# Developing a process for assessing evidence to allow health claims on food labels

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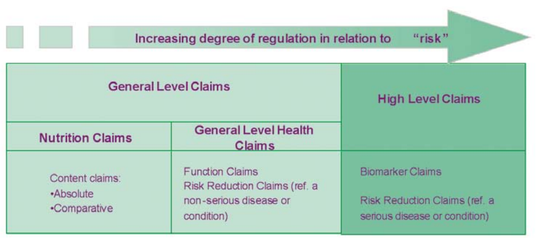
## Introduction

- Health claims about diet-disease relationships have generally not been permitted on food labels in Australia and New Zealand.
- In future, health claims will be permitted if they can be substantiated.
- The framework differentiates three classes of claim which require different processes for substantiation (Fig 1, 2, 3).
- Claims should be reviewed (possibly every 5 – 10 years, or if significant new evidence emerges) to ensure they remain up-to-date.
- Substantiation for a health claim does not aim to assess the safety of foods carrying claims; this is done by other FSANZ processes. Conversely, a safety assessment by FSANZ does not constitute permission to make health claims.

### Figure 1. Claims Classification Framework




### Figure 2. Differences between general level health claims and high level health claims

- General level health claims
  - do not reference a serious disease/condition or a biomarker of a serious disease/condition.
  - Two types
    - nutrition content - presence or absence of a property of food
      - e.g "Product x contains calcium"
    - general level health - relationships between food/property and health effect
      - e.g. "Product x contains calcium… good for strong bones"
- High level claims
  - reference a serious disease or a biomarker for a serious disease/condition
    - a serious disease is one which must be treated by a doctor
    - a biomarker (or biological markers) is a measurable parameter that is predictive of the risk of human disease, disorders, conditions or defects. The biomarker is not a measure of the disease, disorder or condition itself.
      - e.g. "Product x contains calcium… reduces risk of osteoporosis" (disease as subject of claim)
      - e.g. " Product x contains calcium … increases bone mineral density" (biomarker as subject of claim)

### Figure 3. Process for substantiation of health claim

| General level health claims | High level health claims | Therapeutic claims |
|---|---|---|
| Permitted where substantiated<br><br>Substantiation may draw on well-recognised and broadly-accepted information (e.g. as found in the Australian dietary guidelines or certain textbooks). If information regarding the potential diet-outcome relationship cannot be derived from this type of source, then the manufacturer must compile evidence to support a claim using the framework and be able to produce this if requested by an enforcing agency (i.e. the jurisdictional health departments). | Prohibited unless pre-approved by FSANZ<br><br>Manufacturers (or others) may compile evidence using the framework and submit to FSANZ for pre-approval. | Prohibited |
| A range of example general level derived from authoritative statements has been pre-approved. | The process was used to examine 7 potential diet-disease relationships to determine if a health claim could be substantiated. | |

## Principles underpinning substantiation of a diet-disease relationship for a health claim (Figure 4)

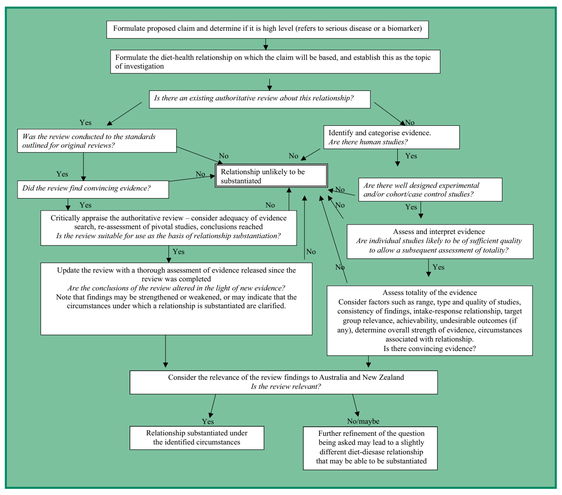
A 'diet-health relationship' is any relationship between intake of a food component, a food, a diet or dietary pattern, and any physiological function, health or disease outcome.

1. identify and categorise all the evidence: the totality of evidence should be assessed
2. assess and interpret the evidence of the relationship, study-by-study,
   - assess studies for strength of design: selection bias, measurement of exposure and outcomes, control of confounding
   - relevance of studies using supplements (if the relationship is about dietary intake), secondary prevention studies if a primary prevention relationship is under consideration, study duration
   - supporting information supplied by bioavailability, animal and cellular studies
3. evaluate the totality of the evidence across studies to determine if a relationship can be substantiated
   - if so, is the relationship convincing, probable or possible (Fig 5)
   - if so, are there particular circumstances (e.g. age groups) that limit the generalisability of a claim that might follow from the substantiation
4. determine whether the relationship is relevant in Australia and New Zealand

Reviews to substantiate a diet-disease relationship to underpin a claim can be done de novo or can be based on a pre-existing review or meta-analysis by an authoritative body. If using a pre-existing review, then it should be assessed

