamin C plus Anneka Manning's "High C" recipes; Kate Hemphill's Enriched Brown Rice Almond Pudding; GI Foundation's Di Crisp on quick and easy low GI grains for meals in minutes plus Gabriel Gaté's Spicy Fish with Coleslaw and Pearl Couscous Salad.

FOOD FOR THOUGHT

"A HANDKERCHIF FULL OF GREENS" – CAPTAIN COOK AND SCURVY

Scurvy hit the headlines recently in Australia. A few people with diabetes in Sydney whose wounds weren't healing were found to be low on vitamin C and verging on scurvy, the sailor's scourge. For centuries, signing up for long sea voyages could be a death warrant – thousands and thousands died. They had food that kept reasonably well on board like salt beef, legumes and "meal". But they needed fresh fruit and veg and they knew it. The Portuguese planned ahead and planted fruit trees and vegetables on St Helena for ships stopping over from Asia to Europe; and the seamen themselves went into debt to buy fresh "victuals" whenever they could. Seaman Thomas Freeman bought oranges, cheese and hens on credit on his West African voyage in 1562 according to his will.



Scurvy Grass

Captain Cook gets much credit for beating scurvy. Deservedly. He wasn't the only fruit and veg preacher sailing the high seas in the 18th century, but he was the standout in getting people to eat them. For starters, he was a prodigious stocker-upperer of a variety of fresh supplies. And he was a stickler. Everyone had to eat their greens. He didn't force feed people, he used psychology serving "sour kraut" to the officers on *Endeavour* and letting the men take it or leave it. They took it – as soon as seamen see "their Superiors set a Value upon it, it becomes the finest stuff in the World" he said. His men knew he saved their lives and they wrote moving testimonials. Here are two.

From Quartermaster Alexander Home, HMS *Discovery*

"we Met with Nothing Else that did any hurt and When one Considers it is astonishing How we have Come to so little Damage in this way during so Long a time for it was the Custom of Our Crews to Eat almost Every Herb plant Root and kinds of Fruit they Could Possibly Light (upon) with (out) the Least Inquirey or Hesitation or any Degree of skill & knowledge of their Qualitys, and as they have been so far Lucky as to Light upon Nothing Hurtfull I thing it is highly probable this disposition has been the principle Means of preserving Our Healths for such a Number of Years Almost Constantly on the water. Captain Cook raised this spirit Amongst us by his Example for scarc(e)ly any thing Came wrong to him that was Green and he was as Carefull in providing Vegetables for the Messess of the Crews as for his own Table and I do Believe that in this Means Consisted his grand Art of preserving his people in Health During so Many of the Longest and



Hardest Voyages that was Ever Made. It was his practise to Cause great Quantitys of Green Stuff to be Boiled Amoungst the pease Soup and wheat and Care'd Not Much whether they were Bitter or Sweet so as he was but Certain they had no Pernicious Quality and Frequently to one who Considered only the pleasing of their Taste without having Respect to health the Messess were somewhat spoiled But as there was Nothing Else to be got they were Oblledged to Eat them and it was No Uncommon thing when Swallowing Over these Mess(es) to Curse him heartyly and wish for Gods Sake that he Might be Oblledged to Eat such Damned Stuff Mixed with his Broth as Long as he Lived. Yet for all that there were None so Ignorant as Not to know how Right a thing it was. But the Generality of them for all that will please their Palate and run the Risque of their Health if it is Not to be procured or preserved but by Eating things that are Bitter & Disagreeable. He would Frequently Order them on shore in partys to walk about the Country and smell the Fresh Earth and Herbage and from His Example and Disposition they were in a Manner Let to know that it was Expected they Woud [missing] their Stomach with any green stuff that Could (be go)t if it was even at the Risque of geting the grip(es) [missing] (w)alking About himself he was shure to be [missing] and as he was Not Nice he Commonly Succeeded and in time the Men adopted the same Humour and Disposition as by Infectsin and perhaps in Many it Might be with a View of making their Court to him, for they knew it was A great Recommendation to be seen Coming on board from A pleasure Jaunt with A Handkerchif full of greens.”

