

# **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

Check the label on packaged foods

Each serving (150g) contains

Energy 1046kJ 250kcal	Fat 3.0g	Saturates 1.3g	Sugars 34g	Salt 0.9g
	LOW	LOW	HIGH	MED
13%	4%	7%	38%	15%

of an adult's reference intake

Typical values (as sold) per 100g: 697kJ/ 167kcal

Choose foods lower in fat, salt and sugars

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.



Water, lower fat milk, sugar-free drinks including tea and coffee all count.  
Limit fruit juice and/or smoothies to a total of 150ml a day.

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



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



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

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



Dairy and alternatives  
Choose lower fat and lower sugar options



Choose unsaturated oils and use in small amounts



Eat less often and in small amounts

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







ferret will die if it goes into

heat and can't find a mate

Life &amp; Style

by Alice Hart-Davis

**WE** THINK we know what to eat: less red meat and more fibre, less saturated fat and more fruit and veg, right?

Wrong, according to a controversial new book by obesity researcher and nutritionist Zoe Harcombe.

In *The Obesity Epidemic: What Caused It? How Can We Stop It?* Harcombe charts her meticulous journey of research into studies that underpin dietary advice — and her myth-busting conclusions are startling.

**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 that people don't realise is that throughout history, right until the Seventies, obesity levels never went above 2 per cent of the population in the UK,' she says. 'Yet by the turn of the millennium, obesity levels were 20 per cent.'

'What happened? In 1983, the government changed its diet advice. After that, if you look at the graphs, you can see obesity rates taking off like an aeroplane. You might feel it is coincidence, but to me it is blindingly obvious.'

'The older dietary advice was simple; foods based on flour and grains were fattening, and sweet foods were most fattening of all.'

'Mum and Granny told us to eat liver, eggs, sardines and to put butter on our vegetables. The new advice was "base your meals on starchy foods" — the things that we used to know made us fat (rice, pasta, potatoes and bread). That's a U-turn.'

**MYTH: Starchy carbohydrates should be the main building blocks of our diet**

WE'VE been told that carbohydrates such as rice, pasta, bread and potatoes should form the bulk of what we eat. The trouble with this, says Zoe Harcombe, is that as carbs are digested, they are broken down into glucose.

'This process makes your body produce insulin, in order to deal with the extra glucose. One of insulin's main roles in the body is fat storage, so whenever you eat carbs, you are switching on your body's fat-storing mechanism. Whatever carbs you don't use up as energy will be quickly stored away in the body as fat.'

We should get back to doing as nature intended and eat real, unprocessed food, starting with meat, fish, eggs, vegetables and salads.

**MYTH: Losing weight is about calories in versus calories out**

'IF ONLY it were that simple,' says Harcombe. 'People think that if they cut out 500 calories a day, they will lose 1lb a week.'

'They might at first, but then the body will recognise that it is in a state of starvation and turn down its systems to conserve energy.'

'So you may be putting fewer calories in, but at the same time you will be using up fewer calories to get through the day.'

Losing weight is more a question of fat storage and fat utilisation. You need the body to move into a fat-burning mode and, to do that, you need to cut down your consumption not of calories, but of carbohydrates.

# Everything you thought you knew about food is WRONG

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 . . .



**MYTH: More exercise is a cure for the obesity epidemic**

THIS is standard wisdom; exercise, we think, will burn calories, lose fat and speed up our metabolism. Think again, says Harcombe. 'If you push yourself into doing extra exercise, it will be counterproductive because you will get hungry — your body will be craving carbohydrate to replenish its lost stores.'

'If you are trying to control weight, it is so much easier to control what you put into your mouth. Not how much, but what. Then it doesn't matter what you do or don't do by way of exercise.'

**MYTH: Fat is bad for us**

'REAL fat is not bad for us,' says Harcombe. 'It's man-made fats we should be demonising. Why do we have this idea that meat is full of saturated fat? In a 100g pork chop, there is 2.3g of unsaturated fat and 1.5g of saturated fat.'

'Fat is essential for every cell in the body. In Britain (according to the Family Food Survey of 2006), we are deficient in the fat-soluble vitamins A, D and E, which are responsible for healthy eyesight, bone strength, mental health, cancer and blood

vessel protection and, therefore, heart health. We need to eat real fat in order for these vital vitamins to be absorbed into the body.'

**MYTH: Saturated fat causes heart disease**

OVER the past 50 years, we have accepted this as one of the basic nutritional truths. But Zoe Harcombe says: 'No research has ever properly proved that eating saturated fat is associated with heart disease, let alone that it causes it.'

**MYTH: Cholesterol is a dietary enemy**

CONTROVERSIALLY, Harcombe does not consider 'high' cholesterol levels a bad thing.

'To peak a number — 5 (mmol/l) — and to say everyone should have cholesterol levels no higher than this is like declaring the average height should be 5ft 4in and not 5ft 9in and medicating everyone who doesn't reach this meaningless number to reduce their height. It really is that horrific.'

'Ansel Keys, who studied cholesterol

extensively in the Fifties, said categorically that cholesterol in food does not have any impact on cholesterol in the blood.'

'What is abnormal is the amount of carbohydrate we eat, especially refined carbohydrate, and this has been shown to determine triglyceride levels — the part of the cholesterol reading your GP may be most concerned about.'

'It's the ultimate irony. We only told people to eat carbs because we demonised fat and, having picked the wrong villain, we are making things worse.'