- to determine the extent to which it addresses the relationship under review,
- to ensure that it conforms to the principles laid out above,
- and updated to determine if new evidence alters the conclusion (Fig 4)

### Figure 4. Process for substantiating diet-health relationships that will form the basis of proposed high level nutrition, health and related claims




### Figure 5. FSANZ Levels of evidence

- **Convincing evidence** – consistent associations between the diet/food/component and the health outcome, with little or no evidence to the contrary from a substantial number of human studies of acceptable quality, preferably including both observational and experimental studies and preferably conducted in different population groups. Any intake–response relationships support a causal relationship and the relationship should be biologically plausible. Supporting evidence sources should be consistent with the findings of human evidence. A convincing relationship is one where it is unlikely that a new study could overturn the relationship
  - Convincing evidence is required to substantiate a high level claim
  - It is unlikely that evidence based solely on case-control studies, would be enough to achieve this level
  - Cannot be based on cellular or animal studies alone
- **Probable evidence** – has a number of acceptable human studies, preferably including both observational and experimental studies; associations are either less consistent across studies or the evidence base is insufficient to make a more definite judgement (e.g. limited number of studies, studies with limited duration, small sample size or with incomplete follow-up). Some of the evidence may have only recently emerged and still be subject to ongoing research. Mechanistic and laboratory evidence are usually supportive and the relationship should be biologically plausible.
  - Probable or convincing evidence is required to substantiate a general level health claim
- **Possible evidence** – studies generally indicate a relationship exists, but the studies may be limited in number, level (e.g, only supporting evidence sources may be available) or consistency, or may reflect predominantly emerging evidence. There may or may not be supportive mechanistic or laboratory evidence and the relationship should be biologically plausible. More and higher quality studies are required to support the tentative relationship.
- **Insufficient evidence** – there are only a few studies, which while generally consistent, are not of appropriate quality to substantiate a relationship. More well-designed research is needed.

## Road testing the Process for substantiating a high level claim

Following public consultation reviews regarding possible high level claims in 7 areas were commissioned (Fig 6) and these were examined by a Scientific Advisory Group of external experts.

*Learnings from this experience:*

- The importance of framing the question correctly
- The need for an advisory group to counteract possible reviewer bias
- "Biomarker" needs to re-defining to highlight that a change in the level of a biomarker should predict a change in the health outcome
- Questions from potential users regarding exactly how many studies with how many subjects constitutes a sufficient evidence base for a claim – this aspect of the user guide needs strengthening
- That there is less evidence to support diet-disease relationships than is commonly assumed in certain areas – need to clarify the difference in evidence required for health claims and general advice

### Figure 6. Possible high level claims investigated to road test the substantiation framework

| Area of review commissioned | Comments |
|---|---|
| Calcium and/or vitamin D and risk of osteoporosis | Relationship regarding increased calcium/vitamin D combinations and anti-fracture efficacy in the frail elderly, particularly women, substantiated; relationship between calcium supplementation and increased bone density across a broad age range substantiated |
| Folate and risk of neural tube defects (NTDs) | Relationship between increased intake of folic acid and reduced incidence of NTDs substantiated<br>Relationship between increased intake of naturally occurring folate and reduced incidence of NTDs considered to be 'possible' rather than 'convincing' and so not substantiated for either a general level or a high level claim |
| Dietary saturated fat and/or trans fat and risk of coronary heart disease | Relationship between decreased intake of saturated fatty acids and lower total and LDL cholesterol levels substantiated<br>Relationship between decreased intake of saturated fatty acids and reductions in coronary heart disease, or relationships with trans fatty acids were considered to be 'probable' rather than convincing and so not substantiated for a high level claim |
| Dietary sodium and/or potassium intake and risk of elevated blood pressure | Relationship between decreased sodium intake and decreased blood pressure substantiated for the general population and for hypertensives |
| Consumption of fruit and vegetables and risk of coronary heart disease | Still under review<br>Experimental biomarker studies support the numerous cohort and case-control studies – can the effect can be attributed to fruit and vegetables per se?<br>Studies consistently show that moderate intakes are associated with lower risk than low intake; less consistent evidence that high intakes decrease risk compared to moderate intakes |
| Consumption of whole grains and risk of coronary heart disease | Still under review<br>Can evidence from experimental studies showing that soluble fibre containing foods such as oats be extrapolated to support a claim which will be mainly used on wheat products (wheat does not contain soluble fibre)? |
| Long chain omega 3 fatty acids and risk of cardiovascular disease | Still under review<br>The recent Cochrane review included studies of short-chain omega-3s, a study by an author who has been recently accused of fabricating data and a study that was published after the close-out date for study inclusion<br>The smaller studies do not replicate the findings of the GISSI study that an effect is seen after only 4 months<br>Intermediate marker studies are difficult to use as many of these (e.g. CIMT) are not yet well accepted as biomarkers of cardiovascular disease |

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