And one verse of a song from Able Seaman Thomas Perry, HMS Resolution

We were all hearty seamen no cold did we fear
And we have from all sickness entirely kept clear
Thanks be to the Captain he has proved so good
Amongst all the Islands to give us fresh food.

Download an excellent paper on Captain Cook and scurvy [HERE](#):

NEWS BRIEFS

Why long-term maintenance of reduced body weight is so difficult; Ted Kyle on gut microbes, weight regulation, yo-yo dieting and heavy-handed academic public relations and sloppy health reporting.

WEIGHT LOSS BUMPS UP APPETITE

For every kilogram of weight lost, patients consumed an extra 100 calories a day – more than three times what they would need to maintain the lower weight reports a landmark study in [Obesity](#). The increase in appetite is out of proportion to the small amount of weight lost and “may explain why long-term maintenance of reduced body weight is so difficult,” said lead researcher Dr David Polidori.



What the researchers did. Knowing that patients with type 2 diabetes who receive the sodium-glucose cotransporter 2 (SGLT2) inhibitor canagliflozin (*Invokana*, Janssen) as part of a glucose-lowering strategy excrete a fixed amount of glucose in the urine (which causes weight loss), Dr Polidori and colleagues used a [validated mathematical model](#) to calculate energy-intake changes during a 52-week placebo-controlled trial of the drug, in which 153 patients received 300-mg/day canagliflozin and 89 patients received a placebo. Using this approach meant that the participants who received canagliflozin consistently excreted 90-g/day glucose but were not aware of the energy deficit.



At study end, the patients who had received a placebo had lost less than 1 kg and those who had received canagliflozin had lost about 4 kg. The weight loss with canagliflozin was less than predicted, due to the patients' increased appetite. On average, patients who received canagliflozin ate about 100 kcal/day more per kg of weight lost – an amount more than threefold larger than the corresponding energy-expenditure adaptations.

“Our results provide the first quantification of the energy-intake feedback-control system in free-living humans,” the researchers write. They add that in the absence of “ongoing efforts to restrain food intake following weight loss, feedback control of energy intake will result in eating above baseline levels with an accompanying acceleration of weight regain. The few individuals who successfully maintain weight loss over the long term do so by heroic and vigilant efforts to maintain behavior changes in the face of increased appetite ... in an...obesogenic environment.” And since continued weight loss becomes harder as patients lose more weight, this study reinforces the message that people should “focus on making healthy lifestyle changes that they can live with over the long term,” according to Dr Hall.

UNHELPFUL HEADLINES

Ted Kyle of ConscienHealth tracks how a mouse study about the role of gut microbes in weight regulation becomes a study of “yo-yo dieting?” The answer, he says, is unfortunately, heavy-handed academic public relations and sloppy health reporting. The case in point is a perfectly good mouse study published in the journal *Nature*. The authors found evidence that obesity changes the microbes in mice. Those changes persist even after the mice lose weight. And the microbes seem to contribute to the weight regain in those mice. No humans and no human dieting played any role in this study. But that didn't stop the academic PR machine from promoting this as a story about yo-yo dieting.



This mouse study has value. But it's just one piece of a much bigger puzzle about the physiology of weight regulation and how it malfunctions in obesity. Complex neuroscience, psychology, and endocrinology is at work in this disease process. Even if the mouse study proves to be relevant in humans – a big if – bugs in the gut can explain only part of what causes weight regain. Playing a role is not the same as controlling the whole process.

More than just scientific exaggeration is in play here. The yo-yo metaphor is a disparaging and misleading description for a chronic disease. When cancer relapses, no one describes it as yo-yo cancer. Yo-yo hypertension and yo-yo diabetes would be absurd labels for those conditions. But yo-yo dieting is a great metaphor for suggesting that weight regain is somehow the fault of someone with obesity trying to lose weight through diet and exercise. The implication is that they're doing it wrong. That implication and thus the yo-yo metaphor is flawed. The bias that people with obesity ought to be able to cure themselves through diet and exercise perpetuates that flawed thinking. Click [here](#) for the study and [here](#) for more from Reuters.

