Framework Consultation process

Key issues/conclusions
Framework

• 2005-6 process IOM recommendations adopted almost completely.
• Introduced EAR as well as RDI and AI
• Introduced AMDR
• Introduced upper limits for all age groups
• Recording of discussions about IOM values very limited. Very limited process
• With selected review opportunity for more detailed investigation possible
Consultation-2011-? Revise NRVs

- More detail on process and evidence requested
- Purpose/use of NRVs
- Ongoing confusion about inadequacy assessment of groups and individuals with EAR eg 10% <EAR interpreted as a problem
- Detailed description of EAR/RDI/AI
- Detailed handbook of how to establish an EAR
- Change in terminology rejected.
- Issues of errors in scaling/extrapolation need correction. Consistency required
- Upper limits low and cause problems for FSANZ and need to be justified not just borrowed from IOM.
- Framework requested to guide working groups.
Recommendations 2012

• Following consultation across Australia and New Zealand (3 public meetings with targeted invitees)
• An immediate review should be conducted of the chronic disease and macronutrient section.
• A less comprehensive review should be conducted of B12, choline and pyridoxine, zinc (after findings are released from iZiNCG), fluoride ULs, selenium ULs, energy, protein and chloride as funding and time permits.
• A steering committee should be established to oversee the review process and act as an expert reference or advisory group.
• The review should begin by engaging a technical working group/ or consultant to develop the methodological framework.
Consultation 2012

- Greater transparency in the decision making process including clear justification for inclusion of experts and determination of nutrient values
- Clear documentation of all underlying decisions, evidence, assumptions and rounding processes
- Development of robust methodologies to construct recommendations, particularly for nutrients with gaps in the data for specific population groups.
Framework 2015-no automatic review

• The first step in the derivation of a new numerical value is to clearly define the issue in relation to the current recommended value(s) and any special issues associated with the nutrient.

• After defining the question, Nutrient EWGs need to identify the focus of the review, including: (i) the form of recommendation (e.g. UL, EAR); (ii) the life stage population group of relevance (e.g. infants, children, adults); and (iii) health criteria and outcomes (nutritional deficiency or chronic disease prevention).

• The physiological and biochemical indices of a nutrient deficiency state need to be clearly defined, including measurement methods.
Framework 2015

• Endpoints relevant for the assessment of deficiency status and chronic disease prevention should be clearly defined in advance of selecting the evidence and justified.

• Recommendations for deficiency prevention should be derived according to either the factorial or dose-response approach.

• For the prevention of chronic disease, the evidence will be a mix of observational and intervention studies.

• Meta-analysis and meta-regression should be used to incorporate all data available.
<table>
<thead>
<tr>
<th>option</th>
<th>criteria</th>
<th>frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upper Level of Intake</td>
<td>Good evidence of an adverse effect in humans at realistically achievable intakes; AND Sufficient data to support establishment of a dose response relationship.</td>
<td>Expressed per day, week or month as appropriate for individual nutrients</td>
</tr>
<tr>
<td>Provisional UL</td>
<td>Sufficient evidence of adverse effects in humans at realistic levels of intake; AND Nature or extent of the evidence is insufficient to determine a point estimate of the safe upper level with reasonable confidence.</td>
<td>Expressed per day, week or month as appropriate for individual nutrients</td>
</tr>
<tr>
<td>Not determined</td>
<td>An absence of evidence of hazard; OR Some evidence of potential adverse effects at high intake levels well above that normally achievable in the diet; OR The evidence is insufficient</td>
<td>N/A</td>
</tr>
<tr>
<td>Not required</td>
<td>Good quality evidence demonstrating no adverse outcomes from nutrient intakes well above amounts normally achievable from the diet.</td>
<td>N/A</td>
</tr>
</tbody>
</table>
Folate-up, down and up

- 1991- most countries 200-400ug free folic acid
- Australia 1977 300ug, 1980 400ug, then reduced to 200ug DFE (ie 100ug free folic acid). Criterion: RBC folate>305 nmol/l-1962
- USA 1989 reduced to 180ug DFE from 400 1980, pregnant 800 to 400
- IOM 1998 RDA back up to 400, Australia RDI same. UK RNI 200, EFSA(PRI) 330
- Illustrates problem for harmonisation as data and criteria used were much the same.
Problem of folate for EWG

• Can you dictate how a group should evaluate data, especially when there is very limited data on deficiency?
• Food folate is hard to measure so we don’t really have an accurate idea even what the current AI is (assuming our population is replete). Australia intake >> RDI
• Assays of serum and RBC folate are variable (especially latter)
• Few studies will achieve 50% of population adequacy. Need to integrate studies rather than pick one or two and come up with closest guesstimate.
• RDI much simpler concept originally- covers virtually all.
• EAR harder to find. CV unknown- 10% wild guesstimate. 2 SDs (97.5% pop) adds more precision than data actually allows.
Why worry about folate?

- NTDs folate sensitive—but this is a very small select population
- Is folate deficiency common—21,000 samples from inpatients and outpatients at RPH.
- April 2009 RBC folate low (<340 nmol/L) in 3.4% of all ie 97% are OK so average population intake is equivalent to RDI.
- Folate fortification decreased this to 0.5% (0.16% in women of childbearing age) in 2010
Folate

• Need to question all assumptions and check data on which previous values derived.

• Problem of Dietary Folate Equivalents which is food folate is half as effective as folic acid or food fortified with folic acid

• EAR/RDI is DFE but supplements are free folic acid but difference not recognised and people take free folic acid dose
Issues

• International harmonisation depends on agreement about clear endpoints/health markers.

• Similar issues occur with revision of within country NRVs

• Changes in folate over the years and recent changes in calcium/vit D reflect lack of clarity and confusion around appropriate endpoints
Vitamin D

- UK July 2016  RNI 10mcg/day for >4 years. Aim >25nmol/L for 97.5% of population.
- Australia AI  5mcg up to 50 years, 10mcg up to 70 years, 15mcg above 70 years. Aim>27.5nmol/l
- USA FNB-IOM RDA 15mcg up to 70, 20mcg >70. Aim >50nmol/l for 97-98%
- How much evidence supports 50nmol/L level and what is the likelihood other countries supporting this?