Why Can’t Nutritionists Agree about Anything?

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Abstract
Members of the general public are often heard to ask why nutritionists can’t agree on anything. The perception is one of a professional group hopelessly confused and divided. In reality, nutritionists do agree on issues that are well researched and well understood. For example, there are no disagreements about how to prevent vitamin deficiency diseases. Also, there is now a high degree of agreement about the role of dietary fats in the prevention of coronary heart disease. Three recent reports show a high degree of consistency on this subject, despite being prepared by different experts, from different countries, for different organisations. The desirability of reducing saturated/trans fatty acids and increasing polyunsaturated fatty acids is agreed in all reports. This consistency is not surprising. Coronary heart disease is a long-standing public health problem that has been extensively researched. However, the consensus about dietary fats and coronary heart disease goes largely unreported in the lay media – consensus does not make for good news. The media’s focus is now fixed on the latest public health nutrition problem – obesity. The obvious failure of dietary fat restriction to prevent the obesity epidemic has given rise to a plethora of opinions about the best ways of addressing the epidemic. Some of these recommendations are diametrically opposed, feeding the perception that nutritionists can’t agree on anything. In fact, these disagreements simply reflect the lack of research and resultant lack of understanding that accompanies the emergence of any major new public health problem.

Introduction
Members of the general public are often heard to ask why nutritionists can’t agree on anything. Certainly advice from nutritionists on contemporary issues can be diametrically opposed. The perception is one of a professional group hopelessly confused and divided. The reality is a little different. This paper will explore the underlying causes of this apparent confusion, highlighting the relevance of changing public health imperatives and the impact of the way nutrition science first conceives these problems, explores them and solves them. The debate about dietary fats and health will be used to illustrate the case.

The deficiency era
Historically the rules governing what people eat were primarily religious and cultural. The science of nutrition is a recent addition - its history goes back just 100 years or so to an era when nutritional deficiencies were common. At the time it was thought that there were only three nutrients – protein, fat and carbohydrate. Fat was very highly valued as it was a concentrated source of calories. Millions of people were stricken with vitamin deficiencies, but nobody knew about vitamins – they had not been discovered. In the 1920s in the south-east of the United States, pellagra was rampant. At the height of the pellagra epidemic 7000 people a year died from pellagra. At the time everyone was very aware of the problem; they just had no idea about the solution. The experts disagreed. No one knew there was too little niacin in the diet, because the corn was over-milled.

Following the discovery of the vitamins, the introduction of better food processing and vitamin fortification brought about amazing health benefits to the population within a generation. The identification of the health problem had been followed by scientific investigation, which solved the problem. The nutritionists all agreed about the solution to the problem. This consensus also shaped the meaning of “good nutrition” for decades to come. “Good nutrition” meant meeting all your nutritional needs. Advice about good nutrition was concerned with increasing dietary variety. The population was encouraged to choose from the five food groups, to eat fruit, to eat vegetables, to eat wholegrains. At a time when the food supply was restricted in both its quality and quantity the “good nutrition” message was basically to eat, eat, eat. Notions of constraint were totally absent.

The preventive era

Then things changed. In the late 50s and early 60s World War II and food rationing were things of the past; prosperity arrived and an era of abundance began – there was plenty of food. Nutrient deficiencies were no longer a significant problem but new public health issues emerged. These were diet-related but were not concerned with deficiency. They were the result of excess. People were certainly living longer but they were getting fat, getting diabetes and, most of all, they were getting coronary heart disease. There was an
epidemic of coronary heart disease – a major new public health problem. The preventive era had commenced.

In the 1970s nutritionists knew they needed to become less concerned about preventing deficiencies and more concerned about preventing so-called ‘diseases of affluence’, such as coronary heart disease. But there was a problem. While nutritionists might have understood the problem, they hadn’t yet worked out the solution – a little like their forebears who knew pellagra was a problem but hadn’t yet discovered niacin. In the 1970s nutritionists disagreed about the likely causes of the epidemic of coronary heart disease? Some thought sugar was the problem. Others said no; fat is the issue. While nutritionists all agreed about how to deal with vitamin deficiencies, they just couldn’t agree about the solutions to the new problems they faced. Naturally, these differences were played out in the media.

Leading nutritionists of the time were faced with a dilemma: what should the general public be told about preventing major public health problems when all the answers are not known?

