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FOOD FOR THOUGHT

FOOD AND FAKE NEWS
There’s a bit of a myth doing the rounds that ours is an era of fake news. There’s nothing new about fake news. Certainly not when it comes to food and health. Most old wives’ tales were “fake news” back in the day. “An apple a day keeps the doctor away” is a maxim that likely started as marketing promo for Welsh apples in the mid nineteenth century. The first mention seems to be Notes and Queries magazine (February 1866 you’ll keep the doctor from earning his bread.”

It would be nice to think there’s a grain of truth in “an apple a day,” after all, they are rich in soluble fibre and vitamin C and deserve star billing. Sadly, the findings of a study based on actual nutrition data collected from nearly 8400 men and women — 753 of whom ate an apple a day — and that followed rigorous study methods concludes: “Evidence does not support that an apple a day keeps the doctor away; however, the small fraction of US adults who eat an apple a day do appear to use fewer prescription medications”.

How about “carrots help you see in the dark”? After all, they are seriously rich in beta-carotene that converts to vitamin A in the body and a deficiency of vitamin A does cause night blindness. Promoting carrots as a Super Veg with power to improve night-time vision was British wartime propaganda to get people to grow more veg and eat more carrots (they are easy to grow) because there were food shortages. “Somewhere on the journey the message that carrots are good for your eyes became disfigured into improving eyesight,” says John Stolarczyk, curator of the virtual World Carrot Museum (yes, there is one and it’s well worth looking at).
What is new, is that fake news, urban myths and misinformation spread farther and faster than ever before thanks to “lightning-quick news cycles and algorithm-determined social media feeds” says Rachel Visontay in an Opinion piece in the Sydney Morning Herald. “There is no simple cure once we are exposed to fake news,” she says “because the effects cannot be fully overcome by just promoting fact. Hanging on to mistaken beliefs or fictions occurs not just when people don’t want to change their minds – our brains are actually bad at updating information even when we’re trying to. Using the terminology of some researchers, misinformation is really ‘sticky’.”

What to do about it? “When a myth has been so oft- and long-repeated, it will be called to mind very easily. To have any chance of winning out, facts need the same repetitive treatment,” she says. “We can never fully eliminate the impact of misinformation. People and institutions in positions of influence should try harder to put out only truth, because we are much better at learning than unlearning. But there will always be those who knowingly dress fiction as fact. Science tells us how to loosen their grip on us.”

Read more:
- [Association Between Apple Consumption and Physician Visits: Appealing the Conventional Wisdom That an Apple a Day Keeps the Doctor Away](#)
- [The Carrot Museum](#)
- [There’s no simple cure for the problem of fake news](#)
WHAT’S NEW?
MILK OR FAKE MILK?
European courts settled the matter back in June. Only milk can be called milk in Europe, not those plant concoctions. In the US, the dairy industry is fighting to get FDA to enforce its regulations about what is milk and what is not. The FDA says it’s gotta come from cows, but the USDA say that “soy milk” is language in everyday use. And over FDA’s objections, they’ve insisted on using it in consumer nutrition education materials. No wonder consumers are confused. Here’s a responsible government agency “knowingly dressing fiction as fact” as Rachel Visontay would say.

The range of white, non-milk liquids calling themselves milk could make your head spin. Soy milk, almond milk, cashew milk, rice milk, coconut milk, hemp milk, barley milk, quinoa milk. The list goes on. Dairy producers don’t like it one bit when all these fake milks try to pass themselves off as some sort of holy water super milk. Early in the 20th century, FDA started setting standards for genuine foods. And for milk, FDA’s standard says the real thing comes from a cow’s udder. Anything else is fake.
– Thanks to ConscienHealth’s Ted Kyle for this report.

RUN RODENT, RUN
We are wary of rodent studies. The poor animals are typically force fed, overfed and then killed; and after all that, the relevance of the study’s outcome is questionable because rats and mice aren’t people. However, because there are biological similarities, research scientists find them valuable trial subjects. What scientists working in diabetes research have found is that sometimes pharmacological treatments that work in mice fail without an explanation in humans. They now know why this may be.

