

## Plenary 2: Functional Food

### Functional foods: understanding consumers' perceptions, preferences and drivers of consumption

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**Background** – According to Margaret (1) “... a food can be regarded as functional if it is satisfactorily demonstrated to beneficially affect one or more target functions in a way that is relevant to either an improved state of health and well-being and/or to a reduction of risk of disease.” Further, Margaret argued that functional foods must demonstrate their effects in amounts that can normally be expected to be consumed in the diet.

The increasing availability of functional foods (FF; alternatively known as nutraceuticals, pharma foods, bioactive foods etc.) demands an understanding of the consumers' motivations in order to determine the likely role they will have on diets and diet-disease relationships. Moreover, there is a tacit belief that it may be easier to change food composition rather than attempt to change dietary behaviours. For example, the high cost and modest 'success' of trying to encourage many western populations to eat more fruit and vegetables raises a number of questions about behavioural approaches. However the rise of functional foods raises questions of whether consumers possess knowledge and motivation to 'self medicate' to achieve an improved state of health or disease risk reduction. Acceptance of FF may depend upon an individual's perceived vulnerability to disease within the broader context of all the other factors that impact upon food choice (e.g. cost; convenience; taste etc.). For example, recent evidence has determined that consumers will not compromise taste for health benefit. Communication of “credence attributes” of FF (trusted information on benefit, e.g. content, physiological effect or health claims) is also important. Furthermore, acceptance issues require an understanding of attitudes to food technology because the FF may be achieved through novel technology. Therefore consumer acceptance research should include assessment of neophobia, perceived risks and benefits.

**Objective** – To review empirical evidence from the literature and our own recent studies and draw conclusions on what is known about consumer perceptions, preferences and drivers of consumption, and the limitations and constraints impeding uptake of FF. To discuss how this information can be used to inform change in the food supply, communication strategies for dietary change and positive health outcomes.

**Design** – Review of methods will include socio-demographics, exploratory attitude surveys, and the application of behavioural theory, taste tests, concept choice modeling, motivations and cognitive structures as applied to FF. Additionally data will be derived from our recent studies (from Australia and the USA) on novel sources of long chain omega-3 (2,3); protein for weight management (4); selenium for cancer risk reduction (5); and a range of 'bioactives' (unpublished). Our methodology included concept testing (conjoint analysis) and behavioural theories (Protection Motivation Theory and the Theory of Planned Behaviour) located in food choice models that integrate food, people and society.

**Outcomes** – Exploratory attitude surveys reveal changing attitudes over the past few years (6). Knowledge of (some) micronutrient and macronutrient function is poor (5) and incomplete (4). Food vehicles (base foods) and information (health claims) were found to be the most important attributes of FF whilst self efficacy (3) and attitudes drive intentions to consume. Perceived vulnerability to disease tends to be only a minor driver of intentions to consume. Attitudes towards novel technologies differ by population segments. Females and older consumers can be generally less positive towards FF.

**Conclusion** – Without an understanding of consumer acceptance, the benefits of FF will not be realized; therefore, testing food concepts and measuring attitudes are useful in determining potential use of FF.

#### References

1. Margaret A, (2002) *Concepts of functional foods*, Brussels: ILSI Europe: concise monograph series
2. Cox DN, Evans G & Lease HJ (2008a) Predictors of Australian consumers' intentions to consume conventional and novel sources of long chain omega-3 fatty acids *Public Health Nutrition* 11, (1) 8-16
3. Cox DN, Evans G & Lease HJ (2008b) Preferences for conventional and novel sources of long chain omega-3 fatty acids: a conjoint study *Food Quality & Preference* 19, 306-314
4. Cox DN (2008) Understanding consumers' perceptions of functional ingredients: Studies of selenium and protein. *Nutrition & Dietetics* 65 (Suppl 3) S86-88
5. Cox DN & Bastiaans K (2007) Understanding Australian consumers' perceptions of selenium and motivations to consume selenium enriched foods. *Food Quality & Preference* 18 66-76
6. Lahteenmaki L, Lyly M, Urala N (2007) Consumer attitudes towards functional foods in Frewer L & van Trijp H (eds) *Understanding consumers of food products*. Woodhead: Cambridge