Public understanding of evidence in nutrition

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Director of Health and Social Care Research and Development
Thou seest I have more flesh than another man, and therefore more frailty

... King Henry the Fourth. Part I - Act III. Scene III
"IT'S WHEAT-FREE, DAIRY-FREE, FAT-FREE, NUT-FREE, SUGAR-FREE AND SALT-FREE...ENJOY!"
Eatwell Guide

Use the Eatwell Guide to help you get a balance of healthier and more sustainable food. It shows how much of what you eat overall should come from each food group.

Check the label on packaged foods

Each serving (150g) contains

<table>
<thead>
<tr>
<th>Energy</th>
<th>1046kJ/250kcal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fat</td>
<td>3.0g</td>
</tr>
<tr>
<td>Satated Fat</td>
<td>1.3g</td>
</tr>
<tr>
<td>Sugar</td>
<td>34g</td>
</tr>
<tr>
<td>Salt</td>
<td>0.9g</td>
</tr>
</tbody>
</table>

of an adult's reference intake

Typical values (as sold) per 100g: 867kJ/200kcal

Choose foods lower in fat, salt and sugars

Eat at least 5 portions of a variety of fruit and vegetables every day

Fruit and vegetables

Eat more beans and pulses, 2 portions of sustainably sourced fish per week, one of which is oily. Eat less red and processed meat

Beans, pulses, fish, eggs, meat and other proteins

Choose wholegrain or higher-fibre versions with less added fat, salt and sugar

Potatoes, bread, rice, pasta and other starchy carbohydrates

Choose lower fat and lower sugar options

Dairy and alternatives

Choose unsaturated oils and use in small amounts

Oil & spreads

Per day 2000kcal 2500kcal = ALL FOOD + ALL DRINKS

Source: Public Health England in association with the Welsh government, Food Standards Scotland and the Food Standards Agency in Northern Ireland

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Everything you thought you knew about food is WRONG

by Alice Hart-Davis

We think we know what to eat: tons of red meats and more fibre, less saturated fat and more fruit and veg, right? Wrong, according to a controversial new book by clinical psychologist Alice Hart-Davis. The book, 'The Obesity Epidemic: What Caused It? Can We Stop It? The Harrogate Truth', challenges our notions about what we should eat and how we should eat it.

MYTH: The rapid rise in obesity is due to modern lifestyles

ACCORDING to Zoe Harcombe, the obesity epidemic has less to do with our lifestyles than with what we are eating. The key thing is that people don't realise the food they eat is fuelling their obesity. She claims that sugar and processed foods, which are rich in fructose, are the real culprits. According to her, we should be eating more healthy fats and less sugar.

Fibre's bad for you. Fat's healthy. And five-a-day is a gimmick to make fruit and veg firms rich. Or so claims a remarkable new book...

Junk food

Every day, 2.5 million people in Britain have a McDonald's

MYTH: You need to eat five portions of fruit and veg a day

Five a day was started as a marketing campaign by DEFRA and veg companies to get more people to eat more vegetables. The idea was to reduce the risk of heart disease and cancer. But now it seems that we may have been eating too many vegetables...

MYTH: Fruit and veg are the most nutritious things to eat

Unfortunately, this isn't entirely true. A study by the National Cancer Institute found that processed meats were more nutritious than fresh meat. This is because processed meats are rich in antioxidants, which help to protect against cancer.

MYTH: Food advisory bodies give us sound, impartial advice

In this book, Hart-Davis challenges the authority of the Food Standards Agency (FSA), which she claims is influenced by the food industry. She says that the FSA is biased and that its advice is not always in the best interests of public health.
Why is there so much confusion about nutrition evidence?

- Sometimes the story is complex......
- Sometimes the evidence is weak and open to interpretation......
- There are strong advocates with vested interests......
Why is there so much confusion about nutrition evidence?

- Sometimes the story is complex......
IHD mortality (33 744 deaths) versus usual total cholesterol

<table>
<thead>
<tr>
<th>Age at risk</th>
<th>1 mmol/L ↓ total cholesterol</th>
</tr>
</thead>
<tbody>
<tr>
<td>80-89</td>
<td>15% ↓ risk</td>
</tr>
<tr>
<td>70-79</td>
<td>18% ↓ risk</td>
</tr>
<tr>
<td>60-69</td>
<td>28% ↓ risk</td>
</tr>
<tr>
<td>50-59</td>
<td>42% ↓ risk</td>
</tr>
<tr>
<td>40-49</td>
<td>56% ↓ risk</td>
</tr>
</tbody>
</table>

Usual total cholesterol (mmol/L)
LDLc - The greater the reduction the greater the benefit

Brady A, Betteridge J. *Br J Cardiol* 2003
MRFIT: Mortality in 350,977 men aged 35-57

- All-Cause (Blue)
- All Cardiovascular (Red)
- Coronary Heart Disease (Orange)
- Stroke (Green)

Mortality per 10,000

Serum Cholesterol (mg/dL)

@laurenjee01 High cholesterol is not a disease, nor a predictor of heart risk in women. Check #RealMealRevolution for diet to protect heart
Cholesterol
Is it really that bad?