**Junk food**

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

**MYTH: We should eat more fibre**

FOR three decades, we have crammed fibre into our bodies to

help us feel full and keep our digestive systems moving. This is not a good idea, says Harcombe.

'The advice to eat more fibre is put forward along with the theory that we need to flush out our digestive systems. But essential minerals are absorbed from food while it is in the intestines, so why do we want to flush everything out? Concentrate on not putting bad foods in.'

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

'FIVE-A-DAY is the most well-known piece of nutritional advice,' says Harcombe. 'You'd think it was based on firm evidence of health benefit. Think again!'

'Five-a-day started as a marketing campaign by 25 fruit and veg companies and the American National Cancer Institute in 1991. There was no evidence for any cancer benefit.'

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

APPARENTLY not, Harcombe allows that vegetables are a great addition to the diet —

if served in butter to deliver the fat-soluble vitamins they contain — but

fructose, the fruit sugar in fruit, goes straight to the liver and is stored as fat. 'Fruit is best avoided by those trying to lose weight, says Harcombe, who adds: 'Vitamins and minerals in animal foods — meat, fish, eggs and dairy products — beat those in fruit hands down.'

**MYTH: Food advisory bodies give us sound, impartial advice**

THESE organisations we turn to for advice on food are sponsored by the food industry. The British Dietetic Association (BDA), whose members have a monopoly on delivering Department of Health and NHS dietary advice, is sponsored by Danone, the yoghurt people, and Abbott Nutrition, which manufactures infant formula and energy bars.

'The British Nutrition Foundation, founded in 1987 to 'deliver authoritative, evidence-based information on food and nutrition in the context of health and lifestyle', has among its 'sustaining members' British Sugar plc, Cadbury, Coca-Cola, J Sainsbury PLC and Kraft Foods.'

'When the food and drink industry is so actively embracing public health advice, isn't it time to wonder how healthy that advice can be?' says Harcombe.

■ **THE OBESITY EPIDEMIC** by Zoe Harcombe (Columbus Publishing, £20). © Zoe Harcombe. To order a copy, tel: 0545 155 0729.

# Why is there so much confusion about nutrition evidence?

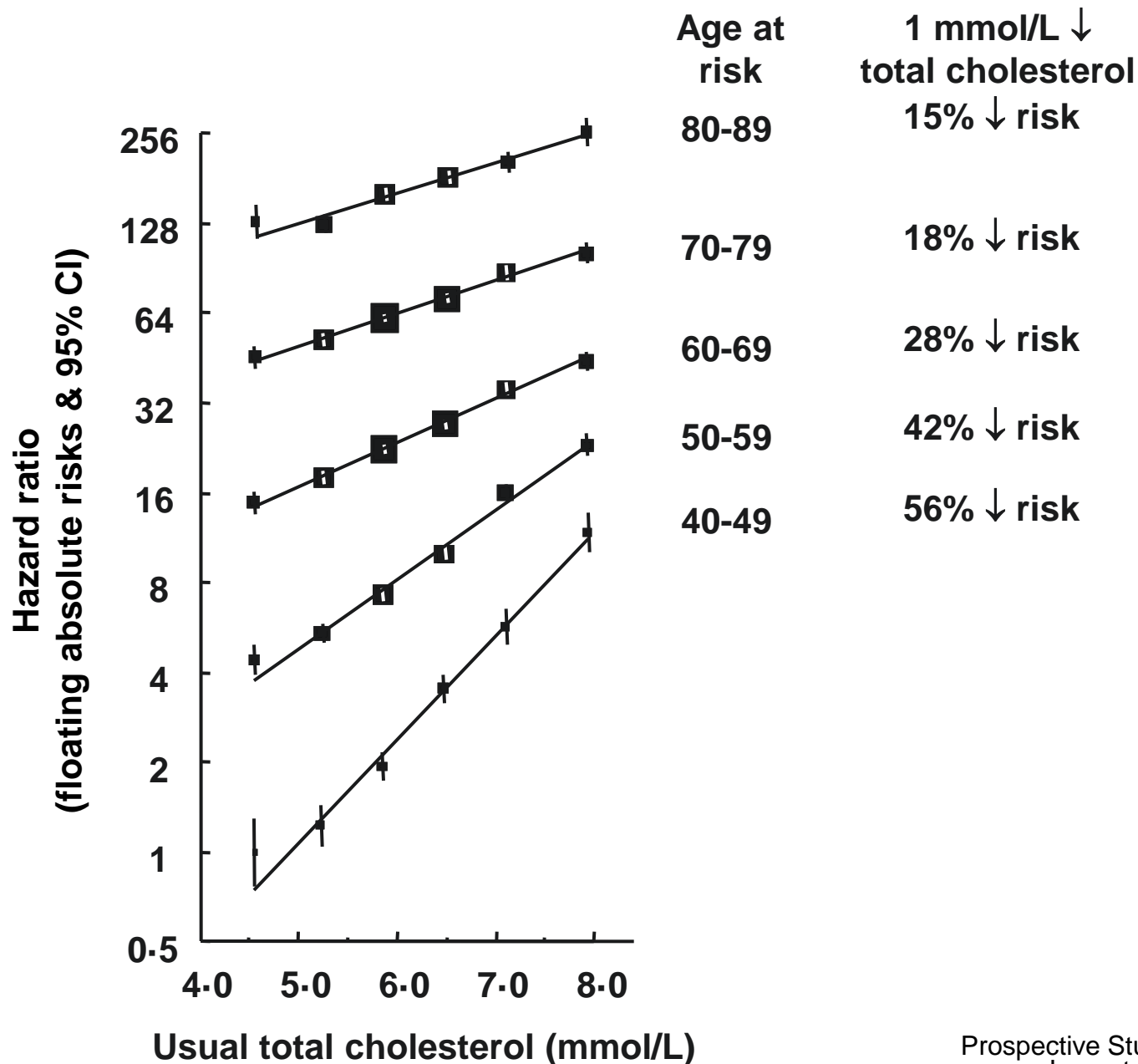
- Sometimes the story is complex.....
- Sometimes the evidence is weak and open to interpretation.....
- There are strong advocates with vested interests.....