Writing in ScienceAlert Signe Dean explains. “New medicines come to our pharmacies through a rigorous process that begins in the lab and ends with multiple trials in humans. Along the way there can be animal studies, such as trials of type 2 diabetes drugs in mice. Researchers from Lund University in Sweden and King’s College London have found that mice and humans have previously unknown differences when it comes to having G protein-coupled receptors (GPCRs) on insulin-producing beta cells in the pancreas. GPCRs are found on the surfaces of many cells, where they receive chemical messages via various molecules called G proteins. We have nearly 1000 different GPCRs, each finely tuned to react to a particular molecular signal. These receptors have a laundry list of jobs in the body, including detection of certain tastes and smells, immune system regulation, transmission of nerve
signals and many more. That's why pharmaceuticals can be used to target specific GPCRs. This avenue of delivering drugs is so popular, it is estimated that around 40 per cent of all modern prescription meds target this receptor type. But when it comes to developing GPCR-targeted drugs for type 2 diabetes, we’ve had little success. And that could well be because the receptors in mouse and human beta cells just don't match up.”

- **Report:** ScienceAlert
- **Study:** A comparative analysis of human and mouse islet G-protein coupled receptor expression

FREE-FROM FADS, FODMAPS AND FIBRE

“Free-from” is trendy with a just touch of fake because while avoiding FODMAPs may be helpful for some of us, it’s not such a good idea for all of us. Prof Fred Brouns suggests we may be throwing the baby out with the bathwater as people adopting free-from FODMAPs diets are often adopting a diet that is low in dietary fibre – the long-standing driver of good gut health. It is well established that diets rich in dietary fibre reduce our risk of bowel cancer along with numerous other chronic diseases.

FODMAPs, rapidly fermentable oligosaccharides, disaccharides, monosaccharides, and polyols, seem to exacerbate intestinal discomfort in people with irritable bowel syndrome (IBS) and prescribing a FODMAP-free diet (carried under medical or dietetic supervision) has proven beneficial for reducing symptoms for many people. But as Fred Brouns points out in *The Dietary Fibres–FODMAPs Controversy*, there is an increasing perception that FODMAPs which are a problem for some, can be detrimental to everyone’s gut health leading to the worldwide development and commercialization of low-FODMAP diets and products. All very concerning in light of the actual body of evidence that clearly shows we need at least 25 grams and optimally more than 35 grams of nondigestible carbohydrates (including FODMAPs) every day for good gut health.

- **Study:** The Dietary Fibers–FODMAPs Controversy

HOW MUCH PROTEIN?

New research presented at the European Congress on Obesity (ECO) in Porto, Portugal in May 2017, shows that a high intake of protein in early childhood, particularly from animal food sources, is associated with a higher body mass index (BMI) due to increased body fat and not to increases in fat-free mass (internal organs, bones, muscles, connective tissue, water). The study was conducted by Dr Trudy Voortman and colleagues at the Erasmus University Medical Centre, Rotterdam, the Netherlands.

The authors conducted a population-based cohort study of 3564 Dutch children whose dietary intake was assessed using food-frequency questionnaires at age 1 year. From that, the researchers calculated intakes of total protein, protein from different sources; of total carbohydrates, polysaccharides, monosaccharides, and disaccharides; and of total, saturated, monounsaturated, and polyunsaturated fat. Between the ages of 1 and 10 years, participants had their height and weight repeatedly measured, while fat (fat mass index) and fat-free masses (fat-free mass index) were assessed using dual x-ray absorptiometry (DXA) scanning at age 6 and 10 years. The data were adjusted to take account of variables
such as maternal age and education, child's ethnicity, total energy intake, physical activity levels and whether the child was breastfed or not.

The study found that a higher intake of both total and animal protein (from dairy and non-dairy sources) was associated with being taller, heavier, and having a higher BMI up to the age of 10. This was true regardless of whether protein was replacing carbohydrates or fats in the diet. The authors say: "Our results suggest that high protein intake, particularly from animal food sources, in early childhood is associated with higher body fat mass, but not fat-free mass … Future studies are needed to examine the optimal range of protein intake and macronutrient composition of the diet for infants and young children and translate these findings into dietary guidelines targeted at this specific age group."

- **Study**: Protein intake in early childhood and body composition at the age of 6 years: The Generation R Study.

