FOOD FOR THOUGHT
DON’T CONFUSE CORRELATION WITH CAUSATION

In an entertaining and informative piece in The Conversation, Jon Borwein and Michael Rose look at the dangers of making a link between unrelated results. “Here’s an historical tidbit you may not be aware of,” they write. “Between the years 1860 and 1940, as the number of Methodist ministers living in New England increased, so too did the amount of Cuban rum imported into Boston – and they both increased in an extremely similar way. Thus, Methodist ministers must have bought up lots of rum in that time period! Actually no, that’s a silly conclusion to draw. What’s really going on is that both quantities – Methodist ministers and Cuban rum – were driven upwards by other factors, such as population growth. In reaching that incorrect conclusion, we’ve made the far-too-common mistake of confusing correlation with causation.”

As we are reporting on a number of large prospective studies and their correlations (otherwise known as associations) in this issue of GI News, we thought we would kick off with an extract from a post by Prof Arya Sharma (Even Correlations Based on Billions of Data Points Do Not Prove Causation, Obesity Notes, August 23, 2017) reminding us of the very serious limitations of such studies.

Even Correlations Based on Billions of Data Points Do Not Prove Causation

Readers may have already heard about a recent study by Tim Althoff and colleagues from Stanford University, published in Nature, that analyses physical activity data collected from smart phones consisting of 68 million days of physical activity for 717,527 people, in 111 countries (only 46 of which were included in the study). As one may expect, not only do activity levels vary widely across countries but also substantially within countries (which in general terms, the authors refer to as “activity inequality”). It turns out that activity inequality and not actual levels of activity predict obesity rates (based on BMI).
The authors discuss [in their paper] various limitation of their study but fail to mention the biggest limitation of all, the simple fact that correlations, no matter how strong or how large the data set, simply cannot prove causality.

Thus, while the data does prove the point that you can do all sorts of interesting analyses when you have large data sets, it simply does not prove that activity levels (or activity inequality for that matter) actually has much to do with obesity at all. Indeed, one could think of a number of confounders that would otherwise differentiate countries with high activity inequality that happen to have high obesity rates from countries that have low activity inequality and low obesity rates (let’s not even mention reverse causality).

Thus, as nice as the figures presented in the paper may be, it is really hard to follow the authors’ conclusion that, ‘Our findings can help us to understand the prevalence, spread, and effects of inactivity and obesity within and across countries and subpopulations and to design communities, policies, and interventions that promote greater physical activity.’

This is not to say that designing communities, policies, and interventions would not be of substantial health benefits – given all of the known benefits of physical activity. Unfortunately, whether or not, these policies would do anything to prevent or reverse obesity is another matter altogether and remains as unclear after this study as before.

- Dr Sharma’s Obesity Notes
- Large-scale physical activity data reveal worldwide activity inequality
- Clearing up confusion between correlation and causation

Dr Sharma is Professor of Medicine & Chair in Obesity Research and Management at the University of Alberta, Edmonton, Canada. He is also the Clinical Co-Chair of the Alberta Health Services Obesity Program. He has authored and co-authored more than 350 scientific articles and has lectured widely on the etiology and management of obesity and related cardiovascular disorders and is regularly featured as a medical expert in national and international TV and print media and maintains a widely read obesity blog at www.drsharma.ca.

WHAT’S NEW?
PROTEIN AND THE PROSPECT OF DIABETES
There have been a couple of prospective studies or what we are now going to call “Methodist ministers and Cuban rum” studies recently on protein intake and risk of type 2 diabetes.

- The findings of the University of Eastern Finland study in the British Journal of Nutrition suggest the source of dietary protein may play a role in the risk of developing type 2 diabetes. The researchers found that replacing animal protein with plant protein was associated with a lower risk of type 2 diabetes.
- The findings of a prospective study and meta-analysis of the Melbourne Collaborative Cohort published in the American Journal of Clinical Nutrition showed that higher intakes of total and animal protein were both associated with increased
risks of type 2 diabetes, whereas higher plant protein intake tended to be associated with lower risk of type 2 diabetes.

