

Discussion Session 1 – Nutrition comes first

The audience were struck by the low cost of a nutrient-adequate diet in the USA reported by Dr Smith. It was asked how great a difference micronutrient fortification of individual foods had made in this work. Many of the attendees also wished to know whether the same results could be expected in New Zealand. They questioned which foods were included in the least-cost diets: were these convenience foods, or foods requiring much preparation? This will impact the acceptability of cheap diets for consumers, who are increasingly time-poor. A very pertinent question arose on the difference between nutrient-adequate and optimal or healthy diets. These are of course different, with the latter being more desirable, but likely more expensive.

The audience also asked how the prices of foods in these studies would change if full environmental costings were included. This is the difference between price and full cost, which includes environment and health, as well as any subsidies that influenced the price of the food. The group noted that it would also be interesting to see affordability of nutrition alongside local living costs, such as rent and power.

When discussing the availability of nutrients globally, the dialogue raised what the differences and barriers between nutrient availability and nutrient consumption might be. Further, what steps can be taken to distribute nutritious foods more fairly around the world? It was floated that perhaps those who get excess nutrients and can afford to eat less should do so, to free up nutrient availability for those less fortunate. There was particular interest in why calcium and vitamin E were the nutrients that showed up as deficient, rather than others (such as iron and vitamin A) that are more widely discussed. Iodine was another nutrient of interest.

The reductionist approach of the DELTA Model in analysing the food system was criticised: it presents the availability of individual nutrients from individual foods, rather than their combination into diets. It was suggested that further value could be taken from the model by including the human factors of how food is consumed.

Another interesting question was how environmental factors and costings could be integrated with nutritional data. Do nutrient deficiencies relate to soil deficiencies? Has nutrient quality in foods changed over time as a result of environmental changes?

There was some surprise at Dr Smith's assertion of low availability of many nutrients in New Zealand. Many in the audience were very surprised that a country that produces so much calcium and vitamin C in its foods could not have enough available for its own population. Possible causes of this that were suggested included market influence and the fact that New Zealand exports such a high proportion of its food production.

Several audience tables floated the idea of reducing exports of nutrient-rich foods, to the extent that we retain enough to achieve nutrient sufficiency for our own people. The risk of not doing so is that we continue to have much of the population 'surviving, rather than thriving'. This is of particular concern for children in New Zealand, and data is lacking here, given that the last childhood nutrition survey was conducted in 2002.

Countering these sentiments were others who accepted that human choice is a big driver of what is exported and what is retained. If consumers are not buying something here, it drives the producers to export. Furthermore, distribution of food and

nutrients in New Zealand is not equitable, partly due to individual choice, but partly due to other factors. One such factor is the lack of supermarket competition, which has a strong influence on the cost and availability of food to New Zealand consumers. Others were interested in knowing the health impacts of sub-optimal nutrition, and who in our society is bearing these costs?

In response to the talk by Prof Huppertz, the audience raised many more points relating to the discussion of nutrient bioavailability and quality. For example, discussing that the amino acid profiles of different plants differ, and that the amino acid profile of plant-based meals can be improved through identifying foods with complementary amino acid profiles. The role of amino acids beyond protein synthesis was also not covered by the speaker – these nutrients have a variety of functions and outcomes once they are absorbed, with outcomes that extend beyond nutrition to broader health.

Concern was raised that factors like bioavailability are not considered in new dietary trends, such as the rise of vegetarianism and veganism. Is the general level of nutrient quality in foods available from food banks good? Should this be a concern? Could processed foods be designed and manufactured with bioavailability and global nutrient deficiencies in mind in the future?

Some of the audience wished to clarify the bioavailability discussion. It is important to realise that bioavailability is considered when setting recommended intakes, so that comparing bioavailable quantities of nutrients to recommended intakes was not comparing apples with apples. However, this does not change the key message that bioavailability differs widely between different foods.

The audience were also interested in nutrient quality for other nutrients. Calcium and protein were the focus of the talk, and are very important nutrients, but what data exists for the bioavailability of vitamin C, for example? There are also important interactions between nutrients during digestion, such as the role of vitamin C in the absorption of non-haem iron. On a related note, what do we know about nutrient bioavailability in novel foods, such as alternative proteins? These are important factors to consider.

Professor Huppertz' discussion of food labels also sparked much debate. Do food labels need to be longer, and show nutrient quality and bioavailability as well as composition? Just because the label says 'contains calcium' does not mean that this calcium is bioavailable. If we were to alter food labels, changes in bioavailability due to preparation, cooking and processing, and combinations with other foods, would also need to be considered.

The role of the consumer is important here. What changes should be made to nutrition labels to actually inform the consumer and thus achieve the purpose of the label? Adding more information could just add to consumer confusion. Further, nutrition labels are currently more widely used by wealthier or better educated individuals, who have a better understanding of the links between food and health and can afford to be more selective in their food choices. How can labelling change to better serve all consumers?

The lack of consumer knowledge on nutrition was a concern here. It was questioned why this lack of knowledge is so widespread. Is this due to education, modern food behaviours, or the globalisation of food? What can we do to improve this in New Zealand? One suggestion was using the school lunch programme. It was felt that our early exposure to food was formative for later life, and thus early nutrition education was vital.

*Discussion summaries were collated by Dr Nick Smith, based on written notes collected from the tables in the room and video recordings of the facilitated discussion sessions on the day.