# **Why is there so much confusion about nutrition evidence?**

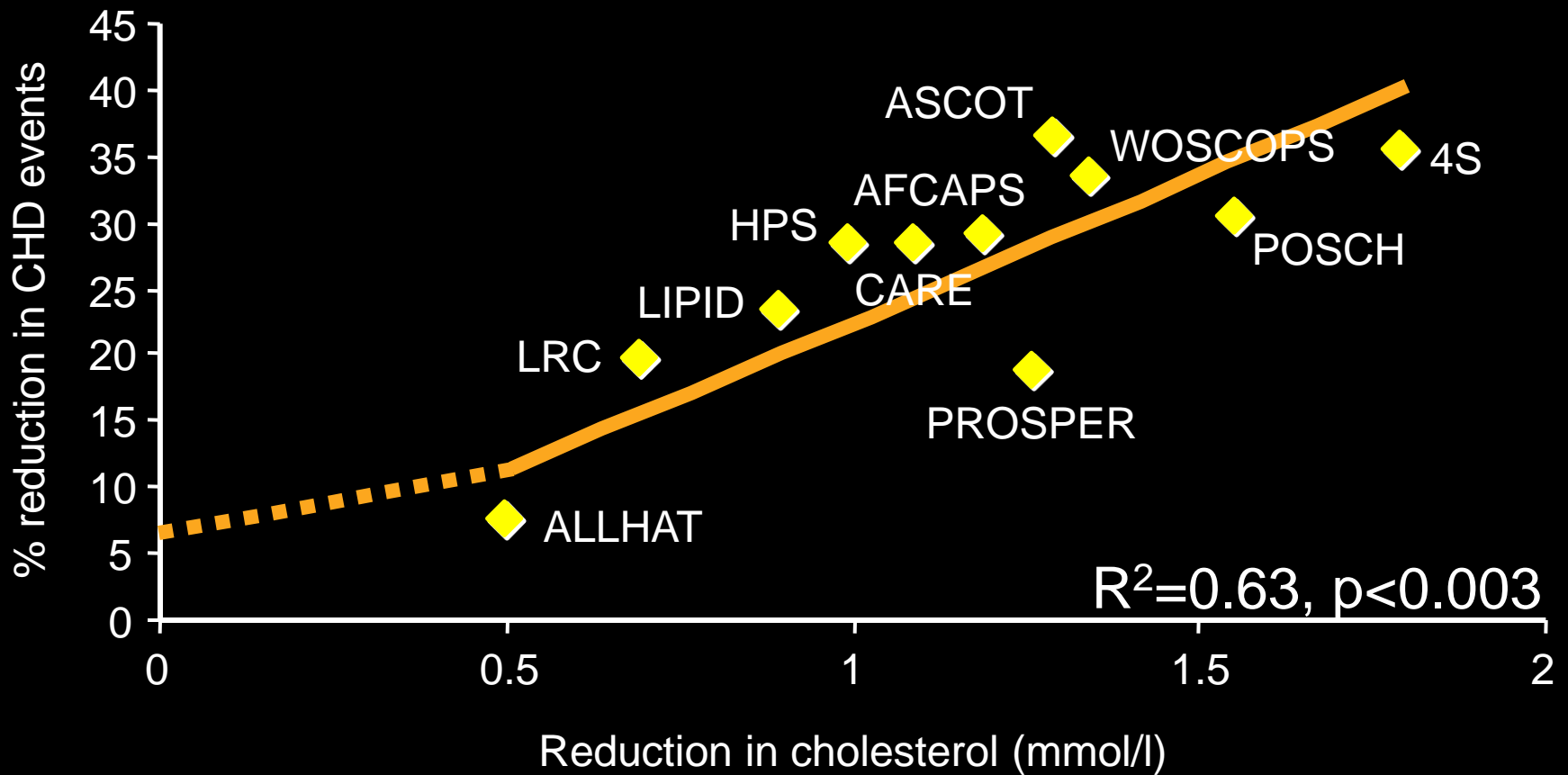
- Sometimes the story is complex.....