**GOT PRE-DIABETES? FIVE THINGS TO EAT OR AVOID TO PREVENT TYPE 2 DIABETES**

“Pre-diabetes is a call to action,” says Prof Clare Collins, writing in The Conversation. “It’s diagnosed when blood glucose levels are higher than normal, but not high enough to be classified as having type 2 diabetes. What you choose to eat, or avoid, influences this risk. We know from the findings of numerous diabetes prevention program studies that people can reduce their risk of type 2 diabetes by eating more healthily, losing 5–10% of their body weight, and walking for 30 minutes a day, five days a week. The results of a self-directed diabetes prevention program for men with pre-diabetes our team has just published in the American Journal of Men’s Health found that improved eating patterns were associated with an average weight loss of 5.5kg and better blood glucose regulation. So, what are these improved eating patterns to prevent type 2 diabetes? Eat more vegetables and fruit, ditch soft drinks, eat a plant based diet, make use of the glycemic index, drink more coffee.”

- **The Conversation report**: Got pre-diabetes? Here’s five things to eat or avoid to prevent type 2 diabetes
- **Study**: Process Evaluation of the Type 2 Diabetes Mellitus PULSE Program Randomized Controlled Trial: Recruitment, Engagement, and Overall Satisfaction
- **Contact**: Prof Clare Collins website

**PERSPECTIVES WITH DR ALAN BARCLAY**

**CAN WE CUT OUR AVERAGE DIETARY GI AND GL?**

In July GI News, I made the point that: “We now know that glycemic load is the most powerful predictor of blood glucose and insulin levels. You can lower GL by substituting low GI foods for high GI foods, or by consuming less carbohydrate, or by a bit of both.” There is also a rapidly growing body of evidence that low GI or GL diets assist with weight loss, weight maintenance and chronic disease prevention and management. In this issue, I look at a good news health literacy education story: how Australians successfully lowered the average dietary GI of their diets between 1995 and 2011/12 and as a flow-on effect, the GL.

First, a bit of background. David Jenkins and colleagues introduced the glycemic index (GI) in 1981 by comparing the postprandial blood glucose incremental area under curve of different carbohydrate foods. Numerous studies were then conducted to test the GI of
different foods and the first International GI Table was published in 1995 followed a year later by the popular book, *The GI Factor*, giving consumers clear, accessible and authoritative information on the glycemic index, why it mattered and how to go low GI (“learn to love lentils” was a catchphrase). The free database of GI values on the University of Sydney GI website (www.glycemicindex.com) went live late 2000 (or early 2001) thanks to Assoc Prof Gareth Denyer; and in July 2005, GI News arrived on the scene as an online newsletter (http://ginews.blogspot.com.au) thanks to Dr Scott Dickinson.

But it was clearly time to involve food manufacturers. In Australia, the Glycemic Index Foundation, a not-for-profit health promotion charity, developed the GI Symbol Program (a front-of-pack food endorsement program) in 2002 to help consumers make healthy low GI choices when grocery shopping easier. Foods that carry the Symbol have been GI tested at an accredited laboratory and meet strict category-specific nutrient criteria consistent with international dietary guidelines for kilojoules, saturated fat and sodium, and where appropriate, fibre and calcium. Since then a range of “good carbs” have carried the Symbol including breads, breakfast cereals, pasta, rice, noodles, apples, pears, potatoes, milk (the real stuff) and yoghurt.

But did Australian consumers make use of all this information about the GI of foods? A study in the *American Journal of Clinical Nutrition* suggests that they did (Australian are good adopters and early adopters). Using data from Australia’s most recent national nutrition surveys, the researchers set out to see if dietary GI and GL had changed between the years 1995 and 2011/2. They found that dietary GI decreased from 56.5% to 53.9%. They put this down primarily to a reduction in the intake of added sugars (primarily sucrose in Australia), honey and syrups, sweetened beverages, juices and potatoes. But low GI breads and breakfast cereals (many with the GI Symbol) have been very successful product ranges in Australia. These results are encouraging. There is no reason why this cannot be achieved elsewhere in the world.

What next? Here at *GI News*, we would like to see the GI (and GL of a serving) included on Nutrition Information Panels/ Nutrition Facts Labels to help consumers manage their weight and reduce their risk of chronic disease; and to help those with diabetes manage blood glucose levels. It’s estimated that around 50% of food purchasing decisions are made at the point of sale, so let’s give consumers the information they need to make better choices.

Alan Barclay PhD is a consultant dietitian. He worked for Diabetes Australia (NSW) from 1998–2014. He is co-author of over 30 scientific publications, and of *The Good Carbs Cookbook* (Murdoch Books), *Managing Type 2 Diabetes* (Hachette) and *The Ultimate Guide to Sugars and Sweeteners* (The Experiment, New York), and author of *Reversing Diabetes* (Murdoch Books).
FOOD UN-PLUGGED

CAN YOUR BREAKFAST CLEANSE YOUR LIVER?