PERSPECTIVES WITH DR ALAN BARCLAY

FALSE ATTRIBUTION

The heralding of the new year heralds a swathe of resolutions. Losing weight is a popular one. Knowing this, book publishers have their latest diet books stacked high on the shelf to bank on our resolutions while they still burn brightly in our minds. These days, many diet books focus on a personal weight-loss journey. Someone who has “seen the light”, identified the dietary villain(s) that the rest of us have missed, lost a truck load of weight and never felt better. The book is their testament. Sound familiar?



The testimonial that underpins most such diet books, otherwise known as the case-study or case-report, does not rate very highly in scientific terms. It's pretty much on the bottom of the scientific evidence pile, just squeaking in above personal opinion, animal and test tube studies. Why? Case-studies provide a detailed knowledge of a particular individual's experience, but they are not carefully controlled scientific experiments and therefore the results cannot, and should not, be generalised to the broader population. Only the results of larger studies conducted in groups of people chosen to be representative of the general population can. In the June [GI News](#) we talked about scientific study design.

Case studies are very prone to “false attribution” due to their inherent nature. Think of false attribution as a case of mistaken identity – it's when you [misidentify the cause of an event](#) like losing weight. For example, most of the case studies that appear in diet books identify a specific nutrient or ingredient like (the current favourites) carbohydrates, sugars, fructose, gluten, dairy foods that they have religiously avoided to achieve their magical results and simply advise the rest of us to follow suit. What they don't seem to realise or acknowledge is that in doing so, they have inadvertently reduced their kilojoule intake, which is the real reason they have lost the weight.

Kilojoule (calories) reduction is the common denominator and the reason why the actual dietary villain itself doesn't really matter as long as avoiding it restricts your food and drink consumption sufficiently. All roads lead to Rome so to speak.

When scientists put the results of the case-study to the test using the best scientific method – the randomised controlled trial – they are rarely replicated. The reason why is simple. In randomised controlled trials people are randomly selected to follow a control diet (typically a healthy diet as defined by the most recent dietary guidelines, for ethical reasons) and an intervention diet – say a low fructose diet to use a common dietary villain, where the individuals are instructed to reduce their fructose consumption to as low a level as possible. Other than the fructose content of the diet, all other known factors (known scientifically as confounders) are controlled for, or kept equal, like the total kilojoules consumed, the amount of protein, fat, carbohydrate, dietary fibre, vitamins, minerals, alcohol and the amount of exercise performed. Randomised controlled trials have in fact been performed in this case (fructose), and when all results are gathered together in a systematic review and meta-analysis – the highest level of evidence – they are quite clear: [fructose is not uniquely fattening](#) unless consumed in ridiculously large amounts in pure form on top of your regular diet. No one does of their own volition of course – only in clinical trials.

So, despite the latest best-selling diet book's compelling story (and the massive PR support) testimonials/case-studies are very prone to false attribution and are rarely supported by higher levels of scientific evidence. They are best left on the shelf. Sadly, the dietary guidelines have never been best sellers but they are available [on line](#) for free...



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NUTRITION FOLLIES WITH PROF JENNIE BRAND-MILLER

NUTRITION FOLLY #1, THE 3,500 CALORIE RULE

This folly has several incantations:

- Gaining weight means you are eating too much
- Eat less and move more and you'll lose weight
- A fat person is a glutton

FACT: *A small persistent average daily imbalance between food intake and energy expenditure of just 7.5 calories underlies the average weight gain in the whole population.*



A fundamental principle of nutrition science is that when you consume more calories (food energy) than you spend in daily living (working, playing, sleeping and breathing) you will gain weight. It's a simple principle. Calculating exactly how much weight you will gain from a given number of calories/kilojoules however is not simple at all. Indeed, most people and organisations have gotten it *completely wrong*. The common assumption is that if you consume an extra 3,500 calories (14,600 kJ) you will gain 0.5 kg (a little over 1 pound).

It's wrong. It conveniently ignores the fact that weight gain leads to increases in both resting metabolic rate as well as the energy cost of physical activity. If you weigh more, you have more muscle mass and therefore a bigger engine. Sleeping, resting, just idling, will require more fuel. And if you take a walk or kick a ball around the park, you will definitely need more food energy to carry your extra weight.

