Chelsea and Westminster Hospital NHS
NHS Foundation Trust

‘Your Health’

Topic:

Diet and Stroke risk

Speaker: Kush Gor RD

We will discuss…

- What is stroke?
- Risk factors
- Diet related risk factors
- Practical advice

What is stroke?

- Occurs when supply of blood to the brain is cut off
- Resulting damage can cause life long disabilities

Two main types:

- **Ischaemic:** caused by blockages which starve the brain of blood
- **Haemorrhagic:** caused by blood vessels within or on the brain bursting
- **TIA:** temporary disruption in blood supply to brain

Facts & Figures

- 100,000 strokes per year in the UK (around 1 every 5 minutes)
- 4th biggest killer in England and Wales
- People are having strokes earlier in their lives
- 25% of stroke survivors will experience another CVA within 5 years
- Nearly ⅔ of stroke survivors leave hospital with a disability
- Cost to society of £26b a year

Stroke Association

(Stroke Association, 2018)

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Risk factors

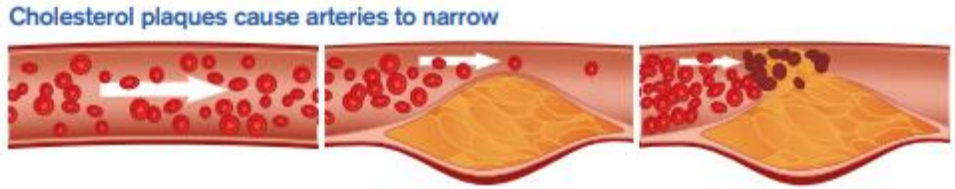
Unmodifiable

- Age
- Sex
- Family history
- Ethnicity

Modifiable

- Dyslipidemia
- Hypertension
- Type 2 diabetes
- Overweight & obesity
- Alcohol
- Physical inactivity
- Smoking

Atherosclerosis



- Build up of fatty material (plaque) **in** artery wall
- Plaque can form a clot or break off and form a clot elsewhere
- Occurs in different arteries: coronary, peripheral, renal, carotid

Stroke

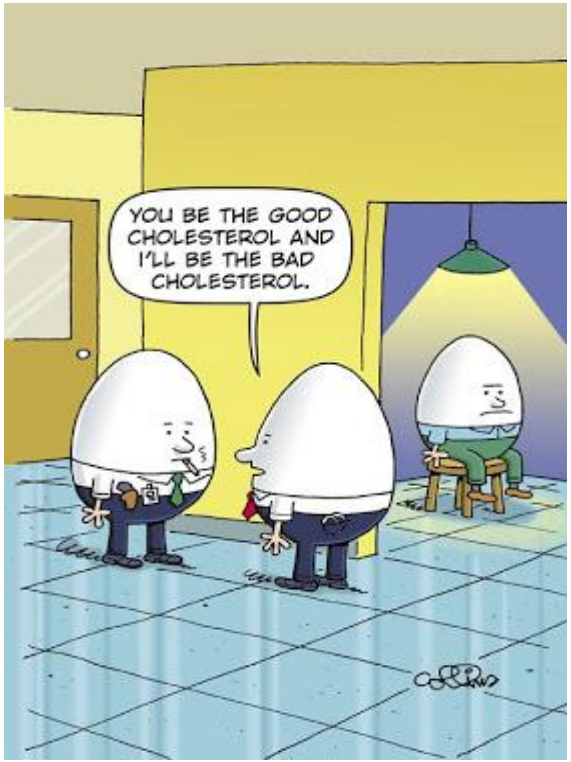
- Atherosclerosis in vessels that supply brain (**carotid arteries**)

