

Summing up the public health implications

Professor Judy Buttriss

27 February 2019

‘Nutrition & CVD: The Heart of the
Matter’

COMA recommendations

| Nutrient | Recommendation |
|---------------------|---|
| Fat | Reduce to 35% food energy |
| Saturates | Reduce to 11% food energy |
| Polyunsaturates | No further increase in average intake of n-6 fatty acids Increase long-chain n-3 fatty acids to 0.2 g/day (subsequently increased to 0.45 g/day) |
| Monounsaturates | No specific recommendations but ~13% food energy if other recommendations met |
| Trans fats | ≤2% food energy |
| Total carbohydrates | ~50% food energy |
| NMES | Reduce to 11% food energy |
| Dietary fibre | 18 g/day NSP (~24 g/day AOAC fibre) |
| Sodium | Reduce to 6 g salt/day |
| Potassium | 3.5 g/day |

SACN Carbohydrates and Health (2015)

- Evidence strengthened that **high intakes of free sugars** are detrimental to several health outcomes. New DRV set.
- RCTs in adults indicate that changing the **proportion of energy consumed as sugars** has corresponding effects on energy intake (increase or decrease).
- **Sugars-sweetened beverages** associated with increased risk of type 2 diabetes in prospective cohort studies.
- **Strong evidence** from prospective cohort studies that **increased fibre intakes** (particularly cereal fibre and wholegrains) associated with lower risk of cardiometabolic disease. DRV **increased to 30g/day**
- **Total carbohydrate intake** appears to be neither detrimental nor beneficial to cardiometabolic health.
- SACN confirmed that **about 50% of energy should come from carbohydrate.**

Free sugars - average population intake should not exceed 5% of dietary energy

Dietary fibre (AOAC) - 30 g/day for adults

Carbohydrates
and Health

sacn
Scientific Advisory Committee on Nutrition

2015

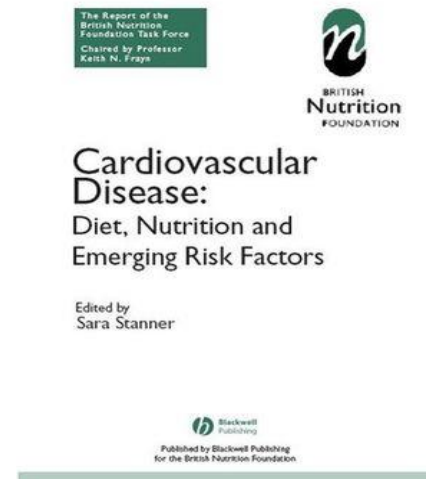
Classical and emerging risk factors

- Classical lifestyle risk factors (e.g. smoking, alcohol, obesity, physical inactivity) remain important. Mechanisms now better understood.
- Evidence has strengthened for the role of some previously 'emerging' risk factors (e.g. early life nutrition* and vascular dysfunction [e.g. role of fatty acid type]) in CVD risk and for links with specific dietary components.
- New risk factors e.g. gut microbiome.

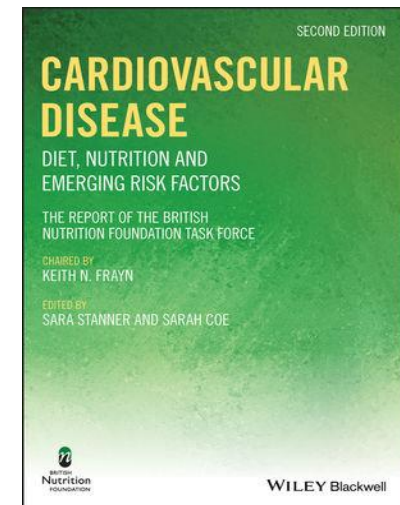
* EARLY LIFE NUTRITION

- Consistent evidence (cohort studies) linking maternal obesity & gestational diabetes with high risk of obesity, early onset diabetes and CVD in offspring.
- Lower birth weight & faster growth in childhood/adolescence consistently linked with higher risk of CVD in adulthood.

2005



2019



Why the debate around saturates?

Saturates raise blood cholesterol which increases CHD risk – the ‘**Diet-Heart hypothesis**’

vs.

“No association between saturates intake and risk of CHD” in meta-analyses of **cohort studies** (Siri-Tarino et al. 2010; Chowdhury et al. 2014)

For every 5% of dietary energy from saturates that is replaced by *n*-6 polyunsaturates, there is a 9-13% reduction in CHD events and 13-16% reduction in CHD deaths (Farvid *et al.* 2014). Systematic review and meta-analysis of prospective cohort studies.



1. Polyunsaturates
2. Monounsaturates
3. Carbohydrates (wholegrains)



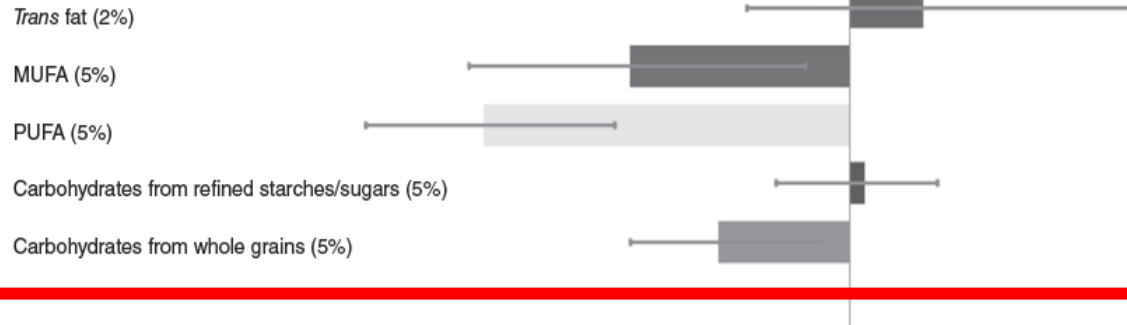
1. Trans fats
2. Refined starches or sugars

Type of substitution matters

Dietary cohort studies – methodological issues

The type of substitution matters

Isocaloric substitution of SFA by equivalent energy from



Li *et al.* (2015) change in CHD risk with isocaloric substitution. Two large prospective cohorts.

Meta-analysis of 11 RCTs – 27% reduction in CVD events in studies that replaced saturated fats with PUFAs, but not MUFAs, carbohydrates or protein (Hooper *et al.* 2015).

And 7-17% reduction in CVD events with lower intake of SFA compared with usual intake (Hooper *et al.* 2015).