What the researchers have found are actually correlations not “findings” in the sense of answers or causation. Certainly, diets high in plant protein such as wholesome whole foods like beans, chickpeas and lentils seem to be protective of a number of chronic diseases including type 2 diabetes. They are also generally low GI. Diets rich in animal protein don’t seem to convey the same advantage and numerous prospective studies over the years show this. Perhaps the saturated fat in meat has something to do with it. Saturated fat does contribute to insulin resistance making the poor old pancreas work harder pumping out more insulin. It’s also worth remembering that the Insulin Index of Foods published in the American Journal of Clinical Nutrition showed that any type of meat (beef, chicken, and pork) produced substantial insulin secretion.

What next? Prospective studies like these are useful for developing hypotheses that can then be put to the test with randomised controlled trials.

The studies
- Intake of different dietary proteins and risk of type 2 diabetes in men: the Kuopio Ischaemic Heart Disease Risk Factor Study.
- Dietary protein intake and risk of type 2 diabetes: results from the Melbourne Collaborative Cohort Study and a meta-analysis of prospective studies.
- An Insulin Index of Foods (full PDF)

SUGAR’S SWOON IS GOING GLOBAL
A new industry analysis by Rabobank suggests sugar’s swoon appears to be passing a tipping point reports ConscienHealth’s Ted Kyle. Food marketers are bowing to consumer pressure and driving sugar out of products, even in developing markets. For more than a decade now, the reputation of sugar as the primary culprit behind obesity trends has been growing. U.S. consumption of added sugars and sugar sweetened beverages peaked at the turn of the millennium. But the market for sugar continued to grow in developing markets. That refuge for marketing sugary foods is fading away.

The Rabobank report describes a cycle of consumer preferences. At its heart, this is a story of steadily rising global obesity rates, finger pointing, and the repercussions of consumers cycling through a love/hate relationship with the three macronutrients – carbohydrate, fat, and protein – and, in the process, demonizing certain foods. Currently, protein is on the rise (certainly in North America and Europe), as sugar, sugar-containing products, and other highly refined carbohydrates are increasingly cast as the main villain in the unremitting rise in obesity and metabolic syndrome rates. A “clean label” with a short ingredient list is the imperative that food companies are chasing. Added sugar will drop out. Artificial sweeteners are scary, so they aren’t coming back, either.

Now that global food makers are bowing to the storm of pressure that started with public health advocates, what are those advocates saying? Tom Farley, Philadelphia’s health commissioner, says it will take many years before any of this has an impact on public health. He says: “Sugar is a problem, but sugar is not the only problem.” In responding to doubts
about the impact of Mexico’s sugar sweetened beverage tax, Barry Popkin and colleagues recently wrote: “The obesity epidemic will take decades to slow down, stop, and finally reverse itself, but other benefits might be seen sooner.” In other words, don’t hold your breath for health miracles from declining trends in sugar consumption.

To read more
- [Rabobank Report](#)
- [ConscienHealth News](#)

Ted Kyle is a healthcare professional experienced in collaborating with leading health and obesity experts for sound policy and innovation to address health needs and the obesity epidemic in North America. Through ConscienHealth, he works to advance changes in policy and public opinion that will allow new approaches to be developed and put into use.

**NEW GI VALUES 18 EMIRATI FOODS**

“I welcome this unique set of data, which provide local populations with a practical and more effective way of controlling their blood glucose levels,” says award-winning Registered Dietitian Azmina Govindji (a media spokesperson for the British Dietetic Association and NHS Choices who was Chief Dietitian to Diabetes UK for 8 years).

“Eating well is about enjoyment, nutritional balance, and also cultural appropriateness. There is a growing incidence of diabetes in UAE and up until now, we’ve only had nutritional and GI information on Western-style foods.

Accurate analysis of the glycaemic impact of locally available produce, as well as dishes cooked using traditional methods, can help people with diabetes make more informed choices about local cuisine. This new research will fill an important gap, enabling healthcare professionals to have a more effective means of providing tailored dietary advice.