Hence, *in theory*, if you eat more than you need, you should reach a new equilibrium, a new weight, where your energy expenditure is equivalent to your higher food intake. You would gain a pound or two, and then stop. But we all know that's not how it pans out. Weight gain creep is the scourge of adult life.

So, what's the real deal on weight gain? In 2011, Dr Kevin Hall and colleagues from the National Institute of Health (NIH) in the United States applied dynamic mathematical modelling to predict how much additional energy was required to explain the average weight gain of the whole population. What they found shocked everyone, including me.

Quantifying weight gain requires a *dynamic* assessment of how energy expenditure changes over time as well as how energy imbalances are partitioned between storage of fat and lean tissue. Lean tissue such as muscle mass is more energetically expensive to maintain than is body fat and contributes more to a body's overall energy expenditure, particularly resting metabolic rate and the energy cost of depositing new tissue. These factors, along with the energy cost of physical activity have recently been incorporated into validated models of human metabolism and body composition changes in adults.



The old model of dieting says a reduction of 2000 kJ (approximately 500 calories) per day will result in a weight loss of 22 kg (about 48 pounds) in 1 year. But, the dynamic model predicts half that – about 11 kg (about 22 pounds). This explains why in the real world even the most diligent individuals following a diet often fail to reach their weight loss goals.

They might also decide to increase the amount of exercise they do to lose weight or avoid weight gain. Physical activity increases energy expenditure and can therefore cause weight loss, assuming no compensatory changes in energy intake. In other words, a calorie should be a calorie with respect to physical activity versus diet. However, there is abundant evidence that physical activity leads to compensatory changes in food intake that offset the energy required to exercise. Put more simply, people who exercise more, will find themselves eating more. They might notice this (because they are hungrier) or they might not.

Subconsciously, our brains are very good at making sure we eat enough to maintain our current weight. If we are growing, we eat enough to ensure normal growth along a pre-determined 'rail'. If we eat too little because we are busy, or more active than usual, or there's not much food available, we find ourselves sitting more than usual and feeling less energetic, *saving* energy. Our resting metabolic rate (idling rate) will also go down. For the most part, this cross-talk in the brain goes unnoticed.

The same applies to insidious weight gain creep. Kevin Hall and his colleagues modelled the obesity epidemic at the population levels. By inserting the average weight gain over the whole US adult population over 30 years in their model, they calculated the energy imbalance underlying the observed change. The small difference between the average energy intake and expenditure amounted to just *30 kJ or 7.5 calories* a day. That's just 50 calories a week, 100 calories over a fortnight.



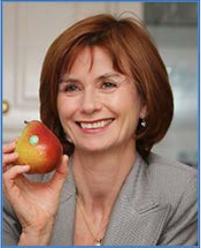
No-one, not even the most highly trained dietitian, can possibly maintain this degree of precision consciously. Those lucky few who don't gain weight in adult life are relying on sub-conscious control of appetite. They are truly exceptional.

Of course, the food energy required to maintain the higher body weight is much higher than that required at the beginning of the obesity epidemic. In the USA, it is of the order of 900 kJ or 220 calories per day. This means that much larger changes in energy balance are needed for obese individuals to return to the average body weight of the 1970s. An adult with a BMI of 35 needs to eat 500 calories less per day. They will be very hungry and it will require a herculean effort to lose weight and maintain their weight loss.

Modelling can also estimate the potential effect of population wide food policy such as taxing soft drinks. If there is no compensation, a 20% tax would *theoretically* lead to a decrease of 170 kJ or 40 calories per day. Over 5 years, Hall and colleagues predict a weight loss of 1.8 kg (not quite 4 pounds). This of course does not take into account the likelihood that other drinks including alcohol may fill the gap. That would be counterproductive because alcohol *causes* loss of dietary restraint (and a host of other problems).

Mathematical modelling of human metabolism has given us new insights into why we are the way we are. The most important is the tiny number of calories needed to gain weight. [You can use their web-based dynamic model to perform your own simulations.](#)

Now if I give up two squares of chocolate ...



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.

FOOD UN-PLUGGED

Nicole Senior pulls the plug on hype and marketing spin to provide reliable, practical advice on food for health and enjoyment.