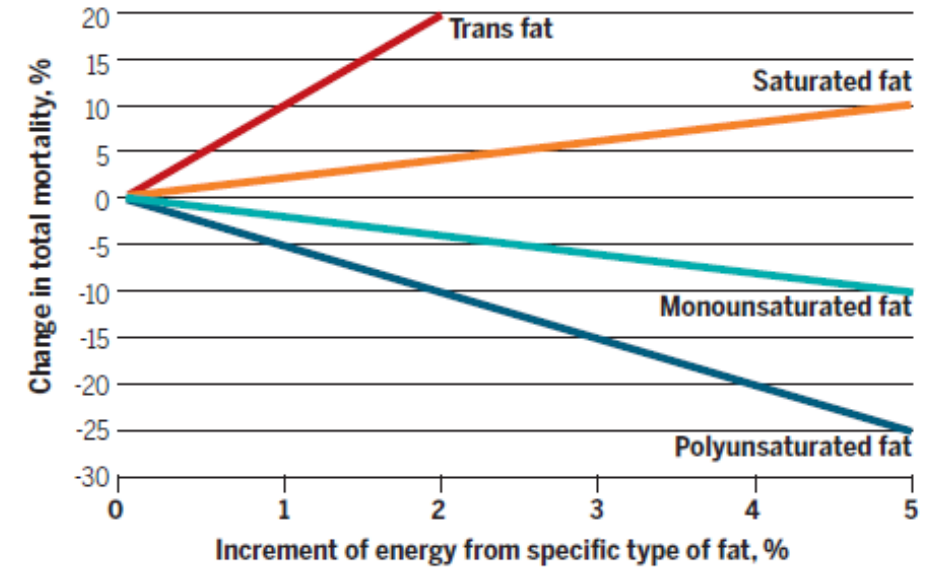


Fig. 2. Relation between increasing intakes of trans, saturated, unsaturated, monounsaturated, and polyunsaturated fatty acid (compared isocalorically with carbohydrate) in relation to total mortality. Data are based on 126,233 men and women followed for up to 32 years, with assessments every 4 years, as described in Wang *et al.* (94). The strong inverse association with polyunsaturated fatty acids was primarily due to N-6 polyunsaturated fatty acids; associations with N-3 polyunsaturated fatty acids were weaker.

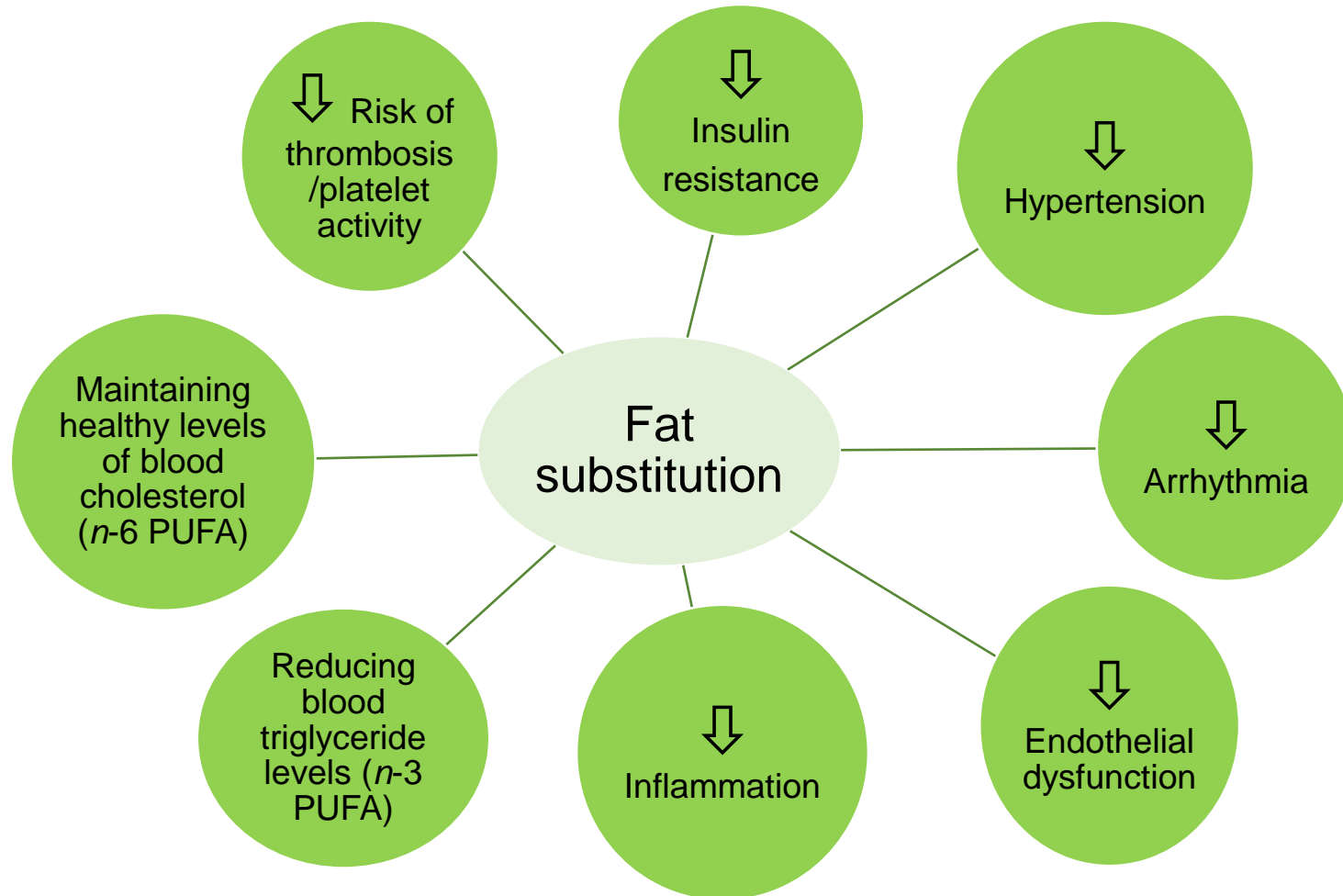
SACN draft report 'Saturated fats and health' (2018)

Key findings

- Reducing intake of saturates reduces total and LDL-cholesterol and triglycerides, and reduces risk of cardiovascular events.
- RCTs show that replacing saturates with **polyunsaturates** or **monounsaturates** reduces total and LDL cholesterol, and total to HDL cholesterol ratio
- Replacing saturates with **polyunsaturates** also reduces risk of cardiovascular events (Hooper et al. 2015)
- Limitations in the available data mean that no conclusions can be drawn about the benefits on cardiovascular events of substituting saturates with **monounsaturates** or with **carbohydrate**.
- **Retained 11% energy** dietary reference value



Effects of changing type of fat on other risk factors?