Remember the lemon detox diet – that tear-jerking lemon, cayenne pepper and sugar water concoction? Or those liver cleansing diet books? No matter how often you gently and persistently point out that detoxing your body is what the liver and kidneys do (it’s their job), the notion that you need a special pill, potion or diet to detox and cleanse has entered the seriously sticky misinformation realm. And stuck.

We recently came across a liver cleansing muesli developed by a naturopath and thought we’d check it out.

The ingredients – oats, sunflower seeds, almonds, barley bran, psyllium, barley bran, linseeds, and pepitas – are nutritious, high-fibre foods good for bowel health. There’s also an “added botanical for digestive support”, which we assume is the “0.5% slippery elm” – a herbal remedy from the bark of the slippery elm tree.

Slippery elm (Ulmus rubra Muhl.) was an important medicinal plant for Native Americans who used it in a decoction as a laxative and to aid delivery in childbirth. We’re not herbalists, so to find out more, we checked professional texts including Herbs and Natural Supplements - an evidence based guide by Lesley Braun and Marc Cohen (Elsevier). Slippery elm has traditionally been used to treat wounds and skin irritations, sore throats, coughs and gastrointestinal conditions they say. The bark contains mucilages capable of trapping water and forming a gel thought to have soothing properties. However, scientific research is lacking and the therapeutic effectiveness of slippery elm has not been investigated under clinical conditions in people, so reported beneficial effects are anecdotal, or from in-vitro and animal studies. “Safety data is lacking, so slippery elm is not recommended during pregnancy and lactation and in children and adolescents under 18” says Sarah Edwards et al in Phytopharmacy: An Evidence-Based Guide to Herbal Medicinal Products.

What about dosage? The amount of slippery elm is 0.5% of the total, which works out at 0.25g (or 250mg) per 50g serve – a bit like a drop in the therapeutic ocean when you read that the typical dose of slippery elm recommended by herbal manufacturers is 1 teaspoon three times daily (15g).

While the grains and seeds in this muesli product deliver the good gut benefits of dietary fibre, there’s no evidence its small amount of slippery elm will soothe your gut, let alone cleanse your liver. The bigger product picture here is the manufacturer’s health claims (“slippery elm powder contains a gel-like substance that acts as a protective layer for the digestive tract ... you can’t taste it in the muesli, but they’re in there working for your liver!”) and such claims are strictly regulated in many countries. Under consumer law it is not permitted to make false or misleading claims about a product and a case could be made this product does not deliver on its liver-cleansing promise.
How to look after your liver To keep your liver in tip top condition, eat plenty of plant foods such as wholegrains, legumes, fruits, vegetables, nuts and seeds; exercise regularly; maintain a healthy weight and drink water. Limit alcohol, caffeine and fatty processed foods.

The un-plugged truth

- You don’t need to buy detox products or follow detox diets.
- Muesli can be a healthy breakfast choice (depending on the brand).
- To care of your liver, drink less alcohol, exercise regularly, enjoy a healthy plant-based diet, maintain a healthy body weight and drink plenty of water.

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

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

Want more on detoxing? Dr Nick Fuller recently took a look at liver detox or liver cleanse products in GI News where he dealt with the question: can the liver be “cleansed”?

KEEP GOOD CARBS AND CARRY ON CAULIFLOWER

In our new book, The Good Carbs Cookbook, we profile the 40 foods that made the final cut (and our designer Hugh Ford created the wonderful graphics for each of them). We chose cauliflower (from the Brassica or cabbage family) for a couple of reasons. It’s a great source of dietary fibre and other nutritional goodies and we love it and like to cook with it.

