Issue conflation leads to dietary confusion

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The recommendations for total fat, saturated fat and sugar in dietary guidelines seemed to be long settled, but suddenly the debate is flaring up again in New Zealand and internationally. Some, like Thornley et al., are arguing that the evidence suggests that major revisions are needed and others, like Jackson and Ni Mhurchu in this issue of the *Journal,* are arguing for retaining existing recommendations. If everyone is looking at the same set of studies and meta-analyses, why is there so much debate? One of the main reasons for the confusion is a conflation of issues, especially the conflation of dietary issues for weight loss, heart health, and sports performance. Separating these issues should help to show that the current dietary guidelines, while not perfect and immutable, are robust, clear and evidence-based.

Dietary guidelines move incrementally over time and each time they are reviewed, the evidence is extensively examined and analysed. The recent Australian Dietary Guidelines took about 5 years to revise, in part because of the extensive evidence reviews and population dietary modelling undertaken. There has been a move in recent years from nutrient-based recommendations to food-based and dietary pattern-based recommendations and the new Brazilian guidelines, which I believe are now the world’s gold standard, consider environmental sustainability as well. The reason for the shift has been an attempt within nutrition sciences to move away from what has been called ‘nutritionism’ which is a reductive understanding of nutrients as the key indicators of healthy food. People eat food, not nutrients, many different dietary patterns can be considered healthy and populations have food systems which have wide implications for culture, environments and climate change. Despite this move towards the bigger picture of food and dietary patterns, some nutrient-based recommendations and intake targets are still needed, especially for total fat, saturated fat and sugar. So how can we de-conflate the issue to bring a bit of clarity to the debate?

Let’s examine the notion that ‘a calorie is a calorie is a calorie’ (although we should now be talking about kilojoules, not calories). People often argue strongly for or against this notion and, in fact, both are right. For all metabolic processes, except one, the calories from different sources have different effects on the body in terms of lipoprotein metabolism, carbohydrate metabolism, immune modulation, cancer protection, neurotransmitter metabolic processes, except one, the calories from different sources have different effects on the body in terms of lipoprotein metabolism, carbohydrate metabolism, immune modulation, cancer protection, neurotransmitter effects and so on. This is an incredibly complex area which will keep nutrition researchers active for many decades to come. Saturated fat, however, already has several decades of research behind it. Indeed, at the risk of showing my age, I was one of many researchers undertaking detailed lipoprotein metabolism turnover studies in response to highly-controlled dietary manipulations over a quarter of century ago. The rock-solid, central planks of the saturated fat intake to heart disease relationship are that diets high in saturated fat increase LDL-cholesterol and that high LDL-cholesterol is a major risk factor for coronary heart disease. I agree with Jackson and Ni Mhurchu that it is damaging and unfaithful to the evidence to tell patients and populations that they can dismiss the current recommendations to limit their intake of saturated fat (including from coconut oil).

The exception mentioned above is, of course, energy balance. If the issue under discussion is weight control, then (apart from some minor variation around the efficiency of energy absorption) a calorie is a calorie. As the mixture of energy enters the blood stream from the gut as sugars from carbohydrates, fatty acids from fats, amino acids from protein, and alcohol, they are certainly metabolised by different pathways, but at weight maintenance, energy in must equal energy out. Period.

In a newly-released documentary called *That Sugar Film,* Damon Gameau undergoes a self-experiment of eating the equivalent of 40 teaspoons of sugar a day for 60 days. While he claimed that he was eating the same amount of energy and exercising as the same amount as he was prior to his sugar binge, he gained 8.5 kg. In reality, to achieve this weight gain over this short period of time he would have to have eaten more than 1000 extra calories (or 4,200 kJ) a day for 60 days. *That Sugar Film* is a powerful demonstration of how a high sugar diet and rapid weight gain can create all sorts of metabolic havoc (i.e. a calorie is not a calorie is not a calorie). But Mr Gameau is not that powerful that he can break the first law of thermodynamics (i.e. a calorie is a calorie is a calorie) – he ate much more energy than he thought he did.

The critics of the dietary guidelines say ‘Look what happened when we followed the low-fat dietary advice – we all got fatter’. This is usually a lead up to a promotion for a low-carb or paleo or Atkin’s or other high fat diet. What actually happened during the rapid rise in obesity over the last 20 years was like a case of Chinese
whispers. A series of well-controlled, covert dietary manipulation studies showed that a diet with a high percentage of fat (and thus low percentage of carbohydrate) is usually energy-dense and, because people tend to eat to a volume of food, the ad-libitum, higher fat diets resulted in more weight gain (or less weight loss) than high carbohydrate diets.\textsuperscript{7,8} But ‘reduce the percentage of fat from your diet’ is not a great message and it readily transmuted: when media got hold of it, the ‘percentage’ part was lost and it was often flipped into high carbohydrate diets help to lose weight; when the industry got hold of it, they reformulated – often by removing fat and adding sugar; when the marketers got hold of it, they made a packet out of low-fat diet books and; when the dieters got hold of it, they felt they could eat these low fat (high sugar) products with impunity. It appears that total fat intake of populations did not decrease in response to the low-fat messages and in some countries actually increased, while sugar intakes have generally increased over the decades.\textsuperscript{9,10}

So, the translation from the metabolic and epidemiological studies to the reality of population trends of diet and disease is anything but straightforward. This brings us back to diets and what should be recommended. Do diets work or not work? This question is usually asked in terms of weight loss and the unfortunate answer is that almost all diets work (in the short term when compliance is high) and almost all diets don’t work (in the long term when compliance is low).

So if your aim is to lose weight and keep it off, then you will need to find a diet (in other words, a set of eating rules or guidelines) that you can stick to for the next however-many years you want to live. You would be smart to keep it low in sugar to get rid of empty calories and keep it low in saturated fat for your heart’s sake – and the standard, but boring, dietary guidelines suggest just this. You should also make it low in red meat for your planet’s sake, but that is another story.

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References