ALMOND MILK UN-PLUGGED

Foodnavigator USA projects almond milk will be the fastest growing segment in the dairy alternative market with a compound annual growth rate of 15% in the coming years. Have you tried it? It's hard to miss if you visit cafés in Sydney, especially in hip areas, nestling alongside other hipster fare such as gluten-free muffins, protein balls, and chia cookies.

Like many trendy foods and drinks, almond milk radiates its charms under a health halo, marketed as a “healthy” alternative to traditional milk in your coffee. Sydney people drink a heck of a lot of coffee – I've often thought if the coffee supply ran out the city would grind to a halt (pardon the pun). But caffeine has always had a less-than-holy reputation (it is a drug after all). This where the marketing of almond milk to cafés has done the trick: if people think their coffee is good for them they'll drink it with abandon. Genius!



So how healthy is it? Let's look at what's in it. The commercial varieties are basically water (about 97%) plus almond paste along with additives to make it pour well and taste good such as emulsifiers, flavour, salt, oil and vegetable gum – some brands add sugar or syrup to boost appeal. As for nutrition, a recent article in the [New York Times](#) says plant milks pale in comparison to dairy milk, an [expert](#) says some plant milks are “startling low” on nutrition, while a [study](#) in the *Journal of Paediatric Gastroenterology and Nutrition* suggests plant milks should not be considered a nutritional alternative to cow's milk. Why? It has almost no protein or calcium. While some brands do have calcium added, it is not as well absorbed this way as the calcium in dairy milk is.

In Sydney, we're seeing many cafés making their own almond milk with perhaps a bit more almond and no additives – but it has almost no calcium either. In these days of protein worship it's odd to see such a minimal protein product as almond milk capture so much attention. Unless you have a good reason to avoid dairy milk, such as allergy or intolerance, nutritionally you'd be better off sticking with real milk; ideally light milk if you're drinking more than a coffee's-worth in a day (2–3 serves of dairy food a day are recommended).

From a nutritional point of view, I think almond milk is more a missed opportunity than an outright assault. Critics have been less kind implying plant milks are akin to junk food. To me that's like rushing to the opposite extreme. However, the fact that almond milk contains almost no almond – around 2.5% – means all that delicious goodness of a handful of almonds has been diluted to next to nothing. It's kind of like eating a fruit flavoured yoghurt and expecting goodness from the fruit. While immodest marketing claims that suggest almond milk has the cholesterol-lowering benefits of almonds or their vitamin, mineral and antioxidant content are fanciful to put it kindly.



**COMPARING THE NUTRITION CONTENT PER 100ML (3½ FL OZ)
(Just over ⅓ cup – less than the average café latte)**

Product	Ingredients	Energy (kJ)	Protein (g)	Fat (g)	Carbs (g) (Includes sugars – g)	Calcium (mg)
Whole milk	Milk	293	3.5	3.5	6.3 (6.3)	107
Light milk (1%)	Milk (fat reduced)	194	3.8	1.2	6.1 (6.1)	109
Almond milk + calcium Brand 1	Water, almonds (2.5%), calcium, emulsifier, natural flavours, salt, vegetable gum	105	0.4	1	3.3 (2.9)	83
Almond milk + calcium Brand 2	Water, almonds (2.5%), calcium, emulsifier, flavour, salt, vegetable gum, antioxidant, vitamins	173	1.4	3.5	0.8 (0.3)	120
Almond milk, Fresh pressed	Water, almonds (10%)	256	2.1	5.6	0.5 (0.4)	22

When it comes to cooking with almond milk you’d do well to use recipes developed specifically for almond milk to ensure a good result as its very watery. And think about boosting the goodness with addition of nutritious ingredients such as nuts, seeds, wholegrains or egg (see Kate’s recipe for [rice pudding](#) in this issue).

Foodnavigator.com says North American consumers are choosing almond milk to help lose weight, and they quote marketing claims that almond milk can boost satiety (fullness). I searched the published scientific literature and found no studies on satiety of almond milk. It seems highly unlikely that such a low protein beverage could have a high satiety value (protein is the most satiating nutrient). There are no studies on using almond milk instead of cow’s milk for weight loss either. And there are no scientific studies suggesting dairy milk is fattening. The opposite. A [meta-analysis](#) of randomised controlled trials found weight-loss diets that include dairy foods including regular milk result in greater weight loss than those without.