Reaffirmation of importance of substituting saturated fatty acids with unsaturated fatty acids

Current intakes vs. recommendations - successes

| | Average daily intakes in UK adults | Dietary Reference Value | Meeting the recommendation? |
|--|------------------------------------|-------------------------|-----------------------------|
| Carbohydrates (% food energy) | 47.6% | 50% | (✓) |
| Total fat (% food energy) | 34.7% | 35% | ✓ |
| <i>Trans</i> fatty acids (% food energy) | 0.5% | 2% | ✓ |



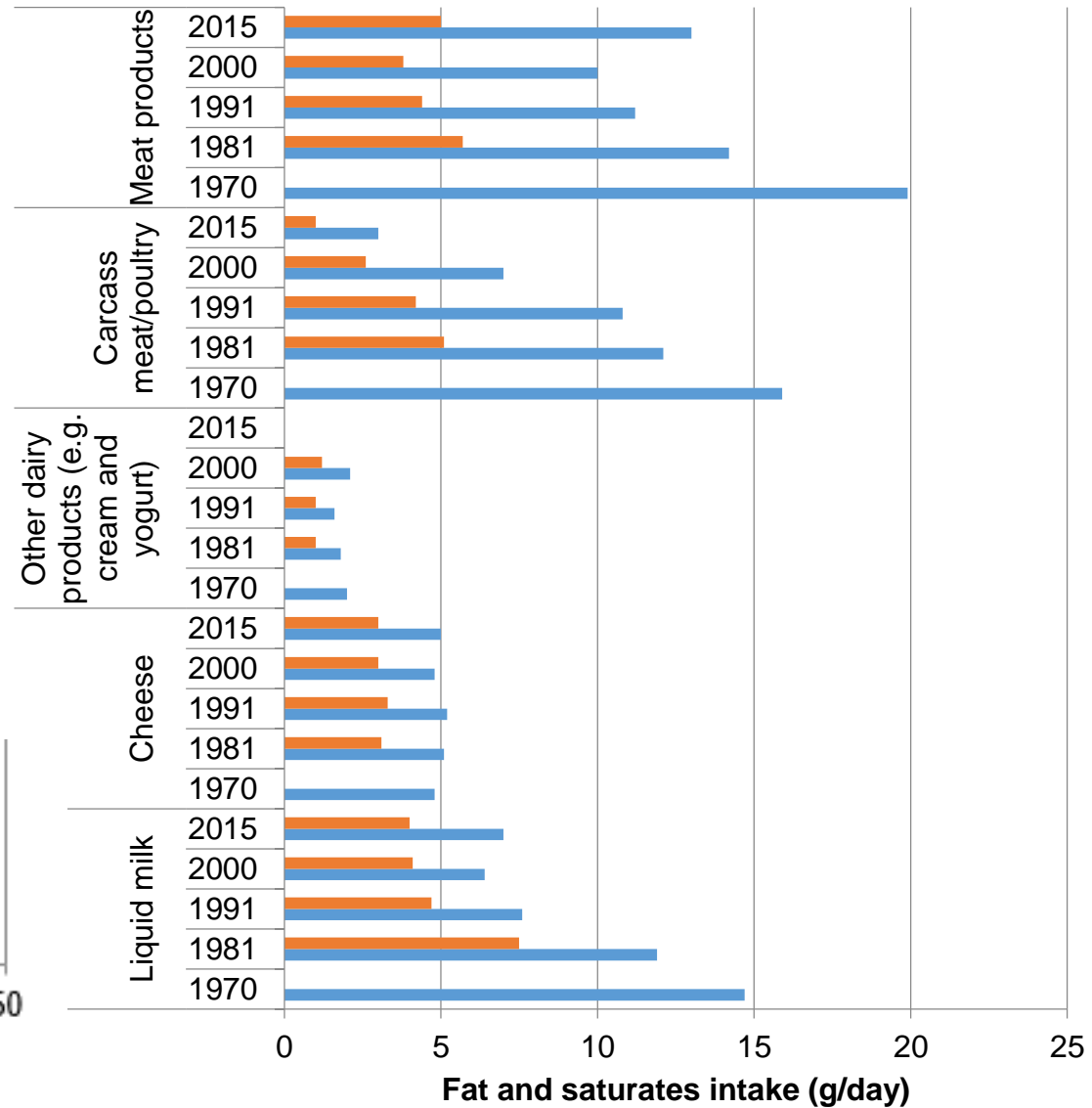
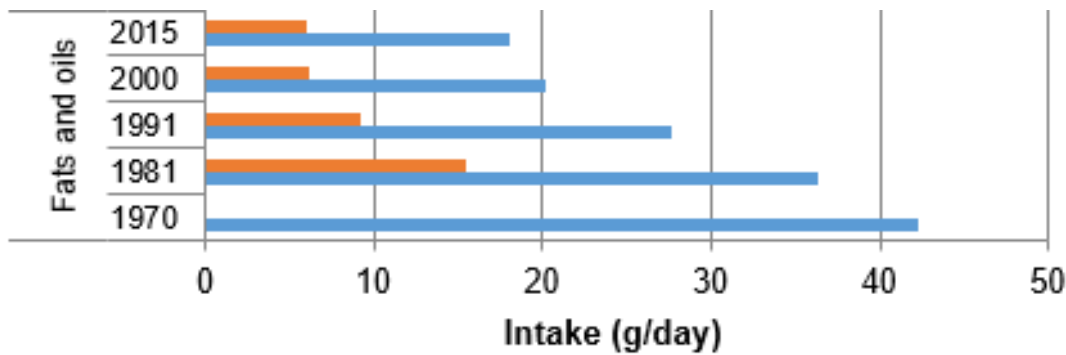
Current intakes vs. recommendations - challenges

| | Average daily intakes in UK adults | Dietary Reference Value | Meeting the recommendation ? |
|-----------------------------|------------------------------------|-------------------------|------------------------------|
| Saturates (% food energy) | 12.5% | 11% | ✗ |
| Free sugars (% food energy) | 11.7% | 5% | ✗ |
| Fibre (AOAC, g/day) | 19 g | 30 g | ✗ |
| | | | |



Trends in fat and saturated fat intakes

Saturated fat has fallen from above 16% of energy to below 12.5% since the 1980s. But intakes plateaued



Fibre has risen up the agenda

SACN: strong evidence from prospective studies – biologically relevant decrease in incidence of CVD, coronary events, stroke, type 2 diabetes (& colorectal cancer). Wholegrains & cereal fibre.

RCTs indicate that higher intake of specific types (e.g. oat bran and isolated beta-glucans) → lower total cholesterol, LDL-cholesterol and triacylglycerol concentrations, plus lower blood pressure.

Type and **variety** of fibre is important:

Some fibre types provide a substrate for the gut microbiota, increasing production of short-chain fatty acids which are thought to be advantageous e.g. soluble fibre (such as pectins and beta-glucans found in foods such as fruit and oats)

| Nutrient, substance or food | Health claim |
|-----------------------------|--|
| Beta-glucans | Maintenance of normal blood cholesterol concentrations |
| Oat beta-glucan | Oat beta-glucan has been shown to lower/reduce blood cholesterol. High cholesterol is a risk factor in the development of coronary heart disease |

Adult weekly meal plan

What can 5% free sugars and 30g fibre look like? ✓

| Monday | Tuesday | Wednesday | Thursday | Friday | Saturday | Sunday |
|---|---|--|---|--|--|---|
| Breakfast No added sugar muesli, semi-skimmed milk and canned peaches | Breakfast 2 slices wholemeal toast with peanut butter Skinny latte | Breakfast Bran flakes (4.3g), semi-skimmed milk and chopped banana | Breakfast Small can of reduced sugar baked beans (3.0g) on 1 slice of wholemeal toast | Breakfast 2 fortified wheat biscuits, semi-skimmed milk and chopped banana | Breakfast Scrambled eggs, grilled tomato and 2 slices of wholemeal toast | Breakfast Porridge with dried figs and seeds Tea |

Micronutrients?

Antioxidant nutrients

Observational studies reported inverse associations with risk of CVD **BUT** trials have demonstrated no beneficial effects on CVD events.