When the first Dietary Guidelines for Australians (1) were released in 1982 they included advice to:
- Eat less salt
- Eat less sugar
- Eat less fat

These were educated guesses at the time but they drove a major change in the meaning of the term “good nutrition”. The notion of constraint was introduced for the first time. People were urged to eat less of things that were thought to be causing the problems. Most prominent among these was the message to eat less fat. Fat was really bad – fat caused heart disease, breast cancer and bowel cancer. And fat made you fat. Starch had to be good, simply because it wasn’t fat.
Although, by today’s standards, the scientific evidence justifying this dietary advice was extremely weak, it was all the experts had to go by. But, in the process, they created a strong belief system. The Dietary Guidelines became gospel – a powerful model of “good nutrition”, developed when the problem was big news in the media but before the key research questions had been answered.

**Bringing science to the preventive era**

During the 1980s, very large nutrition studies were commenced in the United States that are still running to this day. They were designed to provide insight into the links between diet and health – to test existing hypotheses and to generate new hypotheses. The results have been spilling out over the last decade or so and they have been very challenging (2-4).

How did the new model of “good nutrition” stand up to such investigation? Not too well. Did starch turn out to be very healthy? No. Was fat very bad? No. Was fat intake linked to breast cancer or bowel cancer? No. Was total fat intake was linked to heart disease? No, but fat type certainly was.

Some of the best guesses made in 1982 turned out to be wrong. The results of these studies demanded a reappraisal of “good nutrition” in the preventive era. This fine-tuning of the concept of “good nutrition” has itself been a source of conflict. The old beliefs were challenged by some and defended by others as the science unfolded. A lot of the apparent confusion and conflict see among nutritionists is due to the ever-changing backdrop of public health problems and the evolution of “good nutrition” advice designed to address these health problems. These are always out of phase – decades out of phase.

**Evidence on fats**

The latest scientific evidence about dietary fats and health illustrates the point. In recent months two major reports on dietary fats have been released - the new Dietary Guidelines for Australians by the National Health & Medical Research Council (5) and a report by
Expert Recommendations on Fats

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<td>8%</td>
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<td>8-10%</td>
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Significant aspects of the Heart Foundation’s recommendations on dietary fats included the following:

- TFAs were considered as equivalent to saturated fatty acids.
- The recommendation for saturated plus trans fatty acids was lower than previous recommendations, just 8% of dietary energy.
- The recommendation for n-6 polyunsaturated fatty acids was relatively high, 8-10% of dietary energy.
- The recommendation for n-3 polyunsaturated fatty acids was relatively high, 2 grams per day.
- There was no recommendation for monounsaturated fatty acids.
- There was no recommendation for total fat. Recommendations were based on fat type.

The two new reports are quite consistent with that of the Heart Foundation. With respect to saturated plus trans fatty acids, the WHO has followed the Heart Foundation down to 8 per cent while the Dietary Guidelines for Australians have stayed with the figure of 10 per cent. These differences are very minor. There is general agreement across all three
reports that this group of fatty acids needs to be restricted in the diet, because they increase blood cholesterol and the risk of heart disease.

With respect to n-6 polyunsaturated fatty acids, again there is broad agreement. There is conclusive evidence that n-6 polyunsaturated fatty acids are protective against cardiovascular disease. The relationship has received new emphasis in recent years. The two latest reports do not push the recommendations up to the Heart Foundation’s heights, but all recommendations overlap. And they are substantially above the level of n-6 polyunsaturates in the current Australian diet. This represents an opportunity for traditional, polyunsaturated sunflower oil.

With respect to n-3 polyunsaturated fatty acids, the evidence for benefit is a little less than that for n-6, but is growing. The recommendations differ but the overall direction is clear: n-3 polyunsaturated fatty acids are beneficial.

Another consistent element is that none of the reports makes any recommendations about monounsaturated fatty acids. This is because monounsaturates are thought to be biologically neutral. However, monounsaturated fatty acids remain a good substitute for saturated fats and this substitution is cholesterol-lowering. There remains a large opportunity for monounsaturated sunflower oil in the food service sector as a replacement for palm oil and tallow. The Heart Foundation has plans to extend its successful Pick the Tick program into the food service sector, presumably to drive change towards greater use of monounsaturated oils. This will probably occur in 2005.