THE CAULIFLOWER PROFILE

This three-in-one veg gives you an edible head of creamy curds and crunchy white stems encased by tender green leaves. Forget the substitute-for-potatoes-or-rice scenario and make the most of this affordable, versatile, mild-mannered member of the cabbage family that stir-fried, steamed, boiled or raw takes on the bold flavours of sharp cheeses, biting mustards, spicy curries, Asian sauces and tangy pickles. It makes excellent soups from the simple and soothing to the sublime and delicate. By concentrating its sweetness, roasting puts cauliflower in a class of its own as side dish, salad or finger food with dips. The best cauliflower for roasting whole should have snowy white, tightly packed florets (curds) nestling in bright green leaves. Blanching before roasting gets rid of strong odours, keeps the florets tender after roasting and shortens the roasting time. Instead of blanching the cauliflower in water, you can steam it if you prefer.
The milky head is the one we are all most familiar with, but these days you’ll find orange, green (broccolflower) and purple caulis that hold their colour when cooked making for a rather spectacular dish. Choose heads (or half heads) with tight, firm, creamy-white curds, steering well clear of any with black, slimy spots – signs of mould. Check the stems too and make sure there are no cracks or splits. Frozen florets will be fresher than those pre-packed plastic trays of florets that are often way past their best-by date. A head of cauli will keep in the fridge for a few days in a plastic bag.

WHAT’S IN THEM? Half a cup of cooked cauliflower florets (about 90g or 3oz) has around 90 kilojoules (21 calories), 2g protein, no fat, 2g carbs (2g sugars/0g starches), 2g fibre, 13 mg sodium, 284 mg potassium. Because it is so low in carbohydrate, it is not possible to measure its GI, and therefore it does not have a GL either.

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IN THE GI NEWS KITCHEN
BRILLIANT BRASSICAS
Brassica veggies are consumed in enormous quantities around the world from salad plants such as rocket (arugula), mustard and cress; to Oriental leafy veg such as pak-choi, bok choy and choy sum and their European cousins – cabbage, kale, cauliflower, broccoli and kohlrabi. We opted for the flowery Brassicas this issue: cauliflower and broccoli.

GO CAULI
Two low GI recipes that show how versatile this delicate veg is: Spiced Cauliflower and Lentil Soup and Crispy Cauliflower with Buckwheat and Pinenuts.

SPICED CAULIFLOWER AND LENTIL SOUP
It’s an easy recipe to ring the changes. Try using Moroccan spice powder and 1 tablespoon of harissa paste instead of the ground cumin and coriander. Or substitute diced orange-fleshed sweet potato or butternut pumpkin for the lentils. Prep: 10 mins • Cook: 40 mins • Serves: 2

olive oil spray
1 leek, pale part only, chopped
2 garlic cloves, chopped
1 long green chilli, seeded and chopped
2 tsp ground coriander
2 tsp ground cumin
¼ tsp ground turmeric
350g (12oz) cauliflower florets
½ cup green lentils, rinsed
1 tbsp reduced-fat coconut milk
1 tbsp toasted slivered almonds
1 small handful coriander (cilantro) leaves

Spray a large saucepan with olive oil and place over medium heat. Add the leek and cook, stirring, for 2 minutes or until softened. Add the garlic, chilli, ground coriander, cumin and turmeric, and stir for 1 minute or until aromatic. • Add the cauliflower florets, green lentils
and 4 cups water. Cover the pan and cook for 30–35 minutes or until the cauliflower and lentils are tender. • Using a stick blender, blend the soup until smooth. • Ladle the soup into bowls and serve topped with the coconut milk, almonds, coriander leaves and freshly ground black pepper.

Per serve
1295kJ/ 308 calories; 22g protein; 7g fat (includes 0.5g saturated fat; saturated : unsaturated fat ratio 0.08); 32g available carbs (includes 10g sugars and 22g starches); 16g fibre; 70mg sodium; 1350mg potassium; sodium : potassium ratio 0.05.

This recipe is from Reversing Diabetes (Murdoch Books), and is available from good bookshops and online.

CRISPY CAULIFLOWER WITH BUCKWHEAT AND PINENUTS

With so many grains competing for attention on supermarket shelves, buckwheat doesn’t get much of a look in unless you want soba noodles or buckwheat pancakes. In fact, untoasted, the groats have a rather mild flavour and make a nutty addition to grainy salads and sides, or a speedy option for risottos (especially with mushrooms). Toasting groats for a few minutes adds oomph. In this dish, the earthy, and slightly smoky flavour of buckwheat’s amazing tiny pyramid shapes, makes a robust addition.