Vitamin D

Plasma vitamin D inversely associated with vascular & non-vascular mortality. Large scale trials underway to explore relationship between vitamin D and CVD.



Folic acid

Supplements can reduce levels of circulating homocysteine (?independent risk factor for CVD) but trials of long-term (5 years) B vitamin supplementation haven't found benefit for CVD prevention.



Vitamins and minerals - evidence of low intakes in adults in the UK

% males & females of different ages with intakes of micronutrients below lower reference nutrient intake (LRNI)

| | Females 19-64 | Females 65-74 | Females 75+ | Males 19-64 | Males 65-74 | Males 75+ |
|------------|---------------|---------------|-------------|-------------|-------------|-----------|
| Vitamin A | 10 | 7 | 10 | 16 | 6 | 5 |
| Riboflavin | 14 | 7 | 13 | 6 | 1 | 3 |
| Folate | 6 | 3 | 8 | 3 | 0 | 3 |
| Iron | 27 | 8 | 12 | 2 | 0 | 2 |
| Calcium | 11 | 11 | 10 | 7 | 0 | 4 |
| Magnesium | 11 | 11 | 27 | 14 | 6 | 22 |
| Potassium | 23 | 22 | 34 | 11 | 4 | 16 |
| Iodine | 15 | 6 | 9 | 9 | 2 | 4 |
| Selenium | 47 | 57 | 76 | 25 | 34 | 39 |
| Zinc | 8 | 3 | 12 | 7 | 5 | 8 |

Latest trends in UK micronutrient intake (2008-2017)

A significant downward trend in intakes of most vitamins and minerals (including folate and potassium) for most age groups, plus an increase in the proportion of people with low intakes.

Blood folate levels

- Decreased significantly for all age/sex groups, and increased proportion of population with levels indicating risk of anaemia (19 percentage point increase in 11-18 year olds and 9 percentage point increase in adults).
- Increased proportion of women aged 16-49 years with blood folate concentration below threshold for increased risk of NTD pregnancy (approx. two-thirds vs. almost 90%)
- Folate intake dropped to below the RNI (girls 11-18y)

Evidence of low intakes of **magnesium** and **potassium** in adolescents and adults.

Vitamin D: Average blood vitamin D level lowest from January to March (19% children 4-10 years, 37% children 11-18 years, 29% adults with levels indicating risk of deficiency)

Change in emphasis - dietary patterns

DASH diet (US)

- Low in sodium and saturates and high in potassium, calcium, magnesium, fibre and protein.
- Plenty of fruit, vegetables, wholegrains, low-fat dairy products, poultry, fish, beans, and nuts, while limiting foods high in saturates as well as confectionery and sugars-sweetened beverages.

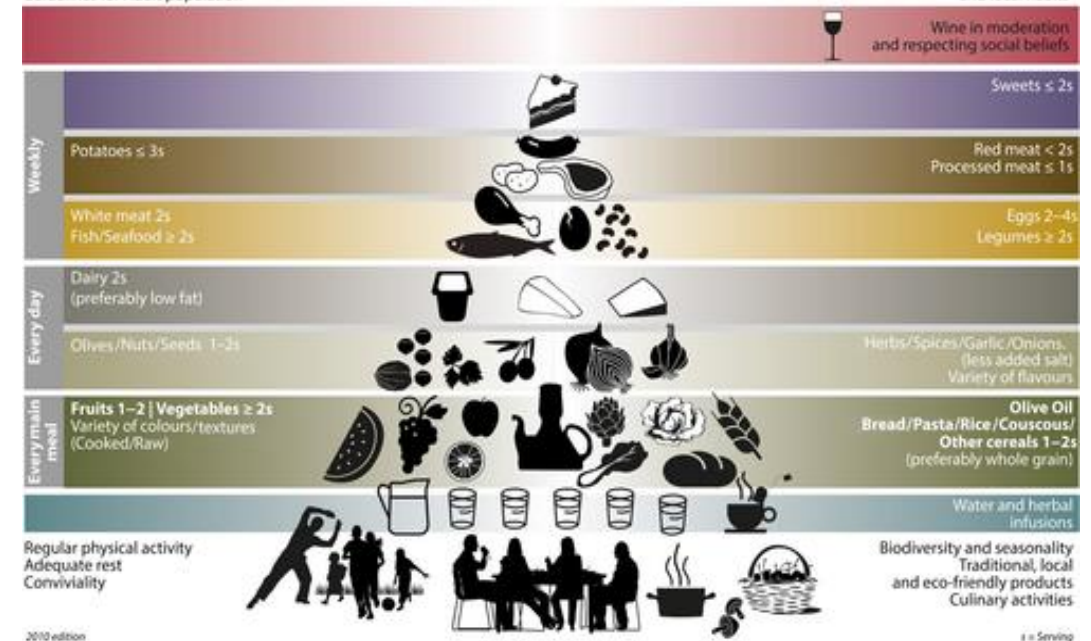
Plant-based dietary patterns associated with **~20% lower risk of CVD and type 2 diabetes.**

Characterised by higher intakes of fruit and vegetables, legumes, wholegrain cereals and fish and poultry.
(Section 13.5.4, p327)

PREDIMED – RCT – 30% decrease in CVD events.

Mediterranean diet - 10% decrease in CVD incidence or mortality - prospective (Sofi *et al.* 2010)

Mediterranean Diet Pyramid: a lifestyle for today
Guidelines for Adult population



Foods and diets vs single nutrients



Dietary pattern approach, outcomes not always as anticipated:

- DASH diet – low fat dairy products (Sacks et al 2001).
- DASH diet – benefits for blood lipids also reported for higher fat dairy (Chiu et al 2016). Cross-over RCT.
- Caerphilly prospective cohort study – lower systolic BP in milk drinkers (Livingstone et al 2013).
- Evidence from meta-analyses of prospective cohort studies: no significant increase in RR for CHD in high vs. low milk. (see Givens 2017)
- Dose response meta-analyses – suggest incremental CVD benefits with milk, yogurt and possibly cheese. Emerging evidence on possible mechanisms from RCTs. (see Givens 2017)
- Matrix effects proposed (Thorning et al 2017) – dairy matrix vs single nutrient – further work needed.
- Prospective PURE study (Dehghan et al. 2018).