The data shows, for example, that foods like khameer bread and beef harees perform well on the GI scale, whereas regag bread and beef thareed are best saved for special occasions.”

<table>
<thead>
<tr>
<th>FOOD</th>
<th>GI</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Breads</strong></td>
<td></td>
</tr>
<tr>
<td>Arabic bread</td>
<td>67</td>
</tr>
<tr>
<td>Regag bread</td>
<td>76</td>
</tr>
<tr>
<td>Chebab bread</td>
<td>54</td>
</tr>
<tr>
<td>Muhalla bread</td>
<td>77</td>
</tr>
<tr>
<td>Khameer bread</td>
<td>47</td>
</tr>
<tr>
<td><strong>Entrée dishes</strong></td>
<td></td>
</tr>
<tr>
<td>Fendal, sweet potatoes boiled with dates</td>
<td>74</td>
</tr>
<tr>
<td>Chami, cooked in buttermilk with white cumin seeds</td>
<td>60</td>
</tr>
<tr>
<td>Habba Hamra, red seed drink</td>
<td>47</td>
</tr>
</tbody>
</table>
### Main dishes

<table>
<thead>
<tr>
<th>Dish Description</th>
<th>GI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Harees (beef), cracked or coarsely-ground wheat, boiled and mixed with meat. Its</td>
<td>42</td>
</tr>
<tr>
<td>consistency varies between a porridge and a dumpling.</td>
<td></td>
</tr>
<tr>
<td>Thareed (beef), cooked stew poured on regag bread.</td>
<td>74</td>
</tr>
<tr>
<td>Biryani (chicken), cooked basmati rice with boiled chicken</td>
<td>52</td>
</tr>
<tr>
<td>Machbous (fish), cooked basmati rice with fried fish</td>
<td>60</td>
</tr>
<tr>
<td>Arseyah, similar to harees but cooked with white rice and blended with chicken</td>
<td>72</td>
</tr>
</tbody>
</table>

### Desserts

<table>
<thead>
<tr>
<th>Dessert Description</th>
<th>GI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Khabisa, semolina pudding with cardamom</td>
<td>67</td>
</tr>
<tr>
<td>Leqemat, deep-fried doughnut balls</td>
<td>44</td>
</tr>
<tr>
<td>Batheetha, toasted flour mixed with raw date paste</td>
<td>59</td>
</tr>
<tr>
<td>Khanfaroosh, deep-fried hotcakes seasoned with saffron and cardamom</td>
<td>45</td>
</tr>
</tbody>
</table>

**Test method:** For each test food, at least fifteen healthy participants consumed 25 or 50g available carbohydrate portions of a reference food (glucose), which was tested three times, and a test food after an overnight fast, was tested once, on separate occasions. Capillary blood samples were obtained by finger-prick and blood glucose was measured using clinical chemistry analyser. A fasting blood sample was obtained at baseline and before consumption of test foods. Additional blood samples were obtained at 15, 30, 45, 60, 90 and 120 min after the consumption of each test food. The GI value of each test food was calculated as the percentage of the incremental area under the blood glucose curve (IAUC) for the test food of each participant divided by the average IAUC for the reference food of the same participant.

**Study**

- Glycaemic index and glycaemic load values of commonly consumed foods in the United Arab Emirates
- Azmina Govindji [http://on.fb.me/AzNutrition](http://on.fb.me/AzNutrition) | twitter.com/AzminaNutrition

**PERSPECTIVES WITH DR ALAN BARCLAY**

**PURE BUT NOT SO SIMPLE**

Most nutrition experts have been recommending that we enjoy traditional healthy eating patterns like the Mediterranean and Okinawan diets for many years now, rather than focusing on single nutrients, ingredients or food groups. After all, we eat foods, not nutrients, and the one-nutrient-at-a-time approach is fraught with unintended consequences as nutrition scientists such as Dr David Katz have enumerated very clearly on numerous occasions. However, the old fat versus carbohydrate debate still seems to attract media attention and the recent publication of the results of the PURE (Prospective Urban Rural Epidemiology) study are another example of hype over serious dietary substance.