TheExerciseCoach
Evidence-Based Recommendations

TLC Component I: Intensive Dietary Intervention Can Reduce TC

<table>
<thead>
<tr>
<th>Study</th>
<th>No. of Participants</th>
<th>Δ TC (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oslo Diet Heart Study</td>
<td>412</td>
<td>-14</td>
</tr>
<tr>
<td>Los Angeles VA</td>
<td>846</td>
<td>-13</td>
</tr>
<tr>
<td>Minnesota Mental Institution</td>
<td>9057</td>
<td>-14</td>
</tr>
<tr>
<td>Finnish Mental Hospital</td>
<td>10,612</td>
<td>-12 to -18</td>
</tr>
</tbody>
</table>

TC = total cholesterol.

# Cholesterol lowering effects of specific foods

<table>
<thead>
<tr>
<th>Soluble fibre (2-8g/day; oat bran, fruit and vegetables)</th>
<th>Decrease LDLc 1-10%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soy protein (20-30g/day)</td>
<td>Decrease LDLc 5-7%</td>
</tr>
<tr>
<td>Stanol/sterol esters (1.5-4g/day)</td>
<td>Decrease LDLc 6-12%</td>
</tr>
<tr>
<td>Nuts (60-70 g/day)</td>
<td>Decrease LDLc 5-10%</td>
</tr>
</tbody>
</table>

*Lipids* 1996;31:S45-49  
*JAMA* 1992;267:3317-25  
Cholesterol reduction by portfolio diet


- Standard diet
- Portfolio diet
- Lovastatin 20mg
- Plant sterol esters
- Viscous fibre
- Soy protein
- Almonds
Why is there so much confusion about nutrition evidence?

- Sometimes the story is complex......
- Sometimes the evidence is weak and open to interpretation......
The vitamin D story

• Bad things happen to people with low vitamin D levels
• There are good scientific explanations as to why this happens
• Giving people vitamin D supplements will prevent these harmful outcomes
Why might deficiency be common?

1. **Main Source of Vitamin D**
   - We expose less than 5% of our skin to the sun + we wear sunscreen
   - Very little vitamin D production from November to May in all of Europe
   - Vitamin D production in the skin decreases 4 times with age
   - Seniors avoid the sun: lowest levels in the Mediterranean (SENeca study)

2. **Nutritional sources of vitamin D are limited**
   - not enough in the sea

Fig 1  Association of circulating 25-hydroxyvitamin D concentrations with cause specific mortality in observational cohort studies. *Pooled estimates are based on random effects meta-analysis.