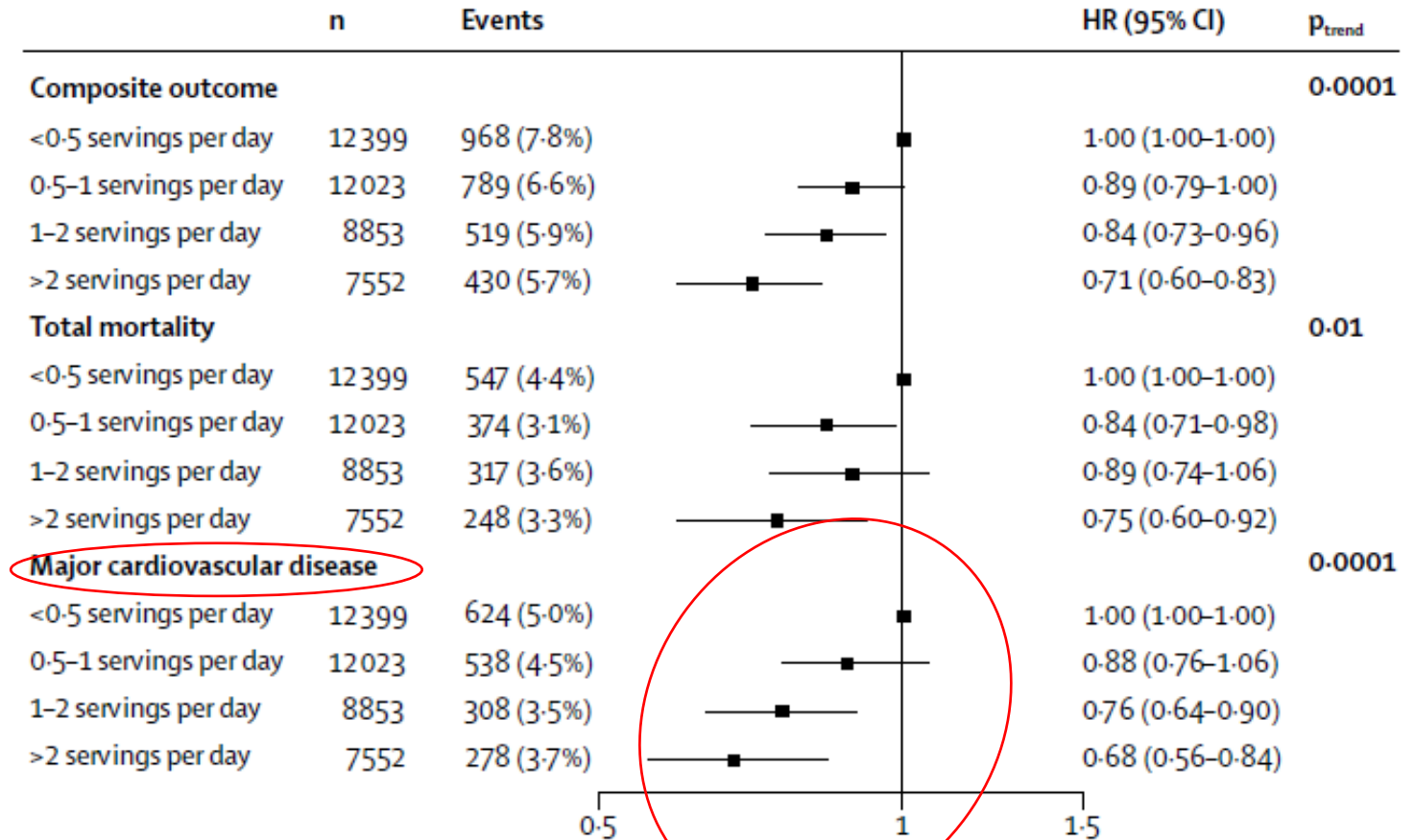
Association of dairy intake with cardiovascular disease and mortality in 21 countries from five continents (PURE): a prospective cohort study

(Dehghan et al. 2018)



PURE = Prospective Urban Rural Epidemiology study

- 136,384 individuals (35-70 years) from 21 countries; 10,567 events recorded over an average of 9 years.
- In contrast to current dietary guidelines, greater dairy consumption (milk and yogurt in particular) associated with lower risk of mortality and cardiovascular disease.
- Dose response for CVD, in particular, with whole milk products. 2 servings a day (compared to none) linked to a **16% reduction in CVD risk**. Not stat sig with mixture of whole and low fat. **No benefit with butter, cheese.**
- “Dairy products should not be discouraged and perhaps even be encouraged in low-income and middle-income countries where dairy consumption is low”.



Foods vs. nutrients

1. Milk and milk products

Suggestion that presence of other (health promoting) constituents in dairy food matrix may influence effect of saturates on health.

- Not all saturates raise cholesterol; matrix effects proposed

[Am J Clin Nutr.](#) 2017 May;105(5):1033-1045. doi: 10.3945/ajcn.116.151548. Epub 2017 Apr 12.

Whole dairy matrix or single nutrients in assessment of health effects: current evidence and knowledge gaps.

2. ‘Antioxidant hypothesis’ – relationship with the fruit & veg rather than extracted micronutrient components

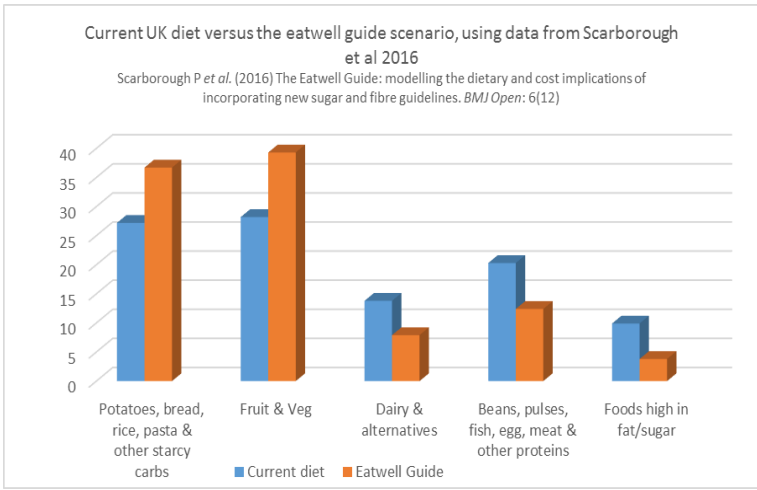
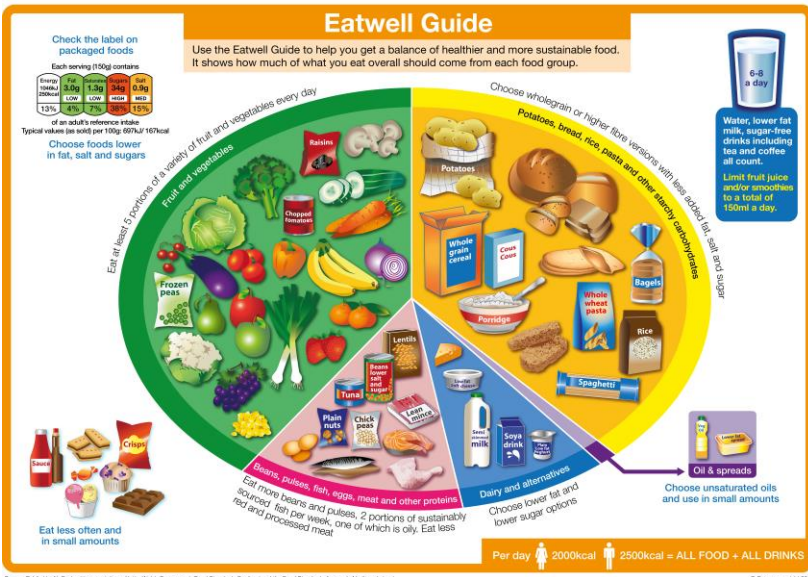
Saturated fats, dairy foods and health: A curious paradox?