Years ago in Sydney’s Italian district I used to visit an authentic Italian café that refused to serve anything but regular milk in their coffee and saw anything else as an insult to their proud barista tradition. I can only admire their resistance to the folly of food trends.

The un-plugged truth

Almond milk is not nutritionally equivalent to dairy milk and has very little going for it nutritionally.

If you need to avoid dairy foods and soy milk with calcium, choose an almond milk with added calcium.



However you choose to indulge during this festive season, enjoy it in moderation. It is a privilege to indulge in food for which we must be truly grateful. Happy holidays!

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

HIGH C LOW GI (OR GL) FRUIT AND VEG

Because our bodies can't make the vitamin C we need, we need to get it from our food. And that's essentially plant foods unless you eat liver. Here's a list of some popular fruits and vegetables with their GI values, plus their GL and the amount of vitamin C per 100 grams so you can easily compare them. You can see which ones are "high C" and which are not.



Berries – fresh		Per 100 grams		
	GI	Available CARBS	GL	Vitamin C
Blueberries	53	11	6	13mg
Strawberries	40	4	1.5	45mg

Temperate climate fruits – fresh		Per 100 grams		
	GI	Available CARBS	GL	Vitamin C
Apples	38	12	5	3mg
Apricots	34	7	2	12mg
Grapes	53	16	8	3mg
Grapefruit	25	5	1	40mg
Kiwifruit	53	9	5	71mg
Nectarines	43	8	3	5mg
Oranges	42	9	4	36mg
Peaches	42	8	3	8mg
Pears	38	10	4	4mg
Plums	39	14	5	3mg

Tropical fruits and melons – fresh		Per 100 grams		
	GI	Available CARBS	GL	Vitamin C
Bananas (av)	52	20	10	4mg
Lychees	57	16	9	40mg
Mangos	51	15	8	30mg
Papaya (pawpaw)	56	7	4	60mg
Pineapple	59	11	6	25mg
Rockmelon (cantaloupe)	68	5	3	34mg
Watermelon	78	5	4	6mg



Vegetables and herbs		Per 100 grams		
<i>Don't overcook veg, it destroys the vitamin C</i>	GI	Available CARBS	GL	Vitamin C
Beetroot – canned	64	9	6	4mg
Broad beans – cooked	63	7	4	29mg
Broccoli – cooked	•	0.5	•	85mg
Brussels sprouts – cooked	•	2	•	88mg
Butternut pumpkin – cooked	51	7	3	6mg
Cabbage, green – raw	•	4	•	13mg
Capsicums (peppers), green – raw	•	3	•	24mg
Capsicums, (peppers), red – raw	•	5	•	144mg
Carrots – raw	39	7	8	2mg
Cauliflower – cooked	•	2	•	56mg
Corn on the cob – cooked	48	20	10	7
Kale – cooked	•	4	•	31mg
Parsley – fresh	•	1	•	150mg
Parsnip – cooked	52	10	5	8mg
Peas – cooked	51	6	3	11mg
Potatoes, Carisma lower GI – cooked	55	12	7	1mg
Swedes (rutabaga) – cooked	72	4	3	19mg
Tomatoes – raw	•	2	•	18mg

IN THE GI NEWS KITCHEN THIS MONTH

Kate Hemphill shows you how to boost the nutrition of rice pud made with almond milk and Anneka Manning's tasty fare helps you up your vitamin C, totally naturally. In GI Foundation News there's more veg with Gabriel Gaté's Spicy fish with coleslaw and pearl couscous salad.

STICKS, SEEDS, PODS AND LEAVES

Kate Hemphill's light and easy everyday fare with culinary spices and herbs. Kate absorbed an intimate knowledge of all aspects of herbs and spices from her parents and grandparents. She is a trained chef who has worked as a recipe writer and cookery teacher. She contributed the recipes to Ian Hemphill's best-selling *Spice and Herb Bible* and you will find more of her recipes on the Herbies spices [website](#).

ENRICHED BROWN RICE ALMOND PUDDING

This pud is equally good as a decadent breakfast as it is as a dessert. Serve topped with a dollop of plain yoghurt and extra maple syrup if you wish and fresh fruit.