The PURE study followed over 135,000 people living in 18 countries (three high-income (Canada, Sweden, and United Arab Emirates), 11 middle-income (Argentina, Brazil, Chile, China, Colombia, Iran, Malaysia, occupied Palestinian territory, Poland, South Africa, and Turkey) and four low-income countries (Bangladesh, India, Pakistan, and Zimbabwe)) for over 7 years and found that death rates were highest in those who reported having the highest carbohydrate intakes, and conversely were lower in those with higher fat intakes. “Global dietary guidelines should be reconsidered in light of these findings,” they proclaim.
While the PURE study may sound impressive, like all observational studies, it can only show associations (like the Methodist minister and Cuban rum story). It also has a number of significant limitations, including the fact that the associations were only observed in the extreme levels of consumption (43% and 78% of energy from carbohydrates and 11% and 38% of energy from fats), and that diabetes diagnosis was self-reported (so we don’t know how many people really had diabetes). Many people in the low-income countries may have had diabetes but didn’t know it. This would significantly confound the results. However, one of the most significant limitations is how they estimated people’s food and nutrient intakes.

At the very beginning of the study (seven years ago), a food frequency questionnaire was used to assess people’s food intakes. That was the only time people were asked what they ate. Food frequency questionnaires ask you to recall all the foods and drinks you consumed over the previous 12 months – a difficult task for most of us at the best of times (what did you eat last week?). These questionnaires also have to be carefully designed to reflect the food preferences of the people being studied – it’s not wise to use a questionnaire designed for one country in a different country, as food preferences and the food supply are usually very different. And finally, food frequency questionnaires need to be validated to see how well they measure actual food and nutrient intakes. There are many different ways of doing this. Overall, it’s highly unlikely that the protein, fat and carbohydrate estimates used in the PURE study are very accurate, which of course has profound implications for the results and their interpretation.

Finally, the study looked at the different kinds of fat (saturated, mono and polyunsaturated) but for some reason was not able to look at carbohydrate quality – not even examining the effect of dietary fibre, let alone refined carbohydrates (both starches and sugars), glycemic index or load. Like fats, all carbohydrates are of course not the same, and it is not very useful to lump them all together.

Despite all these significant limitations, and taking the study’s results at face value, we must consider how relevant they are in comparison to what the average person is eating today. In Australia, for example, our most recent national nutrition survey determined that the average adult consumed 43.5% of energy from total carbohydrate and 30.9% from fat. The nutrient reference values that underpin Australia’s dietary guidelines recommend that Australians consume 45-65% of energy from carbohydrates and 20-35% of energy from fats. These ranges are very similar to what are recommended in the PURE study – our dietary guidelines therefore do not need updating based on this. We are already eating the minimum amount of carbohydrate and close to the upper end of the recommended range for fat. We therefore need to be eating better quality (minimally refined, high fibre, low GI) carbohydrates, not less, and similarly we need to be eating more poly and mono-unsaturated fat, not more saturated fat.

This is all very academic. We eat foods not nutrients. Most people don’t know what percent of energy they get from protein, fat or carbohydrate. Patterns of eating are much more useful, which is what most modern dietary guidelines focus on: recommending that we eat mostly “good carbs” like fruits, vegetables, legumes, wholegrains, milk and yoghurt and save refined carbohydrates like sugar-sweetened beverages, confectionery, savoury starchy snacks (e.g., chips, crisps), etc for special occasions. Keep it relevant. Keep it simple.
**Associations of fats and carbohydrate intake with cardiovascular disease and mortality in 18 countries from five continents (PURE): a prospective cohort study**

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

**FOOD UN-PLUGGED**

**FOOD UNPLUGGED: GLUTEN-FREE**

In August, the Medical Journal of Australia published an article questioning the existence of non-coeliac gluten or wheat sensitivity. The article was hot media fodder, with most stories including a medical expert suggesting that most people avoiding gluten without being diagnosed with celiac disease didn’t need to do so. The article also concluded that gluten-free diets carry risks, are socially restricting and are costlier. We were glad to see this article published and pleased to see this issue being raised because we’ve been saying something similar for years.