# IHD mortality (33 744 deaths) versus usual total cholesterol

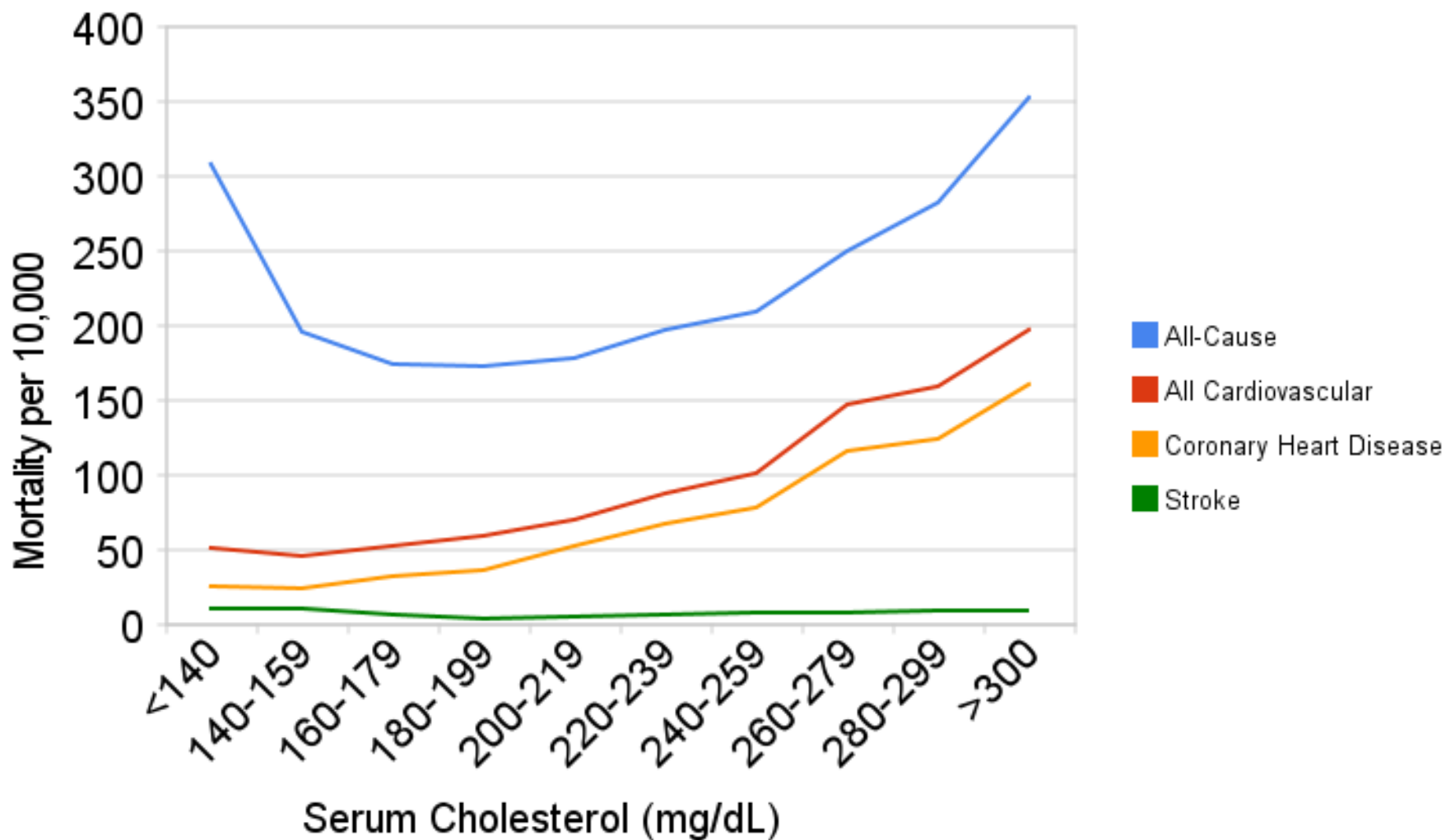




# LDLc - The greater the reduction the greater the benefit



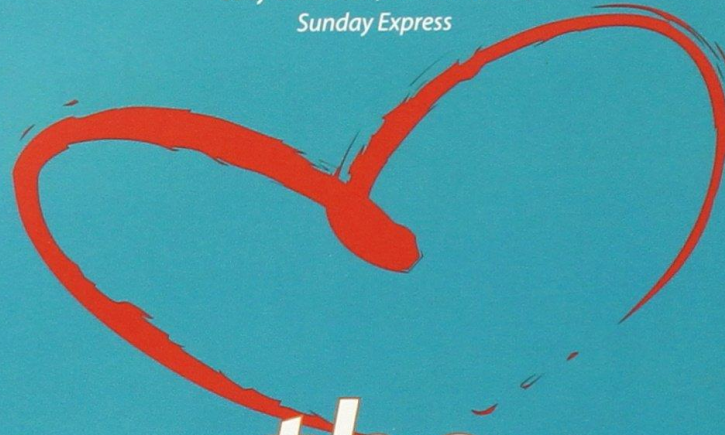
## MRFIT: Mortality in 350,977 men aged 35-57





'Bold, highly entertaining and thought-provoking. This book will  
change the way you think about heart disease forever'

Lucy Johnston, Health Editor,  
*Sunday Express*



*the*  
**Great**  
*Cholesterol*  
**Con**

**THE TRUTH ABOUT WHAT REALLY CAUSES HEART  
DISEASE AND HOW TO AVOID IT**

**DR MALCOLM KENDRICK**



**Tim Noakes** @ProfTimNoakes · 1h

.@laurenjee01 High cholesterol is not a disease, nor a predictor of heart risk in women. Check [#RealMealRevolution](#) for diet to protect heart

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# cholesterol

## Is it really that bad?



# Evidence-Based Recommendations

## TLC Component I: Intensive Dietary Intervention Can Reduce TC

<b>Study</b>	<b>No. of Participants</b>	<b><math>\Delta</math> TC (%)</b>
Oslo Diet Heart Study	412	-14
Los Angeles VA	846	-13
Minnesota Mental Institution	9057	-14
Finnish Mental Hospital	10,612	-12 to -18

TC = total cholesterol.