Prep time: 5 minutes • Cook time: 60 minutes • Serves: 4





To start

1 cup brown long-grain rice
3 cups unsweetened almond milk
pinch salt
3 medjool dates, finely chopped
2 tbsp white chia seeds

To finish

1 cup unsweetened almond milk
2 organic free-range eggs
2 tbsp (30ml) maple syrup
1½ tsp ground cinnamon
1 tsp ground cardamom
½ tsp vanilla powder
¼ cup slivered almonds
¼ cup buckinis (activated buckwheat)

Rinse the rice under cold water then place in a saucepan with almond milk, salt, dates and chia. Cook over medium heat for 30–40 minutes, stirring occasionally, until most of the liquid is absorbed and rice is tender. • Whisk the extra almond milk with eggs, syrup and spices together then stir into rice. Cook, stirring, for a further 10–15 minutes until reduced. • Top with almonds and buckinis and serve with fresh fruit.

Tip: Pudding can be cooked, then refrigerated for up to 5 days and reheated to serve.

Per serve

Energy: 1415kJ/340 cal; protein: 9g; fat: 18g; saturated fat: 2 g (saturated : unsaturated fat ratio 0.13); available carbohydrate: 30g; fibre: 12g; 230mg sodium; 280mg potassium (sodium : potassium ratio 0.82)

HIGH C RECIPES

No need to pop a pill. We dug into our archives to give you a couple of easy ways to boost your vitamin C naturally with BakeClub Anneka Manning's tasty fare that's easy to prepare.

STRAWBERRY, MAPLE AND PISTACHIO PARFAIT

Start the day with a healthy dose of C with [BakeClub](#) Anneka Manning's breakfast parfait – A delicious combination of nuts, seeds and oats layered with sweet fresh strawberries and thick Greek-style yoghurt. Some people are so keen on it they also serve it for dessert. • Preparation time: 15 minutes • Baking time: 12–15 minutes • Serves: 8

800g natural Greek-style yoghurt
625g (2½ punnets) ripe strawberries, hulled and quartered

Maple and pistachio granola

½ cup traditional rolled oats (oatmeal)
½ cup unsalted pistachio kernels, coarsely chopped
½ cup shredded coconut
½ cup sunflower seeds
½ cup pepitas (pumpkin seeds)
1 teaspoon ground cinnamon
¼ cup pure maple syrup or pure floral honey
1 teaspoon natural vanilla essence or extract





To make the granola, preheat the oven to 170°C/340°F (150°C/300°F fan-forced). Line a large oven tray with non-stick baking paper. • Combine the oats, pistachios, coconut, sunflower seeds, pepitas and cinnamon in a medium bowl and toss to combine. Combine the maple syrup and vanilla, pour over the oat mixture and toss to combine evenly. • Spread on the lined tray and bake in preheated oven for 12–15 minutes, tossing twice during baking, until golden. Set aside to cool to room temperature. • To assemble the parfait, layer the yoghurt, granola and strawberries in glasses or dishes, finishing with a little sprinkling of granola. Serve immediately.

Baker's tip: Keep a jar of this granola in an airtight jar or container in the pantry. It will keep at room temperature for up to 2 weeks.

Per serve

1430 kJ/ 340 calories; 14 g protein; 21 g fat (includes 7 g saturated fat; saturated : unsaturated fat ratio 0.33); 21 g available carbs (includes 14 g sugars and 7 g starch); 6 g fibre; sodium : potassium ratio 0.13

BROCCOLI, FETA AND MINT FRITTATA.

Simple, tasty and packed with goodness this frittata makes a perfect lunch or light dinner accompanied by a leafy salad. Tip: You will need 2 medium heads broccoli (about 250g/8oz each) to get 300g/10oz broccoli florets. It is best served either warm or at room temperature and will keep covered in the fridge for up to 2 days. • Serves 6 • Preparation time: 25 minutes (+5 minutes standing time) • Baking time: 18–20 minutes.