D. I. Givens

Institute of Food, Nutrition and Health, University of Reading, Reading, UK



Moving towards a more plant-based diet



Canada's Food Guide

FIND YOUR BALANCE ACROSS THE DAY

The image below shows how many portions to aim for from each food group each day for a healthy, balanced diet.

GET PORTION WISE!

An easy guide for finding the right balance for you

Having a healthy, balanced diet is about getting the right types of foods and drinks in the right amounts for you. This guide aims to give you an idea of portion sizes for different foods for adults and how many portions of each food group to aim for each day.

It's so quick and easy to follow!

www.nutrition.org.uk/findyourbalance

FRUIT AND VEGETABLES 5+
A variety of different types each day

STARCHY CARBOHYDRATES 3-4
Potatoes, bread, rice, pasta and others

PROTEIN FOODS 2-3
Meat, poultry, fish, eggs, meat and others

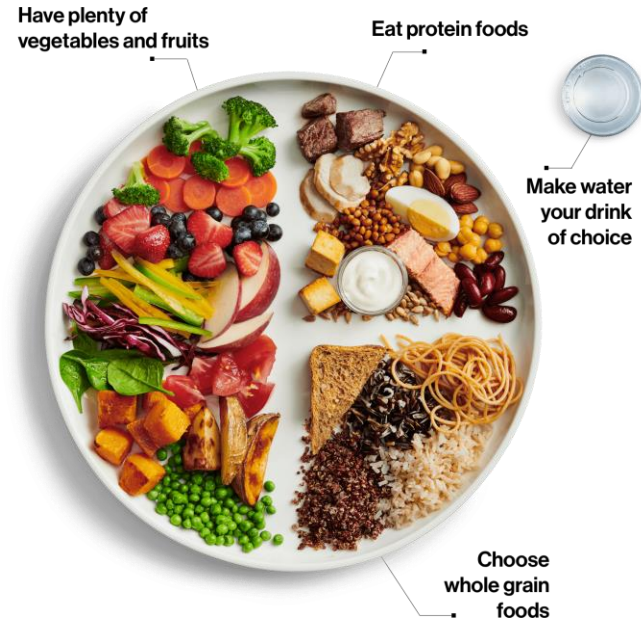
DAIRY AND ALTERNATIVES 2-3
Milk, cheese, yogurt and alternatives

UNSATURATED OILS AND SPREADS SMALL AMOUNTS

HANDY PORTION SIZES!

Your hands are perfect for measuring the right portion size for you – this guide gives examples of portion sizes for different food and drinks for adults. You can find portion sizes for more foods on the BNF website.

| Group | Food | Portion | Weight |
|----------------------|--------------------------------------|--|----------|
| Fruit & Veg | Fresh fruit | About one handful or more | 100g |
| | Vegetables | About 3 serving spoons or more | 40g |
| | Fruit juice | 1 small glass | 150ml |
| | Smoothie | 1 small glass | 150ml |
| | Smoothie or pasta | About 2 handfuls | 60-70g |
| | Cooked pasta or rice | About the amount that would fit in two fists cupped together | 100g |
| | Wholemeal bread | About 3 handfuls | 40g |
| | Cheese | About 1 level half handful | 40g |
| | Salad | About the size of your fist | 200g |
| | Peanut butter | About 3 handfuls | 25g |
| Protein | Grilled chicken breast | About half the size of your hand | 130g |
| | Cooked fish that is g. salmon or cod | About half the size of your hand | 100-140g |
| | Cooked steak | About half the size of your hand | 130g |
| | Cooked beef, chicken or turkey | About 1/2 palm | 120g |
| | Canard fat in water | One can about 100g net weight | 100g |
| | Meatballs | 25g | 25g |
| | Milk and dairy | The amount you can fit in your palm | 80g |
| | Low fat yogurt | About 4 tablespoons or one tablespoon per 20g | 120g |
| | Cheddar cheese | About the size of two thumbs together | 25g |
| | Milk or plant-based alternative | One regular glass | 200ml |
| Unsat. oil or spread | One teaspoon | 5-5g | |



Changing from the 'average' UK diet to the *Eatwell* diet would avert **17.9 million DALYs** (disability adjusted life years) over the lifetime of current population (Cobiac et al. 2016)

And reduce GHG emissions by around **20%** (Carbon Trust 2015)

Going forward

QC your cereal

Chocolate covered cereal with whole milk

Porridge with semi-skimmed or skimmed milk (or fortified non-dairy alternative), sliced banana and cinnamon

IT'S BEEN QC'd
 ↑ B vitamins ↑ potassium
 ↑ wholegrains ↑ free sugars



QC your morning roll

Fried egg, bacon and tomato sauce in a white roll

Poached egg, canned sardines and sliced tomato in a wholemeal roll

IT'S BEEN QC'd
 ↑ calcium ↑ fibre ↑ oily fish
 ↑ vitamin D



QC your toast

White toast with butter and jam

Wholegrain toast with peanut butter

IT'S BEEN QC'd
 ↑ fibre ↑ iron
 ↑ protein ↑ free sugars



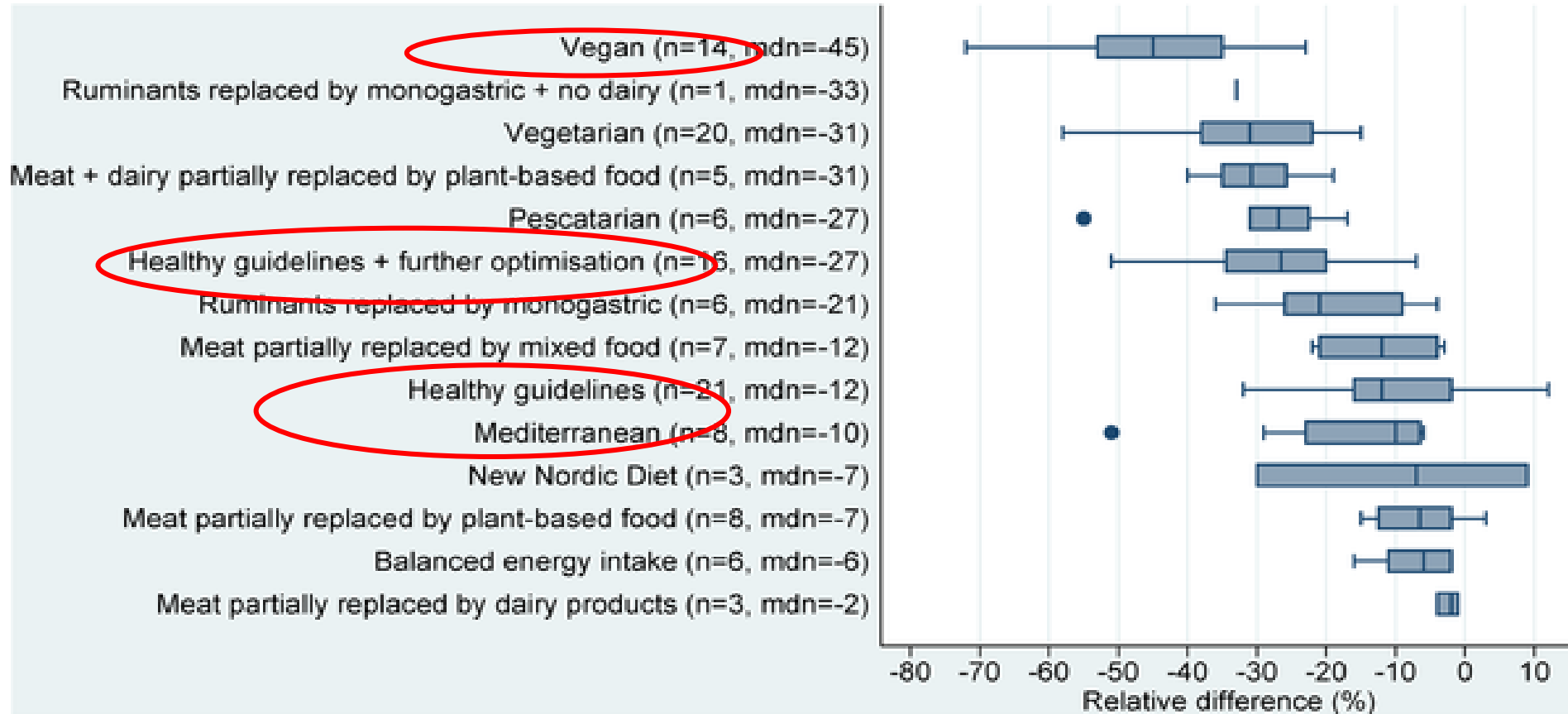
Grand challenge: providing a sustainable food supply for the world's growing and more prosperous population in the face of climate change.