Three points can be made:

- Deficiency era concepts do not feature strongly. The reports largely assume that calorie and vitamin needs will be met.
- These recommendations relate, almost entirely, to the prevention of coronary heart disease.
- There is a high level of consistency across the reports.
The coronary heart disease epidemic reached its peak in the late 1960s and consensus about the dietary advice to prevent it has finally emerged nearly four decades later. The general public will probably not hear of this consensus through the media. The media are already focussed on the new public health problem – obesity.

The obesity era
While the prevention of coronary heart disease has been a considerable success, attempts to prevent obesity have been an unmitigated disaster. Since the early 1980s, the message to the general public for the prevention of obesity was “eat less fat”. As the obesity epidemic gathered pace the emphasis on this message increased considerably. It was a message that both the general public and food manufacturers heard loud and clear. The national diet changed. And what was the outcome? In the United States, Australia and other countries, as dietary fat intakes fell, obesity rates skyrocketed upwards. This is one of the most confronting findings in recent times – reducing dietary fat intake has had absolutely no beneficial effects on the prevalence of obesity.

It is not surprising that there are differences in the recommendations from expert bodies about total fat intakes. There is no consensus about how much dietary fat is desirable. The Heart Foundation made no recommendation about total fat in 1999, because it found total fat was not linked to heart disease risk. The Heart Foundation has since completed a review on dietary fat and obesity and found that the risk of obesity may start to climb when dietary fat intakes increase above 35% of kilojoules. The Australian Dietary Guidelines also make no recommendation about total fat intake but do suggest that the population ‘moderate’ their intake. For overweight people, quite severe restrictions of dietary fat are recommended, down to just 20-25 per cent of kilojoules. The WHO guidelines are global, taking in both developing and developed countries, so their total fat recommendation of 15-30 per cent is broad. As just about every developed country has a total fat intake of greater than 30 per cent, this amounts to a recommendation to restrict dietary fat intake. To a greater or lesser extent, all reports still lean towards the view that that the best means of preventing and treating overweight is to restrict dietary fat. This is due more to the lack of an alternative to offer than to the proven efficacy of this strategy.
The over-emphasis on reducing dietary fat to prevent obesity is coming under increasing challenge. For three decades, the Dr Atkins approach to weight control, based around severe restrictions of carbohydrate and no restriction of fat, was pilloried by many healthy authorities. Neither the critics, nor the advocates, ever had much scientific evidence to support their case. In the last two months, three studies comparing low carbohydrate diets with more conventional weight loss diets have appeared in the scientific literature (8-10). Superior weight loss was achieved on the low carbohydrate diet in all three studies. Needless to say, these research findings have made great news. The media loves dissent. So the general public hears that diametrically opposed nutrition strategies are being recommended as the best means for managing the same issue. In a way this parallels the arguments between respected experts four decades before as to whether sugar or fat were the main cause of the heart disease epidemic. When the answer is unknown, the advice reaching the general public will always be contradictory and confusing.

Currently, nutritionists do not have a clue on how to manage the obesity epidemic. As a result, the “solutions” offered to the general public are really no more than options to be explored – limit food advertising to children; fix up the school canteens; ban video games and television; cut out soft drinks; eat more vegetables; reduce portion sizes; blame MacDonalds and so on. Even the role of dietary variety, a fundamental tenet of past models of “good nutrition” is being challenged. People with high dietary variety are at greater risk of putting on weight. Nutritionists’ opinions about the prevention of obesity do not agree simply because nutritionists don’t know the answer. It might take 30-40 years before there is a consensus on the best means of managing an obesity epidemic. In the meantime, perhaps the best thing we can do is totally reverse our “good nutrition” advice of 50 years ago to eat, eat, eat and replace it with eat less, eat less eat less.

Conclusion

In conclusion, public health nutrition problems change over time. This has demands changes in nutritional advice to the general public. The advice to address the nutritional
deficiency epidemics was different from that needed to address the coronary heart disease epidemic. And the advice to address the obesity epidemic will be different again. However, the emergence of a public health problem and clarification of the correct nutritional messages to address it are usually thirty or forty years out of phase. The public is engaged with an issue early in the peace, when it’s news. This is the time when nutritionists know least about what to do and say. It was ever thus.

References
Homes MD et al. JAMA 1999;281:914-20. [fat and breast cancer]