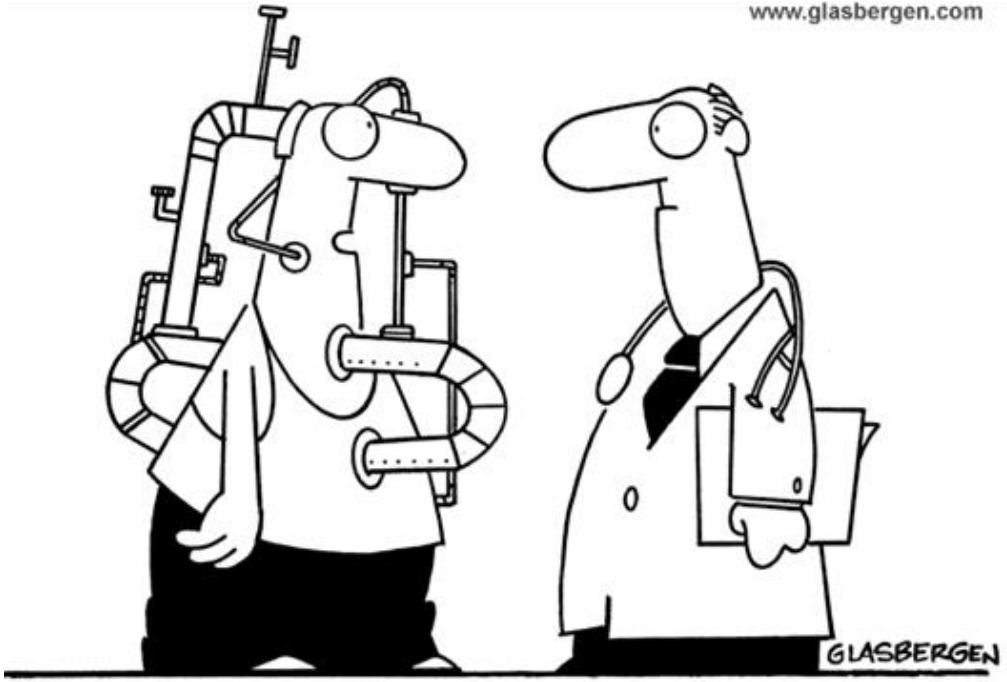
Diet

- Diet related risk factors affect this process directly or indirectly

Dyslipidemia

- Cholesterol is essential to life
- Lipoproteins transport cholesterol in the blood
- **Total cholesterol**
- **LDL-c** aka “bad cholesterol”
- **HDL-c** aka “good cholesterol”
- **Triglycerides**



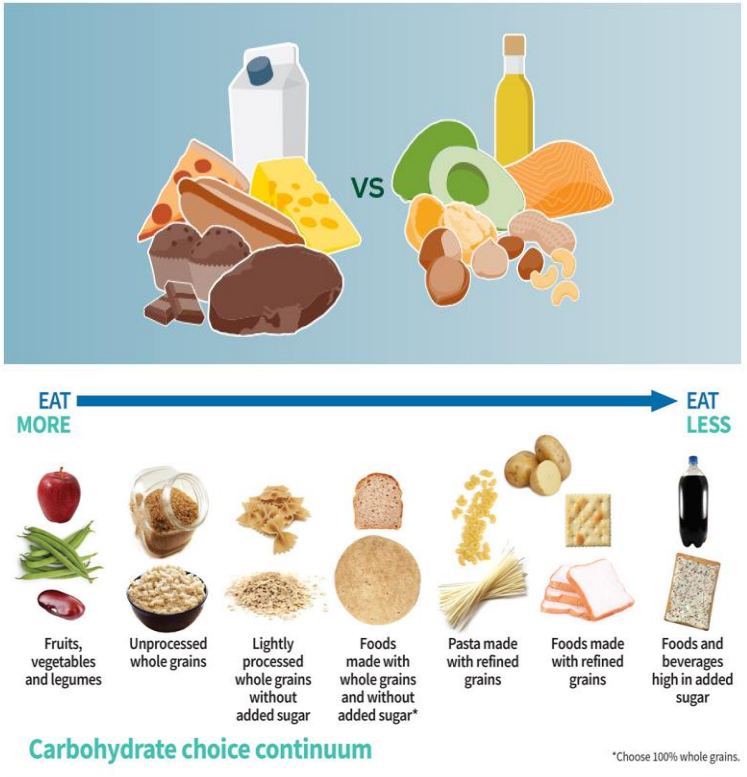


"I had my plumber install new pipes.
I got tired of fretting about my cholesterol!"

Diet and cholesterol

- Healthy weight + healthy waist
- SFA → PUFA
- Refined CHO → Unrefined CHO
- ↑ Soluble fibre
- Limit alcohol
- **Dietary chol does not affect serum chol**

(*JBS3, 2014*)



Saturated fat

sacn
Scientific Advisory Committee on Nutrition

= 8g

= 2g

UK Recommendations

- Males: <30g
- Females: <20g

(SACN,2018)