| Sustainable food supply | Measures and metrics |
|-------------------------------|---|
| Nutrient dense | Nutrient profiling |
| Affordable | Affordability, value chain |
| Cultural and societal value | Context of patterns of use |
| Planet friendly (environment) | Land, water, energy, greenhouse gas emissions |

Drewnowski (2018)

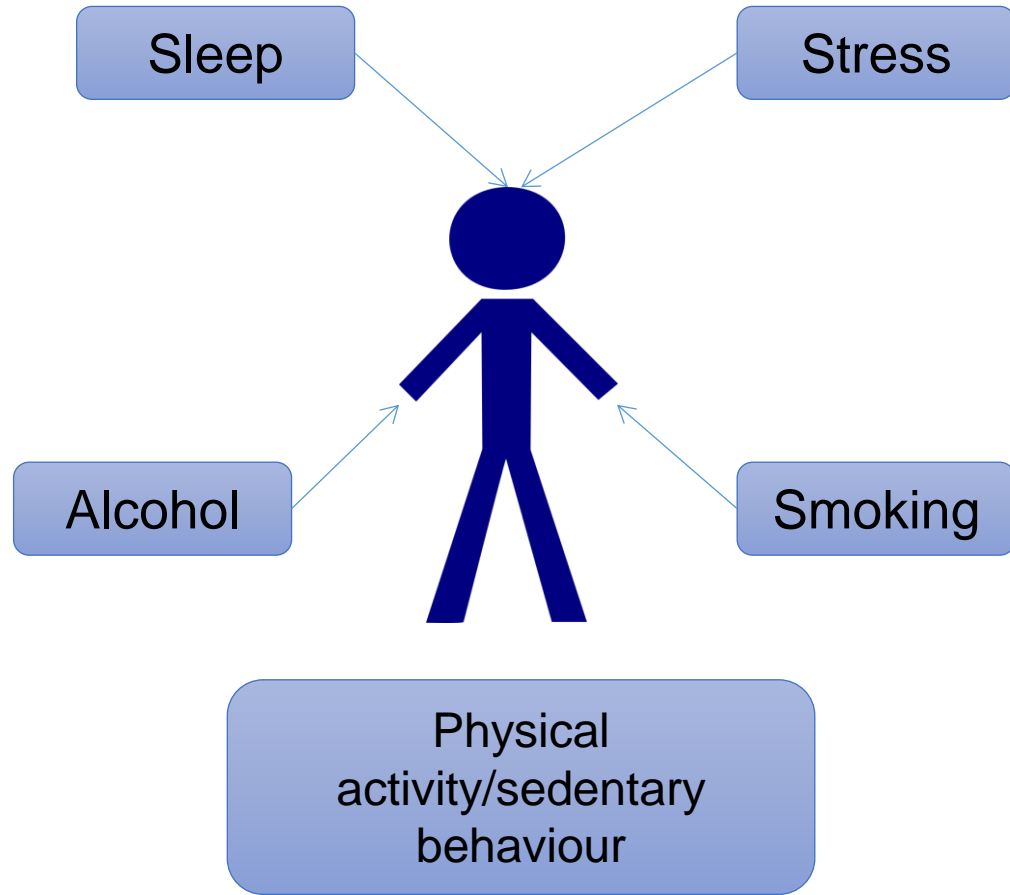
Going forward



Aleksandrowicz L, Green R, Joy EJM, Smith P, Haines A (2016) The Impacts of Dietary Change on Greenhouse Gas Emissions, Land Use, Water Use, and Health: A Systematic Review. PLOS ONE 11(11): e0165797. <https://doi.org/10.1371/journal.pone.0165797>
<https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0165797>

Green et al. 2015, modelling using NDNS:
 if average diets conform to **WHO dietary recommendations**, GHG emissions would reduce by **17%**.

Other lifestyle factors



Practical tips ...

- Diet & weight pre/during pregnancy
- Quality sleep
- Stress management
- Diet
- Body weight
- Alcohol