Brousseau M, Schaefer EJ. *Curr Atheroscler Rep.* 2000;2:487-493.





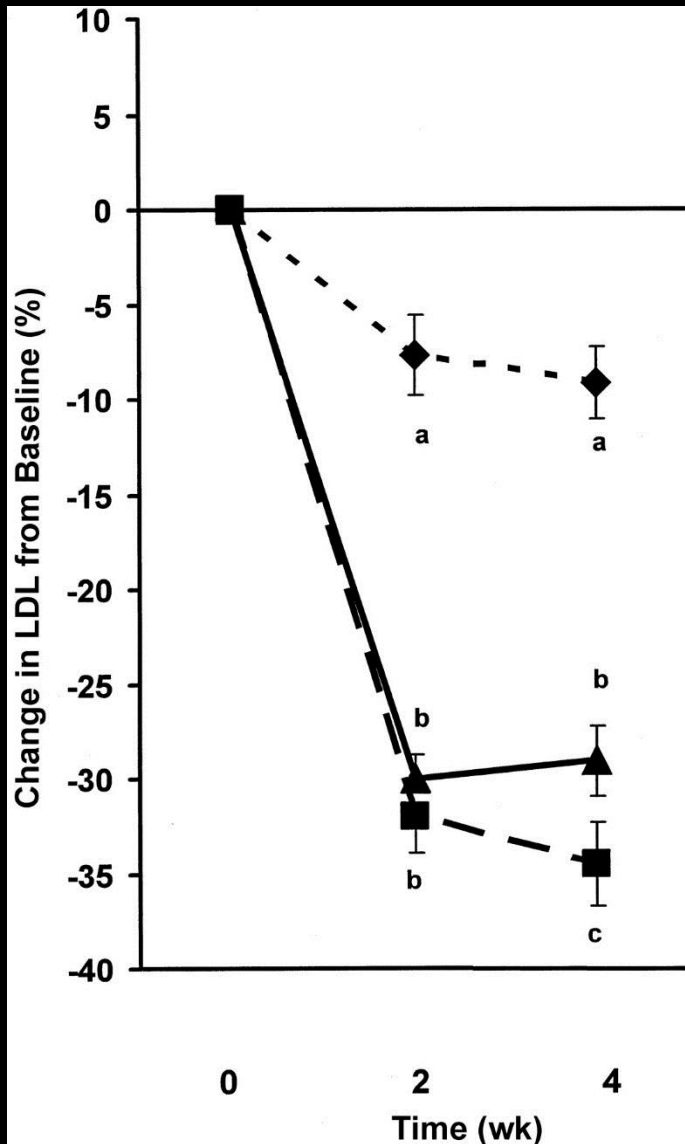
# Cholesterol lowering effects of specific foods

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



# Cholesterol reduction by portfolio diet

Am.J.Clin.Nutr. 2005;81:380-7



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.....



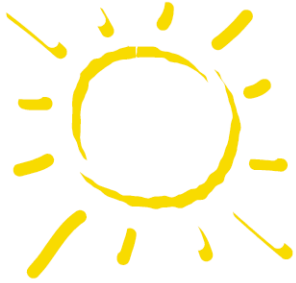


# The vitamin D story

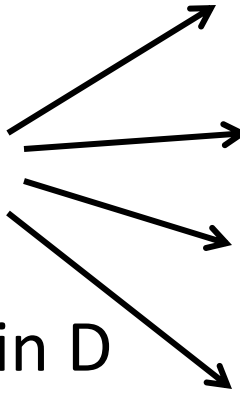
- Bad things happen to people with low vitamin D levels
- There are good scientific explanations as to why this happens
- Giving people vitamin D supplements will prevent these harmful outcomes

# 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

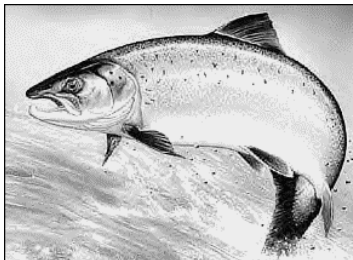
Very little vitamin D production from November to May in all of Europe

