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Australian consumers' knowledge of soy foods and their potential health benefits

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Background – Considerable research has been conducted on the potential health benefits of soy foods. However, there is a lack of information available on Australian consumer knowledge of soy foods and their perceived health benefits. In particular understanding how negative media portrayals of soy intake with a potential link between soy and cancer may have impacted consumers' attitudes and beliefs has not yet been explored.
Objective – This study aimed to assess Australian consumers' understanding of soy foods and the potential health benefits or concerns about their consumption.
Design – Five semi-structured focus groups were conducted using a purposeful non-probability sample including: (1) health food shoppers, (2) organic food shoppers, (3) soy consumers, (4) non-soy consumers, and (5) people who suffer from or live with someone who suffers from some type of food allergy. Thematic content analysis and constant comparison by two coders was conducted.
Outcomes – Four themes were identified from consumer responses which encompassed: influences on shopping habits; understanding of soy foods; influence of media and provision of credible information about soy. Participants were aware of the potential health benefits linked to soy consumption with some reservations. Soy foods were viewed as healthy and recognised as part of the Asian cuisine. Food consumption habits were primarily dictated by house hold composition and their respective food requirements. Taste featured highly in terms of a perceived barrier. A lack of understanding how soy foods are produced and their role in the diet were raised. Participants were interested in credible information on soy foods. Media coverage regarding soy was not perceived as reliable.
Conclusion – Australian consumers generally view soy foods as healthy and consumption of all foods in moderation as being the key to healthy eating. Issues raised have implications for designing communications and providing opportunities for trialling soy foods.

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Mechanisms behind the cholesterol-lowering effect of soluble dietary fibres

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Background – Soluble dietary fibres (SDF), such as β-glucan and arabinoxylan have been reported to lower plasma cholesterol in the human body. They act by preventing bile salts (BS) from being reabsorbed from the distal ileum into the entrohepatic circulation and increasing BS concentration in the faeces.. In the hepatocyte, the bile acid (BA) pool is decreased causing the activation of cholesterol 7α-hydroxylase which in turn enhances the *de novo* synthesis of BA from the cholesterol intra-cellular pool. Consequently, cholesterol and low-density lipoprotein (LDL) receptors biosynthesis is increased, resulting in depletion of plasma cholesterol. However, mechanisms by which SDF interact with BS are yet to be defined sufficiently to identify optimal SDF characteristics.
Objective – To test hypotheses for the action of SDF on BS, in order to identify important fibre characteristics.
Design – Hypothesis 1: SDF forms a barrier between micelles & enterocytes. This will be tested by measuring the ability of BS micelles to cross a range of SDF-based gel barriers. Hypothesis 2: There is molecular binding between SDF & BS at a molecular level. This will be tested by NMR titration experiments. Hypothesis 3: BS micelles are entrapped in the SDF matrix. This will be tested by fluorescence and diffusion-ordered NMR spectroscopy.
Outcomes – A practical method for studying the transport of bile salt mixed micelles through viscous solutions and gels of soluble dietary fibres has been developed. Transwell® inserts with a microporous (0.4 μm) membrane conventionally used for cell culture have been used as a support through which passage of micelles can be quantified. Analysis of arabinoxylan / bile salt micelle mixtures by ^{13}C NMR shows no measurable change in bile salt chemical shift values, providing no evidence for direct molecular binding between the fibre and bile salts.
Conclusion – Modern physico-chemical techniques can be used to test alternative hypotheses for the interaction of soluble dietary fibres with bile salt micelles, and help to identify optimal fibre sources for cholesterol reduction.