While a gluten free diet is the only treatment for people with coeliac disease, there are many that claim going gluten-free is the magic bullet to weight loss and optimum health for everyone. While there is no good evidence to back this up and a growing number of studies now suggesting it might have adverse effects in the long run, the marketing horse has already bolted and gluten-free foods are a large and growing category. We thought we’d take a closer look at them.

Gluten is a stretchy protein found in grains such as wheat, rye, oats, barley and triticale. This protein gives bread the ability to rise and form a light airy loaf. Gluten-free food alternatives are often made with starches and additives rather than wholegrain flours. It is perhaps no surprise that one review found that gluten-free diets are often lower in fibre and higher in saturated fat. This review also noted that gluten-free diets tend to have a higher glycemic index (GI). This is not helpful for overall metabolic health and may leave you feeling hungrier sooner.

<table>
<thead>
<tr>
<th>NUTRIENT</th>
<th>MUESLI BAR</th>
<th>BREAD</th>
<th>B’FAST CEREAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Gluten-Free Muesli Bars (35g serve)</td>
<td>Fruit &amp; Nut Muesli Bars (45g serve)</td>
<td>Gluten-free 5 Seeds (2 slices 78g)</td>
</tr>
<tr>
<td>Energy – kilojoules</td>
<td>614</td>
<td>768</td>
<td>866</td>
</tr>
<tr>
<td>Energy - calories</td>
<td>147</td>
<td>183</td>
<td>207</td>
</tr>
<tr>
<td>Protein (g)</td>
<td>3.0</td>
<td>4.1</td>
<td>4.9</td>
</tr>
<tr>
<td>Fat (g)</td>
<td>6.7</td>
<td>0.9</td>
<td>5.9</td>
</tr>
<tr>
<td>- Includes sat fat (g)</td>
<td>0.9</td>
<td>1.1</td>
<td>&lt;1.0</td>
</tr>
<tr>
<td>Carbohydrates (g)</td>
<td>17.7</td>
<td>10.5</td>
<td>32.1</td>
</tr>
<tr>
<td>-Includes sugars (g)</td>
<td>25.1</td>
<td>7.8</td>
<td>3.0</td>
</tr>
<tr>
<td>Sodium (mg)</td>
<td>18</td>
<td>9</td>
<td>312</td>
</tr>
<tr>
<td>Dietary Fibre (g)</td>
<td>1.9</td>
<td>3.1</td>
<td>2.5</td>
</tr>
</tbody>
</table>
We compared the nutritional value of a muesli bar, mixed grain bread, and a flaked breakfast cereal compared with their gluten-free variants. Because the serve sizes aren’t the same, it’s hard to make direct comparisons about kilojoules/calories, but there’s not a lot in it. Two significant differences stand out. When it comes to protein, regular trumps gluten free by a significant margin. The same goes for dietary fibre (something most of us need a lot more of).

The down sides of gluten-free
Another factor to consider is the glycemic index (GI) of food. While the glycemic index of the bread we refer to above has not been tested, another similar gluten-free multigrain bread on the market was found to have a high GI (79). Many regular wholegrain breads have a low-medium GI, including this one with a low GI (53). Low GI foods give you more stable blood glucose levels following your meal.

Gluten-free diets tend to be low on grains that are an important source of B vitamins. For example, folate is essential prior to and during pregnancy to help reduce the risk of neural tube defects, and folate is also important for heart health.

Studies have shown that eating wholegrains regularly protects against type 2 diabetes and coronary heart disease. Avoiding gluten unnecessarily in the pursuit of good health may have the opposite effect.

The un-plugged truth
- The gluten-free diet is essential for people with celiac disease, but unlikely to be of benefit for the rest of us.
- A gluten-free diet should only be undertaken after a confirmed diagnosis and best managed with the help of a qualified dietitian.
- Gluten-free foods can be less healthy: lower in protein and fibre, and higher GI.