Prep: 10 mins • Cook: 30 mins • Serves: 6

1 medium cauliflower
2 tablespoons olive oil
sea salt flakes
¼ cup raw buckwheat groats, rinsed
½ cup medium pitted black olives, roughly chopped
2 tbsp salted capers, rinsed and drained
3 tbsp toasted pine nuts
2 tbsp currants

Dressing
1 garlic clove, crushed
1 handful parsley, chopped
¼ cup olive oil
2 tsp lemon juice
sea salt flakes and freshly ground pepper

Preheat the oven to 190°C/375°F (fan 170°C/325°F). Line a baking tray with baking paper. • Rinse the cauliflower and cut through the thick core into quarters. Cut each quarter into thick slices and put into a bowl. If you prefer, cut them into large florets. Pour over the oil, sprinkle with a little salt and toss. Arrange the cauliflower on the tray and roast for 20–25 minutes, or until crispy and slightly charred. Set aside to cool. • While the cauliflower is roasting, bring a pot of water to the boil, tip in the buckwheat and simmer for 8–10 minutes, or until al dente. Drain, rinse and leave to cool to room temperature. • Whisk together the dressing ingredients, adding salt and pepper to taste, to make a chunky thick dressing. Watch the amount of salt you use, as both the capers and olives will provide a briny tang. •
Put the cauliflower, buckwheat, olives, capers, pine nuts and currants in a bowl. Pour over the dressing and lightly tumble together. Serve at room temperature.

*Per serve*
1505kJ/ 360 calories; 6g protein; 27g fat (includes 3.5g saturated fat; saturated : unsaturated fat ratio 0.15); 21g available carbs (includes 5.5g sugars and 15.5g starches); 5.5g fibre; 255mg sodium; 505mg potassium; sodium : potassium ratio 0.5.

This recipe is from *The Good Carbs Cookbook* (Murdoch Books), and is available from good bookshops and online.

**STICKS, SEEDS, PODS & LEAVES**

Kate Hemphill is a trained chef. She contributed the recipes to Ian Hemphill’s best-selling Spice and Herb Bible. You will find more of her recipes on the Herbies spices website. Or you can follow her on Instagram (@herbieskitchen). Kate uses Herbies spices and blends, but you can substitute with whatever you have in your pantry.

**BARRAMUNDI AND BROCCOLI FISH CAKES**

Served here with wilted spinach and lemon wedges. Substitute the barramundi fillets for a firm white fish such as snapper, hake, ling, perch, cod, seabass or coral trout. *Herbie’s Spices Fish Cake Spice Mix* is a tangy combo (coriander, sumac fennel, mace, ginger, lemon myrtle, dill, parsley and Australian native pepperberry). Substitute with 1 tsp lemon zest and 1–2 tbsp of chopped fresh parsley. Prep time: 15 mins • Cook time: 45 mins • Serves: 4

3 barramundi fillets (400g/14oz total) 1 egg, beaten
2 cups milk 1 tsp finely grated lemon zest
6 florets broccoli, cooked and drained 1 tbsp Herbies fish cake spice mix
2 potatoes (450g/1lb total) ¼ cup breadcrumbs, plus extra for coating
1 tbsp butter rice bran or vegetable oil, for cooking

Place fish fillets skin side up in a deep pan and cover with milk. Bring to a gentle boil over low-medium heat then turn off heat and allow fish to continue cooking for 10 minutes. • Peel and cut the potatoes into chunks and cook until tender. Mash with butter and season to taste. • Chop the cooked broccoli finely and stir into the mash along with the egg, lemon zest, spice mix and ¼ cup breadcrumbs. • Remove cooked fish from milk and discard skin. Flake the fish into the mash mixture, removing any bones. • Stir to combine well then shape into 12 medium fish cakes. Once shaped, toss in extra breadcrumbs. Fish cakes can be
placed on a lined baking tray, covered and refrigerated for up to 24 hours before cooking. • To cook, heat oil in a large frying pan and cook fish cakes for 3–4 minutes per side, until golden then drain on kitchen paper towel before serving.

Per serve
1990kJ/ 475 calories; 30g protein; 25g fat (includes 6g saturated fat; saturated : unsaturated fat ratio 0.32); 29g available carbs (includes 9g sugars and 20g starches); 4g fibre; 228mg sodium; 1302mg potassium; sodium : potassium ratio 0.18.

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NUTRITIONAL ANALYSIS
To analyse Australian foods, beverages, processed products and recipes, we use FoodWorks which contains the AusNut and Nuttab databases. If necessary, this is supplemented with data from www.calorieking.com.au and http://ndb.nal.usda.gov/ndb/search.

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