- 1½ tbsp olive oil
- 1 leek, pale section only, washed and thinly sliced
- 300g (10oz) small broccoli florets (see Baker's Tips)
- 1 garlic clove, finely grated ¼ tsp chilli flakes
- 10 eggs
- ½ cup finely shredded Parmesan
- 2 tbsp finely chopped mint
- ½ teaspoon finely grated lemon rind
- Freshly ground black pepper, to taste
- 50g (2oz) Persian or soft feta, crumbled



Preheat oven to 200°C/400°F (180°C/350°F fan-forced). • Put 1 tablespoon of the oil, broccoli and leek in a 20–22 cm (base measurement) oven-proof frying pan. Cover and cook over medium heat, stirring occasionally, for 10 minutes or until softened slightly and starting to brown. • Add the garlic and chilli and cook, uncovered, for 1 minute or until aromatic. Transfer the broccoli mixture to a bowl and wipe out the pan with paper towel. Use a fork to whisk together the eggs, parmesan, mint and lemon rind until evenly combined. Season well with pepper. Add the remaining ½ tablespoon oil to the frying pan and heat over medium heat. • Spread the broccoli mixture evenly over the base, pour the egg mixture evenly over the top, shaking the pan slightly to allow the egg to settle around the broccoli, and then sprinkle with the feta. • Transfer the frying pan to the centre of the preheated oven and bake for 18–20 minutes or until the egg is just set in the centre. • Remove from the oven and set aside for 5 minutes to cool slightly before cutting into wedges and serving warm or at room temperature.

Per serve (one piece)

985 kJ/ 235 calories; 17.5 g protein; 17.5 g fat (includes 6 g saturated fat; saturated : unsaturated fat ratio 0.52); 1.3 g available carbs (includes 1 g sugars and 0.3 g starch); 3 g fibre; sodium : potassium ratio 0.96



GLYCEMIC INDEX FOUNDATION NEWS

QUICK AND EASY GRAINS

When you are running around from pillar to post, whipping up a meal in minutes at the end of the day when the kids are moaning “Mom, I’m hungry” has challenges. But there some healthy low GI options to fill those hollow legs other than the standard pasta Bolognese including bulgur, pearl couscous and quinoa that combine in minutes with veg and meat, chicken, or fish.

Serving: ½ cup cooked following manufacturer’s instructions	GI	Available CARBS per serving	GL per serving
Bulgur (Coles Fine Grit Bourghal)	48	14g	7
Couscous, pearl or Israeli (Blu Gourmet Wholemeal)	53	19g	10
Couscous, pearl or Israeli (Blu Gourmet)	52	19g	10
Quinoa	53	20g	10

GABRIEL GATÉ’S SPICY FISH WITH COLESLAW AND PEARL COUSCOUS SALAD

Serves 4

- 1 tsp ground cumin
- 1 tsp chilli paste
- ½ tbsp olive oil
- 4 white fish fillets, each about 130g (4oz)
- juice of 1 lemon
- 2 tbsp low-fat natural yoghurt
- ¼ onion, chopped
- 2 medium carrots, grated
- 1 cup finely sliced cabbage
- 2 tbsp finely sliced coriander leaves
- 1 tbsp finely sliced mint leaves
- freshly ground black pepper
- 1 cup pearl couscous
- 4 lemon wedges



Mix the ground cumin with the chilli paste and olive oil and rub this mixture on both sides of the fish fillets. Marinate the fish in the refrigerator for about 30 minutes. • Meanwhile, in a bowl combine lemon juice, yoghurt, onion, carrot, cabbage, coriander leaves and mint leaves. Season with pepper and put aside. • Bring 3 cups of water to the boil in a medium saucepan. Stir in the pearl couscous and cook for 10 minutes. Drain and cool the couscous under the tap. Stir the cold couscous with the salad. • Heat a non-stick frypan and cook the fish fillets for about 3 minutes on each side. • Serve the fish with the coleslaw, couscous salad and lemon wedges.



Per serve
1270 kJ/ 305 calories; 32g protein; 6g fat (includes 1g saturated fat; saturated : unsaturated fat ratio 0.20); 28g available carbs (includes 4g sugars and 24g starch); 3g fibre; 150mg sodium; 790mg potassium

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For more on the GI Foundation go to www.gisymbol.com, like us on [Facebook](#) or follow us on [Twitter](#)

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