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

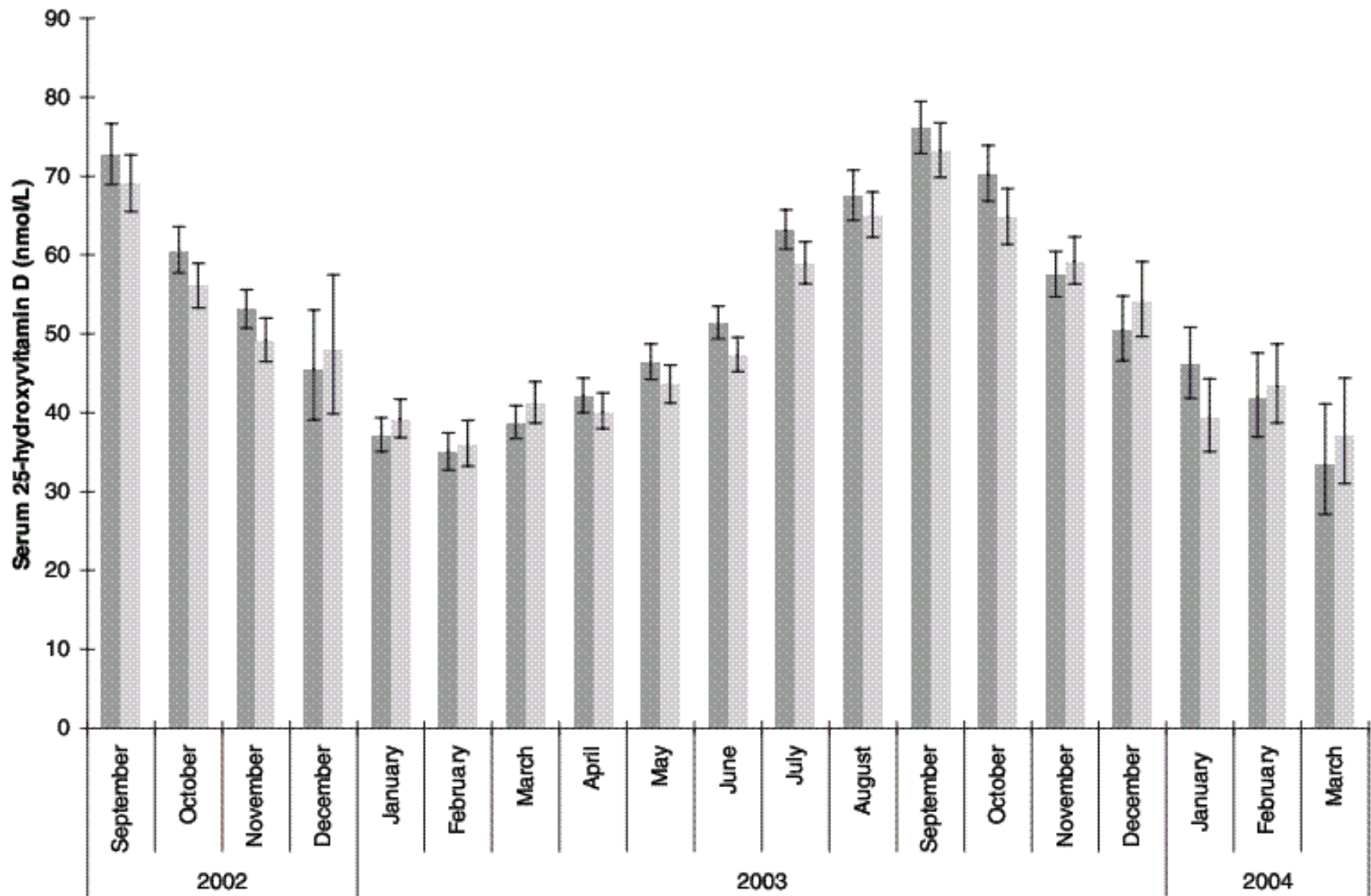
- not enough



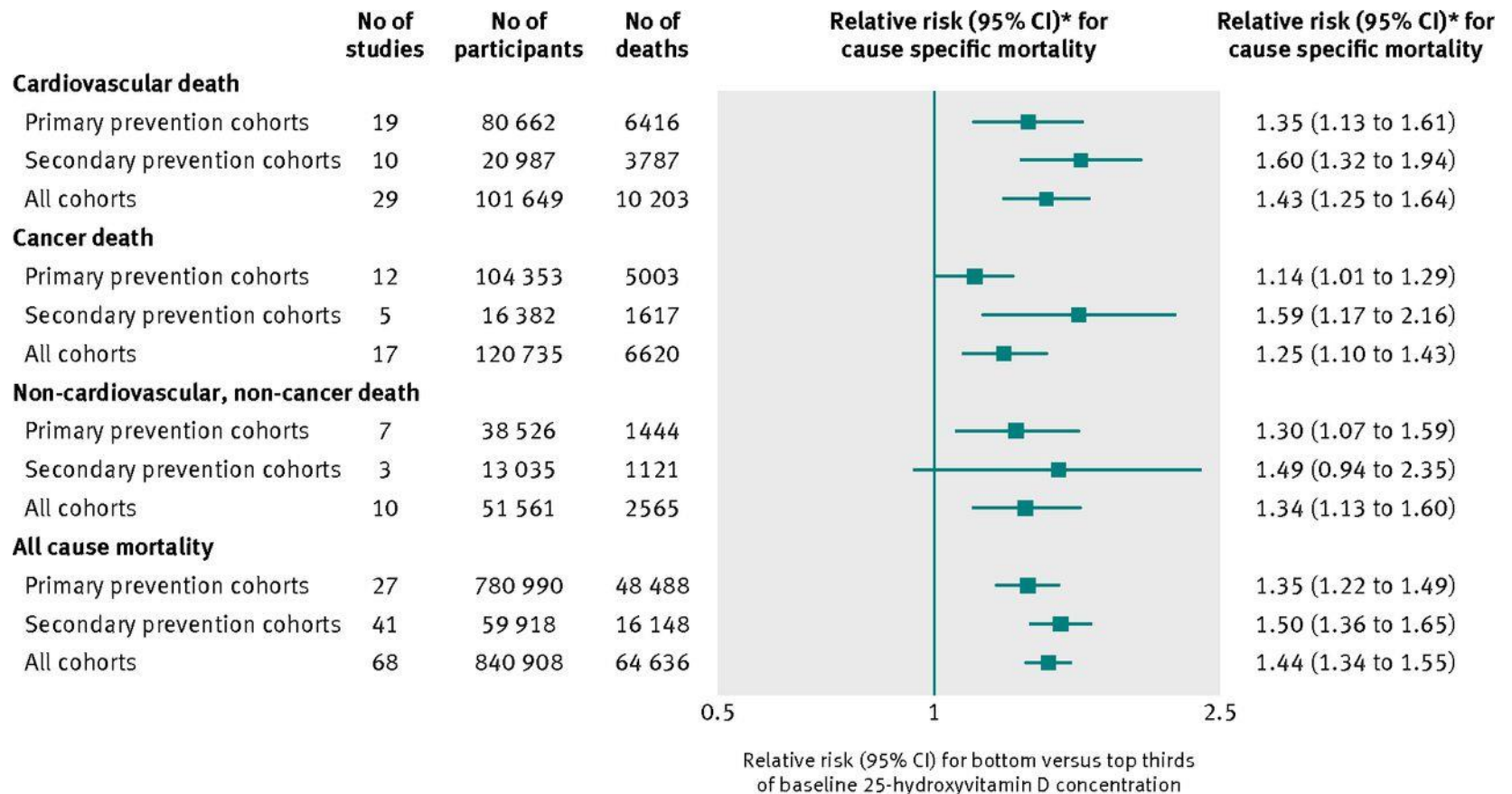
in the sea

*Chen TC, Holick MF, et al. Factors that influence the cutaneous synthesis and dietary sources of vitamin D. Arch Biochem Biophys 2007;8:8.*



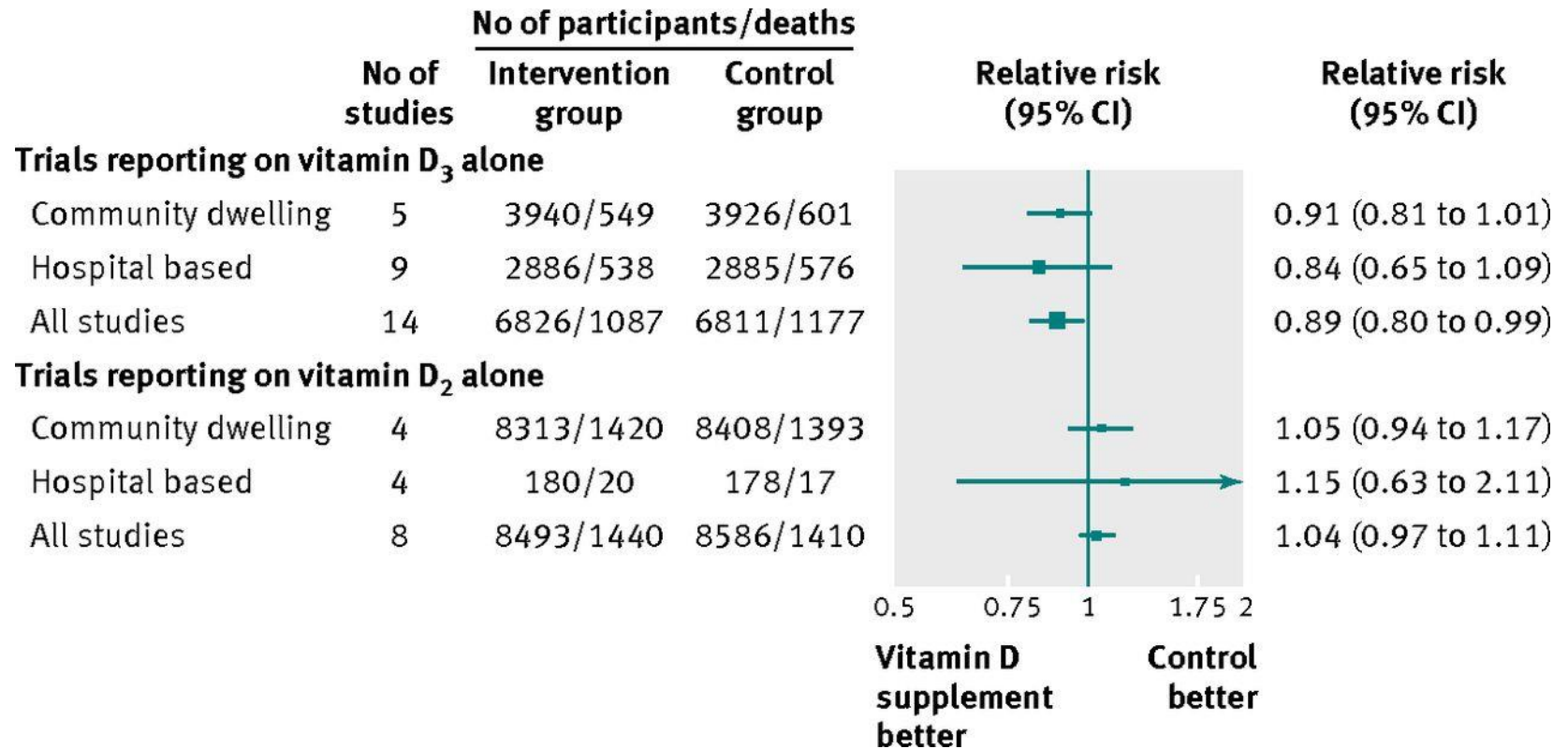


**Fig 1 Association of circulating 25-hydroxyvitamin D concentrations with cause specific mortality in observational cohort studies. \*Pooled estimates are based on random effects meta-analysis.**



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.**



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



## Department of Health Guidance<sup>iii</sup>

### 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.

<sup>iii</sup> Vitamin D – advice on supplements for at risk groups. Letter from the Chief Medical Officers for the United Kingdom. [accessed 18/11/2013] <https://www.gov.uk/government/publications/vitamin-d-advice-on-supplements-for-at-risk-groups>

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

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## Story at-a-glance

- » 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

Dr. Mercola Interviews Dr. Holick about Vitamin...  