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.

KEEP GOOD CARBS AND CARRY ON
CAPSICUMS (SWEET PEPPERS)
Speedy underestimates the rate at which the Old World embraced the New’s zesty chilli. Try these hot peppers (pimiento) said Columbus proudly introducing them in 1493 – after all pepper (pimento or black pepper) was what he was looking for (well, he possibly said something like that). Within two hundred years they were widely cultivated throughout Europe, Asia and Africa as the tongue-tingling spice we know today.
At the same time a mild, sweet variety of capsicum was also evolving. And what a veg. Red, orange, yellow, green, purple: capsicum’s crisp, juicy flesh sets the taste bar high. It’s no wonder they have made themselves at home in kitchens around the world sliced or diced into salads, or stuffed, stir fried, roasted, and often peeled which is not as hard to do as it sounds. Just hold them over a gas flame with metal tongs or place under a very hot grill or on a lightly oiled tray in a hot oven until the skin is charred then drop into a plastic bag and seal. When cool, the skin will slip off easily. If you don’t have time to do this, you can buy them ready prepared from your favourite deli counter. There are numerous good brands of jarred “fire-roasted” peeled strips in olive oil.

**What to look for** Red, orange and yellow capsicums are not only sweeter than regular green ones, but they keep their colour better when cooked. Select well shaped, firm and glossy capsicums with bright, taut skins and their stems fresh and green. Watch out for soft spots, wrinkled skin or blemishes (that means they are starting to dry out). Select capsicums that are firm and glossy with a uniform colour. Avoid any with dull or wrinkled skin, spots or blemishes.

Store unwashed capsicums in a plastic bag in the fridge so they keep their crunch and sweetness. If you have picked up a plastic wrapped tray for a bargain price, unwrap them when you get home as they need to breathe a bit.

**What’s in them?** A medium raw capsicum (about 90 g or 3 oz) has about 80 kilojoules (19 calories), 1.5g protein, 0g fat, 3g carbs (sugars), 1g fibre, 2mg sodium, 135mg potassium and a low GI (estimated) as they have no starch. They are one of the best sources of vitamin C around.

**Some like it hot** The hot comes from capsaicin, which is found in its highest concentration in the chilli’s seeds and fleshy “placenta” material that is joined to the seeds says *Spice and Herb Bible* guru Ian Hemphill. It blows your mind because it releases endorphins which create a sense of wellbeing and stimulation. In spite of the inordinate preoccupation with heat in chillies, the tremendous flavour contribution made by dried chillies should not be overlooked says Ian. And there’s more. Research in recent years has provided some evidence that capsaicin can raise your metabolic rate. A meal containing freshly chopped chilli may also help reduce insulin levels. What’s not to like?

Extract from *The Good Carbs Cookbook* published by Murdoch Books and available online and in good bookstores.
IN THE GI NEWS KITCHEN
SPICE IS NICE WITH KATE HEMPHILL

This month Kate Hemphill showcases three spice blends – sambar curry powder, paella spice mix and Creole seasoning – that transform simple, relatively inexpensive family meals – a burger, a one-pot stew and stuffed peppers – into something you could serve for a more special occasion. Kate uses Herbies spices and blends, but you can substitute with whatever you have in your pantry. Kate 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).

STUFFED CAPSICUMS LOUISIANA STYLE
The Louisiana-style seasoning works amazingly with this healthy and flavoursome dish, giving the rice, beans and corn a huge lift. For meat lovers, serve alongside beef, lamb or chicken grilled with a sprinkle of the seasoning.
Prep time: 10 mins • Cook time: 1 hour • Makes: 6

1½ cups low or lower GI brown rice (such as Doongara or brown basmati)
6 capsicums, top cut off and seeds removed
1 red onion, finely chopped
2 cloves garlic, finely chopped
2 tbsp Creole seasoning
2 ripe red tomatoes, peeled and diced
½ cup corn kernels
400ml (14oz) can black beans, rinsed and drained

Pre-heat oven to 170C (340F). • Rinse rice and cook until tender, drain. • Meanwhile, sweat onions in a little olive oil until soft, then add garlic and spices. Stir for one minute, then add tomatoes, cooked rice, corn and black beans. Combine well and taste for seasoning. • Firmly stuff the capsicums with rice mixture, place lids on top, and bake for 40 minutes, or until capsicum is tender when pierced.