<table>
<thead>
<tr>
<th></th>
<th>No of studies</th>
<th>No of participants</th>
<th>No of deaths</th>
<th>Relative risk (95% CI)* for cause specific mortality</th>
<th>Relative risk (95% CI)* for cause specific mortality</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cardiovascular death</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary prevention cohorts</td>
<td>19</td>
<td>80 662</td>
<td>6416</td>
<td>1.35 (1.13 to 1.61)</td>
<td>1.35 (1.13 to 1.61)</td>
</tr>
<tr>
<td>Secondary prevention cohorts</td>
<td>10</td>
<td>20 987</td>
<td>3787</td>
<td>1.60 (1.32 to 1.94)</td>
<td>1.60 (1.32 to 1.94)</td>
</tr>
<tr>
<td>All cohorts</td>
<td>29</td>
<td>101 649</td>
<td>10 203</td>
<td>1.43 (1.25 to 1.64)</td>
<td>1.43 (1.25 to 1.64)</td>
</tr>
<tr>
<td><strong>Cancer death</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary prevention cohorts</td>
<td>12</td>
<td>104 353</td>
<td>5003</td>
<td>1.14 (1.01 to 1.29)</td>
<td>1.14 (1.01 to 1.29)</td>
</tr>
<tr>
<td>Secondary prevention cohorts</td>
<td>5</td>
<td>16 382</td>
<td>1617</td>
<td>1.59 (1.17 to 2.16)</td>
<td>1.59 (1.17 to 2.16)</td>
</tr>
<tr>
<td>All cohorts</td>
<td>17</td>
<td>120 735</td>
<td>6620</td>
<td>1.25 (1.10 to 1.43)</td>
<td>1.25 (1.10 to 1.43)</td>
</tr>
<tr>
<td><strong>Non-cardiovascular, non-cancer death</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary prevention cohorts</td>
<td>7</td>
<td>38 526</td>
<td>1444</td>
<td>1.30 (1.07 to 1.59)</td>
<td>1.30 (1.07 to 1.59)</td>
</tr>
<tr>
<td>Secondary prevention cohorts</td>
<td>3</td>
<td>13 035</td>
<td>1121</td>
<td>1.49 (0.94 to 2.35)</td>
<td>1.49 (0.94 to 2.35)</td>
</tr>
<tr>
<td>All cohorts</td>
<td>10</td>
<td>51 561</td>
<td>2565</td>
<td>1.34 (1.13 to 1.60)</td>
<td>1.34 (1.13 to 1.60)</td>
</tr>
<tr>
<td><strong>All cause mortality</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary prevention cohorts</td>
<td>27</td>
<td>780 990</td>
<td>48 488</td>
<td>1.35 (1.22 to 1.49)</td>
<td>1.35 (1.22 to 1.49)</td>
</tr>
<tr>
<td>Secondary prevention cohorts</td>
<td>41</td>
<td>59 918</td>
<td>16 148</td>
<td>1.50 (1.36 to 1.65)</td>
<td>1.50 (1.36 to 1.65)</td>
</tr>
<tr>
<td>All cohorts</td>
<td>68</td>
<td>840 908</td>
<td>64 636</td>
<td>1.44 (1.34 to 1.55)</td>
<td>1.44 (1.34 to 1.55)</td>
</tr>
</tbody>
</table>

Chowdhury R et al. BMJ 2014;348:bmj.g1903
Fig 6  Effects of vitamin D supplementation on all cause mortality when given alone, derived from available randomised control trials. *Pooled estimates are based on random effects meta-analysis.

<table>
<thead>
<tr>
<th>Trials reporting on vitamin D$_3$ alone</th>
<th>No of studies</th>
<th>Intervention group</th>
<th>Control group</th>
<th>Relative risk (95% CI)</th>
<th>Relative risk (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Community dwelling</td>
<td>5</td>
<td>3940/549</td>
<td>3926/601</td>
<td>0.91 (0.81 to 1.01)</td>
<td></td>
</tr>
<tr>
<td>Hospital based</td>
<td>9</td>
<td>2886/538</td>
<td>2885/576</td>
<td>0.84 (0.65 to 1.09)</td>
<td></td>
</tr>
<tr>
<td>All studies</td>
<td>14</td>
<td>6826/1087</td>
<td>6811/1177</td>
<td>0.89 (0.80 to 0.99)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Trials reporting on vitamin D$_2$ alone</th>
<th>No of studies</th>
<th>Intervention group</th>
<th>Control group</th>
<th>Relative risk (95% CI)</th>
<th>Relative risk (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Community dwelling</td>
<td>4</td>
<td>8313/1420</td>
<td>8408/1393</td>
<td>1.05 (0.94 to 1.17)</td>
<td></td>
</tr>
<tr>
<td>Hospital based</td>
<td>4</td>
<td>180/20</td>
<td>178/17</td>
<td>1.15 (0.63 to 2.11)</td>
<td></td>
</tr>
<tr>
<td>All studies</td>
<td>8</td>
<td>8493/1440</td>
<td>8586/1410</td>
<td>1.04 (0.97 to 1.11)</td>
<td></td>
</tr>
</tbody>
</table>

Chowdhury R et al. BMJ 2014;348:bmj.g1903

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Adult groups at risk of vitamin D deficiency:

- all pregnant and breastfeeding women, especially teenagers and young women
- older people, aged 65 years and over
- people who have low or no exposure to the sun, for example those who cover their skin for cultural reasons, who are housebound or who are confined indoors for long periods
- people who have darker skin, for example people of African, African-Caribbean or South Asian origin, because their bodies are not able to make as much vitamin D.

Recommendations:

- All pregnant and breastfeeding women should take a daily supplement containing 10 µg (400 IU) of vitamin D, to ensure the mother’s requirements for vitamin D are met and to build adequate foetal stores for early infancy.
- People aged 65 years and over and people who are not exposed to much sun should also take a daily supplement containing 10 µg (400 IU) of vitamin D.

