IMPORTANCE OF NUTRIENT DENSITY AND ITS IMPACT ON HEALTH

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PREVALENCE OF OBESITY

A hierarchy For Health

- NUTRIENT DENSITY/PROFILING
- FOOD
- DIETARY INTAKE
- PREVENTION OF CHRONIC DISEASE
- HEALTH AND WELL BEING
Oils, fats, sugar and carbohydrates are the major contributors of calories. Excessive consumption of these may lead to micronutrient deficiency.

Food that is high in nutrients but relatively low in calories. Nutrient-dense foods contain vitamins, minerals, complex carbohydrates, lean protein, and healthy fats.
NUTRIENT DENSE FOODS (ASIA)

FOOD VOLUMES OF HIGH & LOW ENERGY DENSE FOODS

The science of ranking or classifying foods based on their nutrient composition for the purpose of preventing disease and promoting health.

Each food is assigned a unitary score that reflects its nutrient quality.

Promote public health, regulation and innovation.

NUTRIENT PROFILING

Is targeted to determine the nutrient quality of individual foods

- Ranks food based on their composition
- Allow comparisons
- Enable consumer to make informed choice in food selection
- Provide a screening tool for authorities looking to make recommendation on food selection, or screen for appropriate food to carry health claims.
Nutrients to encourage

<table>
<thead>
<tr>
<th>Nutrient</th>
<th>Daily Reference Values for Adults</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protein</td>
<td>50g</td>
</tr>
<tr>
<td>Dietary Fiber</td>
<td>25g</td>
</tr>
<tr>
<td>Calcium</td>
<td>1000mg</td>
</tr>
<tr>
<td>Iron</td>
<td>9mg</td>
</tr>
<tr>
<td>Iodine</td>
<td>150μg</td>
</tr>
<tr>
<td>Magnesium</td>
<td>100mg</td>
</tr>
<tr>
<td>Zinc</td>
<td>11mg</td>
</tr>
<tr>
<td>Vitamin A</td>
<td>500μg</td>
</tr>
<tr>
<td>Thiamin</td>
<td>0.9mg</td>
</tr>
<tr>
<td>Riboflavin</td>
<td>0.9mg</td>
</tr>
<tr>
<td>Niacin</td>
<td>12mg</td>
</tr>
<tr>
<td>Vitamin B6</td>
<td>1mg</td>
</tr>
<tr>
<td>Folic Acid</td>
<td>300</td>
</tr>
<tr>
<td>Vitamin B12</td>
<td>1.8μg</td>
</tr>
<tr>
<td>Vitamin C</td>
<td>35mg</td>
</tr>
<tr>
<td>Vitamin D</td>
<td>5μg</td>
</tr>
</tbody>
</table>

DEVELOPING NUTRIENT PROFILE MODELS

- Stage 1: Decide the purpose the model is to be used for
- Stage 2: What group or population are you interested in
- Stage 3: To use food category or diet patterns
- Stage 4: Which nutrients or food components to emphasize on
- Stage 5: Decide on which base to use - expressed per 100gm, per 1000kcal or per serving
- Stage 6: Which model of nutrient profile to use
- Stage 7: What numbers to use as the cut-off point


WHAT IS THE BEST ALGORITHM TO USE IN ASIA?

\[
NRF9.3 = \sum_{i=1}^{9} \left(\%DV/100\text{kcal}\right) - \sum_{i=1}^{3} \left(\%DV/100\text{kcal}\right)
\]

9 nutrients to encourage: Protein, Fiber, Vitamin A, Iron, Calcium, Vitamin C, Potassium, Magnesium, Vitamin E

3 nutrients to limit: Saturated Fat, Added Sugars, Sodium

... and add vitamin D, B1, B2, B6, B9, B12 and omega-3s, zinc, carbohydrate quality and protein quality?

NUTRIENT DENSITY PROJECT IN EUROPE

- Establish a ‘One ILSI’ project under the ‘Health, Nutrition and Well-being Thematic Area’;
- Launch ‘One ILSI’ activity → ILSI EU in the lead;
- Goal:
  - Generate awareness
  - Science communication
  - Getting attention on ILSI international level
- Establish expert group of internationally renown scientists in the field
  - EU rep
  - Prepare white paper on the topic
  - Plan for a session on ‘Nutrient Density’ for ILSI GC 2018
- Generate awareness for high value nutrition, which is energy appropriate & rich in nutrients!
AND REGULATORY AGENCIES ALSO RECOMMEND THE SAME SCIENCE-DRIVEN PROCESS

NUTRIENT DENSITY – CHALLENGES IN ASIA

To construct nutrient profiling requires:
1. Nutrient composition of different foods
2. Set of dietary reference values-
3. Decide on which algorithm to use based on the “positive and negative nutrients”
4. Consensus on how best to use it

SINGAPORE INTRODUCED HEALTHIER CHOICE SYMBOL PROGRAMME

The Healthier Choice Symbol (HCS) should guide purchases in a way to incorporate healthier options into the diet.

Products with the symbol are in general lower in fat, saturated fat, sodium, sugar and higher in dietary fiber, calcium and whole-grains.

To make nutrition labelling more comprehensive, the Health Promotion Board (HPB) is introducing the enhanced versions of the Healthier Choice Symbol, each of which focuses on a particular nutritional aspect of the product.

DECREASING ENERGY AND INCREASING NUTRIENT DENSITY OF THE DIET HAS A BENEFICIAL EFFECT ON THE RISK OF DEVELOPING NCDS

Researchers, food industry and governments jointly should develop options for affordable, appealing nutrient-rich food products, which allow for optimal health throughout the life-course.
Voluntary product reformulation by the food industry may be the most impactful use of nutrient profiling.

**CONCLUSION**

- Nutrient profiling is the science of classifying or ranking foods according to their nutritional composition for reasons related to preventing disease and promoting health.
- ILIS Europe is taking a lead on Nutrient Density Project
- ILISEA can learn and make contributions to this initiatives
- Specific challenges and opportunities remains in the application and use of nutrient profiling/density in Asia
- Our collective expertise and experience can enhance the use of this concept to improve the health & well-being of the consumer