Helping to protect yourself from heart disease and stroke

| What you probably know | What you might not know | Why? | What you can do |
|--|--|---|---|
| Eating plenty of wholegrain and other fibre-rich foods is important for a healthy gut. | The microbiome in your gut (your microbiome) can influence your risk of heart disease. | The gut microbiome may have beneficial effects on risk factors for heart disease such as including blood cholesterol levels and influencing the immune response. | <ul style="list-style-type: none"> • Eat plenty of fruit and vegetables (at least 5 A Day of a variety of types). • Choose high fibre or wholegrain varieties of starchy carbohydrates whenever possible (including breakfast cereals, wholegrain bread, wholemeal pasta, brown rice) keep the skin on potatoes, get wholegrain snacks like wholegrain crackers. • Eat plenty of pulses (beans, peas and lentils). |
| Being overweight increases your risk of heart disease and stroke. | When you carry any excess weight it impacts on determining the risk of heart disease and stroke. | Carrying extra weight (the amount) increases a number of substances (including) that can increase your risk of heart disease. | <ul style="list-style-type: none"> • Regulate your height or weight, you should try to lose weight if you want to: <ul style="list-style-type: none"> - Men (23kg) or more for each foot - Women (21.5kg) or more for each foot • You are at very high risk and you should contact your GP if your waist is: <ul style="list-style-type: none"> - 102cm (40in) or more for men - 88cm (34in) or more for women |
| Your mouth will be linked to high blood pressure which increases your risk of a heart disease or stroke. | Other elements such as magnesium, calcium and potassium also appear to be important for heart health. | Studies show that these minerals may play a role in preventing hypertension (high blood pressure) and have other positive effects on risk factors for heart disease and stroke. | <ul style="list-style-type: none"> • Include foods that provide: <ul style="list-style-type: none"> - potassium (eg avocados, fruit and vegetables like potato, Brussels sprouts and banana, lentils, nuts, seeds, fish, and leafy greens) - magnesium (eg lentils, nuts, seeds and wholegrain) - calcium (eg dairy foods, small green leafy vegetables and canned fish with bones like sardines) • Reduce salt intake to less than 6g/day – that's around 1 tsp a day |
| Eating a healthy diet in pregnancy can influence your baby's growth and development. | Eating a poor diet or being overweight before and during pregnancy can increase your child's risk of becoming obese and developing heart disease and stroke in later life. | Maternal obesity and gestational diabetes (diabetes in pregnancy) influence a baby's size at birth and increase their risk of developing obesity later in life. | <ul style="list-style-type: none"> • Plan to enter pregnancy with a healthy body weight (BMI between 18.5 and 25 kg/m²) and avoid excessive weight gain in pregnancy • Eat a healthy diet and keep active where possible before and during pregnancy as well as wider breastfeeding (see facts for more information) |
| Widely used a range of supplements to provide the vitamins and minerals you need to protect your heart. | You can't rely on supplements to provide the vitamins and minerals you need to protect your heart. | A range of vitamins, minerals and bioactive compounds in foods can help protect your heart. The studies found above show that consistent intake from regular consumption of a variety of foods is the best way to protect your heart. | <ul style="list-style-type: none"> • Make sure you get plenty of vitamins and minerals by eating a varied diet with plenty of plant-based foods (eg 5 A Day to provide vitamin C), lean meats and a range of bioactive compounds. • Eat foods that naturally contain high amounts of polyphenols including: <ul style="list-style-type: none"> - berries, citrus fruits, green tea, dark chocolate, and olive oil - leafy greens, nuts and seeds • Eat foods that contain B vitamins like wholegrain, dairy foods and fish. • Eat foods that are natural sources of (poly)phenols, flavonoids or terpenes. |
| Too much saturated fat in your diet is bad for your heart. | When you replace the saturated fat in your diet with other fats it can help to reduce your risk of heart disease and stroke. | Replacing saturated fat with unsaturated fat and complex carbohydrates may benefit blood cholesterol and other heart disease and stroke risk factors. Replacing saturated fat with other fats such as polyunsaturated fats can help to reduce your risk of heart disease and stroke. | <ul style="list-style-type: none"> • Choose foods that contain a higher proportion of unsaturated fats (polyunsaturated and monounsaturated fats) and a lower proportion of saturated fats. • Saturated fats and trans fats and spreads made with these, flavoured margarine and butter, reduce cholesterol levels and increase your risk of heart disease. • Replace saturated fats with unsaturated fats from these oils, avocados and nuts as they are rich in monounsaturated fats. • Cut back on foods containing high levels of trans fats (found in some processed foods) and avoid trans fats. |
| Eating enough good quality sleep is important for health and wellbeing. | A lack of sleep and poor quality sleep is linked to an increased risk of heart disease and stroke. | Insufficient sleep has been linked to an increased risk of heart disease, stroke, type 2 diabetes, obesity and high blood pressure. Poor quality sleep, which is short duration, has been suggested to further increase the risk. | <ul style="list-style-type: none"> • For general health and wellbeing aim for between 7 and 9 hours of sleep every night. |
| Drinking alcohol in excess is not good for your health. | Too much alcohol and in excess can increase a wide range of heart disease and stroke risk factors. | Heavy or binge drinking is associated with increased blood pressure, high blood cholesterol and raised triglyceride levels. Excessive alcohol consumption can also lead to heart failure. | <ul style="list-style-type: none"> • Don't drink more than 14 units of alcohol per week. • If you do drink no more than 14 units per week, don't 'bun up' the units, but spread them evenly over 7 or more days and have several alcohol-free days a week. |
| Stress is linked to high blood pressure. | Workplace stress increases the risk of heart disease and stroke. | Stress, in particular job-related pressure and long working hours, has been shown to increase the risk of heart disease and stroke. Exposure to stress is thought to activate the hypothalamic-pituitary-adrenal axis, leading to an increase in heart rate and blood pressure which can affect the vessel walls and lead to impaired functioning of the lining of arteries. | <ul style="list-style-type: none"> • Look after your mental health and practice ways to manage your own stress that work for you and your lifestyle. |
| Being physically active helps you to keep your heart healthy. Physical activity can reduce the risk of heart disease and stroke. | Being sedentary for long periods of time is a major risk factor for heart disease and stroke. Physical activity can reduce the risk of heart disease and stroke. | Regular exercise will make your heart and blood circulation system more efficient, lower your blood pressure, improve your cholesterol levels and help your blood vessels. Physical activity can also have beneficial effects on inflammation and insulin resistance. These effects being beneficially associated with lower blood pressure, high blood pressure and increased risk of type 2 diabetes. Physical activity can also help to reduce the risk of heart disease and stroke. | <ul style="list-style-type: none"> • Make sure that you are doing at least 150 minutes (2 1/2 hours) of moderate intensity activity each week to maintain or improve fitness. • Moderate intensity activity usually refers to raising breathing and heart rate to a level where the pulse can be felt and the person has to work to breathe through the day. • Break up long periods spent sitting with periods of walking or standing throughout the day. • Increase the amount of time spent doing sedentary activities, such as watching TV, using the computer and active transport where possible. |
| Smoking increases your risk of heart disease and stroke. | Smoking can narrow your arteries and make your blood more likely to clot. | Compulsions to cigarette smoking increase the risk of blood clots and raise blood cholesterol levels. | <ul style="list-style-type: none"> • Don't start smoking and if you do, seek help to stop. |

*Body Mass Index

Developed based on the BNF Third Edition Report, Cardiovascular Disease, Nutrition and Emerging Risk Factors 2nd Edition, ©2017 www.nutrition.org.uk

Take home messages 1

- Our new Task Force report supports existing UK dietary and lifestyle recommendations for CVD prevention. However, understanding of the mechanisms by which such factors may influence CVD risk, via established and more emerging risk factors, has improved considerably since the last edition.
- Despite recent controversy, the consensus scientific view supports a beneficial effect of reducing dietary saturated fat and replacement with unsaturated fat. However, the food matrix should be considered when giving dietary advice.

Take Home messages 2

- The importance of dietary patterns over and above individual macronutrients is increasingly recognised, with a remarkable consistency in associations between healthy dietary patterns and decreased disease risk. This is important in the context of an ageing population and the need to reduce risk of other conditions such as cancer and dementia.
- Healthy dietary patterns are typically characterised by:
 - higher consumption of vegetables, fruit, wholegrains, low-fat dairy products, seafood, nuts, seeds, legumes
 - lower intakes of fatty/processed meat, refined grains, sugar-sweetened foods and beverages, salt, saturated fat.

- Report available in electronic and hard copy formats
- Discounted price (25% off) if purchased today (visit BNF stand)
- From 1st March, available from www.wiley.com