Vitamin D—One of the Simplest Solutions to Wide-Ranging Health Problems

December 22, 2013  |  646,946 views  |  Disponible en Español

- Increasing levels of vitamin D3 among the general population could potentially prevent chronic diseases that claim nearly one million lives throughout the world each year. Incidence of several types of cancer could also be slashed in half.

- Vitamin D fights infections, including colds and the flu, as it regulates the expression of genes that influence your immune system to attack and destroy bacteria and viruses.

- Feeling tired and achy is a frequent complaint. While many are misdiagnosed as having fibromyalgia or chronic fatigue, these are classic signs of vitamin D deficiency osteomalacia. The remedy is a combination of vitamin D and calcium.

- Researchers estimate that 50 percent of the general population is at risk of vitamin D deficiency and insufficiency. Among school aged children, that percentage may be as high as 70 percent.

- A smartphone app called DMinder can tell you how much UV radiation you’re getting in your area, and how many units of vitamin D you’re making.
Why is there so much confusion about nutrition evidence?

- Sometimes the story is complex.
- Sometimes the evidence is weak and open to interpretation.
- There are strong advocates with vested interests.
Obesity tsars, sugar firms paying them a fortune and a VERY unhealthy relationship

By ALEX RENTON FOR MAILONLINE


You might think that there was a sign above every university and medical school announcing: ‘Top scientists for sale!’

According to an investigation by Channel 4’s Dispatches programme, five of the eight members of the Government’s scientific committee on nutrition receive funding from large confectionary companies.

The chairman, Professor Ian Macdonald, receives money not only from Unilever, the world’s biggest ice-cream maker, but from Coca-Cola and Mars, too.

Another of the Government’s most trusted scientists on diet, sugar and heart disease, Professor Tom Sanders, has been given £4.5 million towards his research by sugar giant Tate & Lyle.

If they enjoy such sweet business connections, can we trust the advice our scientists give us on diet and obesity?

Have the men and women in white coats - once thought incorruptible, above politics and devoted only to the purity of scientific fact - been bought up by the industries they have been asked to help regulate?
Sugar’s web of influence

Connections represent links such as research funding, consultancy, advisory board membership and other group memberships.
Read Our Latest Report

Healthy Eating Guidelines & Weight Loss Advice For The United Kingdom

Click To Download & Read

Hannah Sutter

A qualified solicitor and passionate advocate for the use of natural low carbohydrate diets for the management of general health and the use of nutritional ketogenic diets for the management of diabetes, epilepsy and many other serious health conditions. In 2004 Hannah founded Natural Ketosis, a natural low carb and nutritional ketogenic solution for obesity and weight loss, providing delivered meals and one to one support for a long lasting, weight loss solution. In 2011 she authored “Big Fat Lies – Is your government making you fat?” A critique of the Eat Well Plate and exposé of the conflicts of interest in SACN (The Scientific Advisory Panel on Nutrition). Finally, in 2012 she Founded The Natural Low Carb Store – a specialist food supplier for 100% natural low carb food.

www.twitter.com/HannahSutter
www.natural-low-carb-store.co.uk
“Eat fat, cut the carbs and avoid snacking to reverse obesity and type 2 diabetes.”

This document, issued jointly with the Public Health Collaboration, has achieved worldwide coverage over the past week. It was co-authored by Aseem Malhotra, NHS consultant cardiologist and NOF adviser, David Haslam, GP Watton-at-Stone, Sam Feltah, director of the Public Health Collaboration, David Unwin, GP Southport, and Shamir Chandaria, Patron, NOF, Jason Fung, Nephrologist and Chief of the Department of Medicine, The Scarborough Hospital, Toronto, Canada, James DiNicolantonio, Cardiovascular Research Scientist Saint Luke’s Mid America Heart Institute, Trudi Deakin, Dietitian and best selling author, Caryn Zinn Dietitian, Auckland, New Zealand, and Peter Brukner, OAM, MBBS, FACSP, FACSM, FASM, FFSEM; specialist sports and exercise physician. No funding was sought or received for this report. The document was supported and peer reviewed by an international expert panel. 

Research"
“Is it just me or is it a bad idea to eat at a place that prints CPR instructions on their placemats?”
Improving public understanding of nutrition evidence

- Acknowledge and explain the complexity of the evidence
- Develop clear messages and engage via multiple channels
- Challenge false solutions
- In the long term, the interpretation of scientific evidence should be a component of the core school curriculum
“Eating an average of 2.9 more portions of fruit and vegetables a day made subjects look healthier when rated by others at the end of the study, while an extra 3.3 portions enhanced their attractiveness.”

"How much longer do I have before I have to change to a healthy lifestyle?"