Per serve
1445kJ/345 calories; 14g protein; 2.5g fat (includes 0.5g saturated fat; saturated : unsaturated fat ratio 0.25); 60g available carbs (includes 14g sugars and 46g starches); 13g fibre; 455mg sodium; 967mg potassium; sodium : potassium ratio 0.47

INDIAN LAMB BURGER
These burgers make great picnic or party food cooked bite-size and served with raita. You can use any of Herbie’s many Indian spice blends in these burgers, depending on your mood. The mild sambar powder used here is perfect for younger children.
500g (1lb 2oz) lean lamb mince
1½ tbsp sambar powder
½ tsp salt
1 egg
1 tbsp grated brown onion
1 tsp grated fresh ginger
1 garlic clove, crushed
1 cup Greek yoghurt
1 small cucumber, diced
8 mint leaves, finely chopped
Turkish bread or burger buns
½ cup mango chutney
2 cups mixed salad leaves
fresh onion and mint for garnish, optional

Prep time: 15 mins
Cook time: 10 mins
Serves: 6

For burgers, pulse all ingredients in a food processor, or mix well in a large bowl with your hands. Shape into 6 burgers and refrigerate until ready to cook (up to 24 hours). • Combine the yoghurt, cucumber and mint to make the raita and season to taste. • Heat a grill or barbecue and cook burgers for 5–6 minutes per side. Allow to rest for 2 minutes before assembling burger. • Lightly toast bread or bun, if desired, and top with raita, chutney, salad leaves, burger and garnish fresh onion rings and mint leaves.

Per serve (with Turkish bread)
1200kJ/290 calories; 23g protein; 9g fat (includes 4g saturated fat; saturated : unsaturated fat ratio 0.8); 28g available carbs (includes 18g sugars and 10g starches); 3.5g fibre; 450mg sodium; 580mg potassium; sodium : potassium ratio 0.78

SPANISH CHORIZO & BEAN STEW
One pot stews are perfect for cooler days, and this dish benefits from a long, slow cook. This is a great dish to prepare ahead and it reheats well after storing in the fridge or freezing. Tip: check how hot your chorizo is, you may like to add some chilli powder if it is mild. Prep time: 10 mins • Cook time: 2 hours • Serves: 8

1 tbsp olive oil
2 red onions, finely chopped
4 cloves garlic, crushed
2 red bell peppers (capsicum) cut into 2cm pieces
¼ cup sherry vinegar
2 tbsp paella spice mix
2 x 400ml (14oz) cans crushed tomatoes
2 x 400ml (14oz) cans cannellini beans, drained
4 small semi-dried chorizo sausages, approx 400g (14oz), cut into ¾in (2cm) thick slices
flat leaf parsley
Preheat oven to 120C (300F). • Sweat onions in olive oil in an ovenproof dish on the stove top over low heat. Add garlic and capsicum once onions are soft. Pour in sherry vinegar and stir until evaporated, then add spice mix, tomatoes, beans and 1½ cups water. • In a large frying pan over high heat, briefly brown chorizo then add to stew. • Bring stew to a simmer, stirring, then place in the oven with a lid. Cook for 1½–2 hours until chorizo is meltingly tender. Check for seasoning and serve with parsley.

Per serve
1400kJ/335 calories; 20g protein; 15.5g fat (includes 5g saturated fat; saturated : unsaturated fat ratio 0.48); 22g available carbs (includes 11g sugars and 11g starches); 12g fibre; 790mg sodium; 840mg potassium; sodium : potassium ratio 0.94

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