Dr. Mercola Interviews

**Dr. Michael Holick**



The Vitamin D Solution  
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# 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

PUBLISHED: 01:25, 21 January 2014 | UPDATED: 10:02, 21 January 2014



 37  
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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?



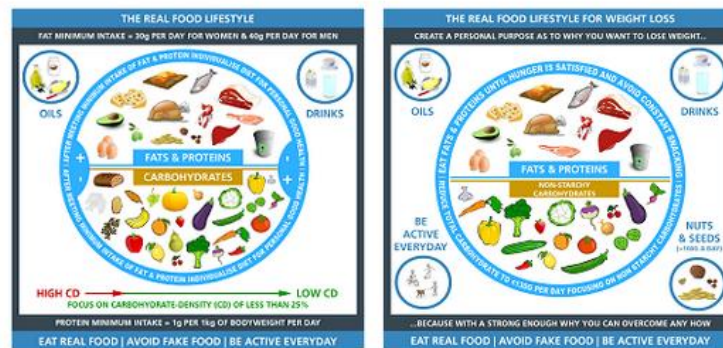
**Concerns:** Campaigners have blasted health officials, including Professor Ian MacDonal, for working as a paid advisor for Coca Cola



# Read Our Latest Report

Healthy Eating Guidelines & Weight Loss Advice For The United Kingdom

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## 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](https://www.twitter.com/HannahSutter)

[www.natural-low-carb-store.co.uk](http://www.natural-low-carb-store.co.uk)





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## “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 Feltham, director of the Public Health Collaboration, David Unwin, GP Southport, and Shamil 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, FASMF, 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[i][i].

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[Medical Research Study on Weight Management](#)

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- Carlton TV Ltd



Very Scanned

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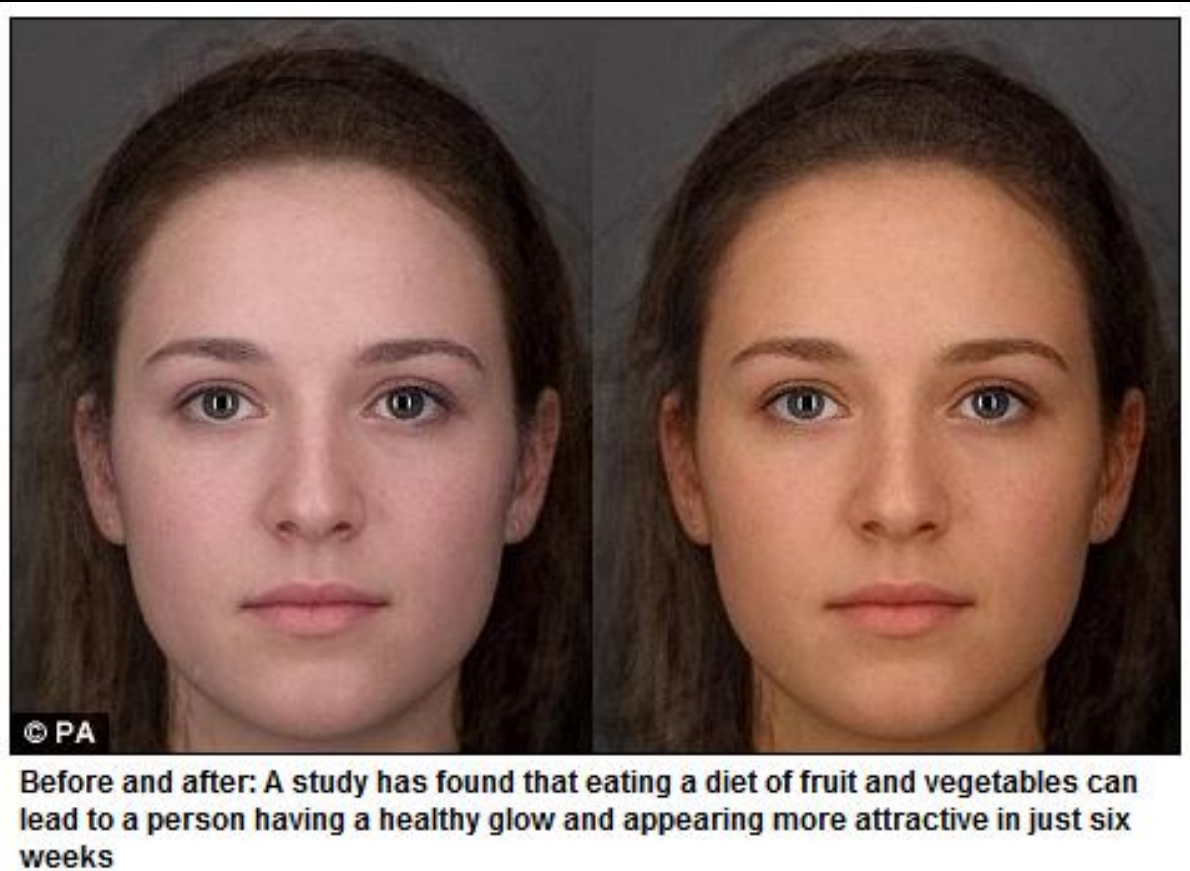


"Is it just me or is it a bad idea to eat at a place that prints CPR instructions on their placemats?"



# 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?”