= 10.4g

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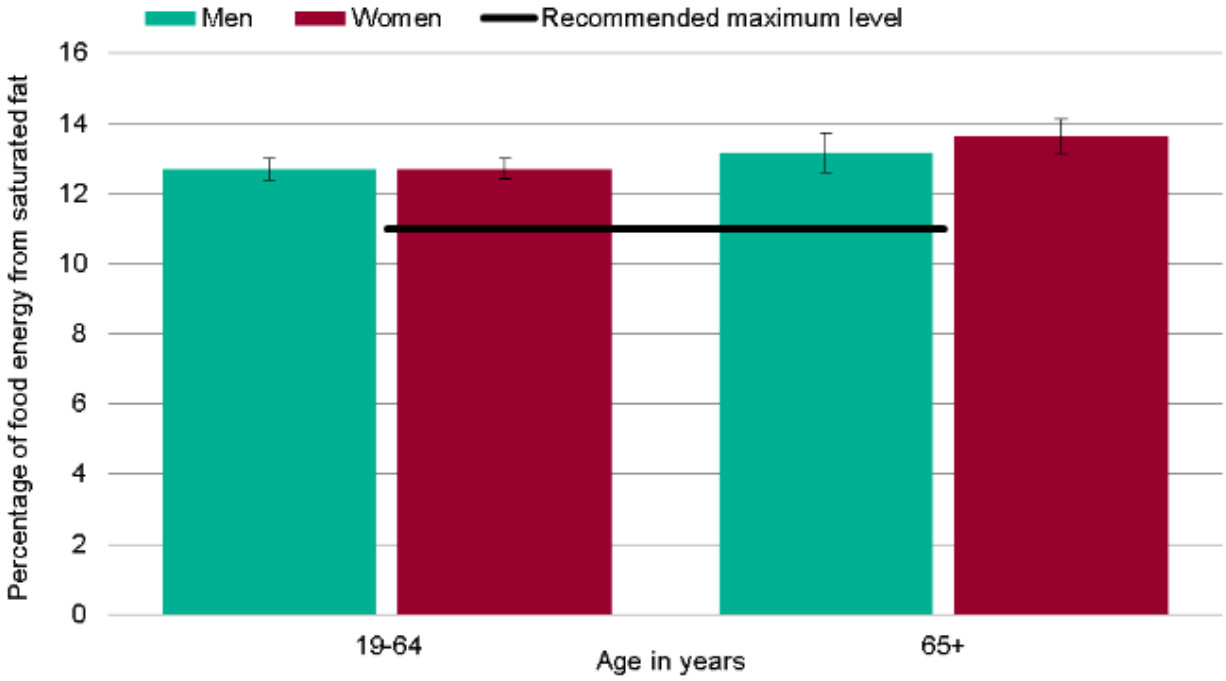
Food energy from saturated fat

Men and women aged 19-64 and 65+ years: National Diet and Nutrition Survey (2012/13 to 2013/14)



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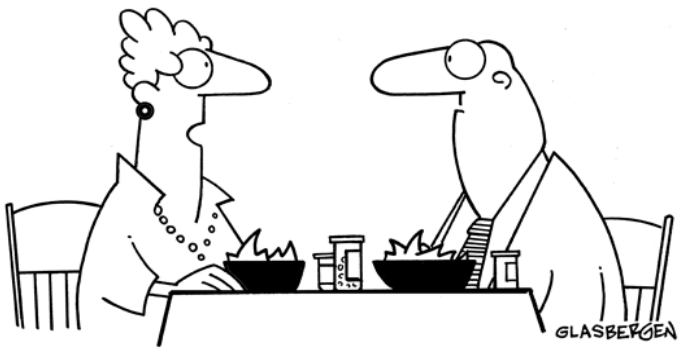
Cholesterol: practical advice

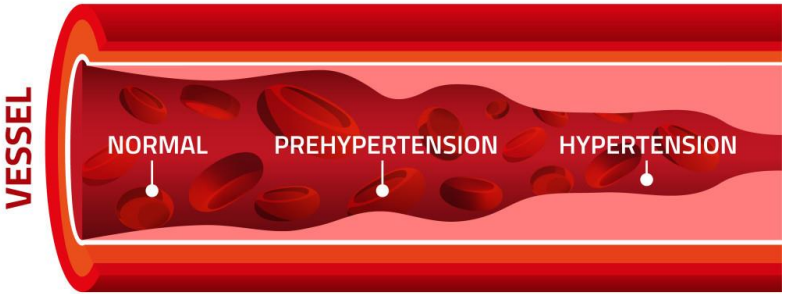
- Swap butter, lard, ghee for olive oil, olive oil spread or cooking spray
- Choose lean cuts of meat, trim visible fat and remove skin from chicken and turkey
- Eat more oats, beans, peas and lentils
- Swap beef, lamb, pork for chicken, fish and turkey
- Grill, bake or steam meat and fish instead of frying
- Snack on nuts and seeds instead cakes and biscuits

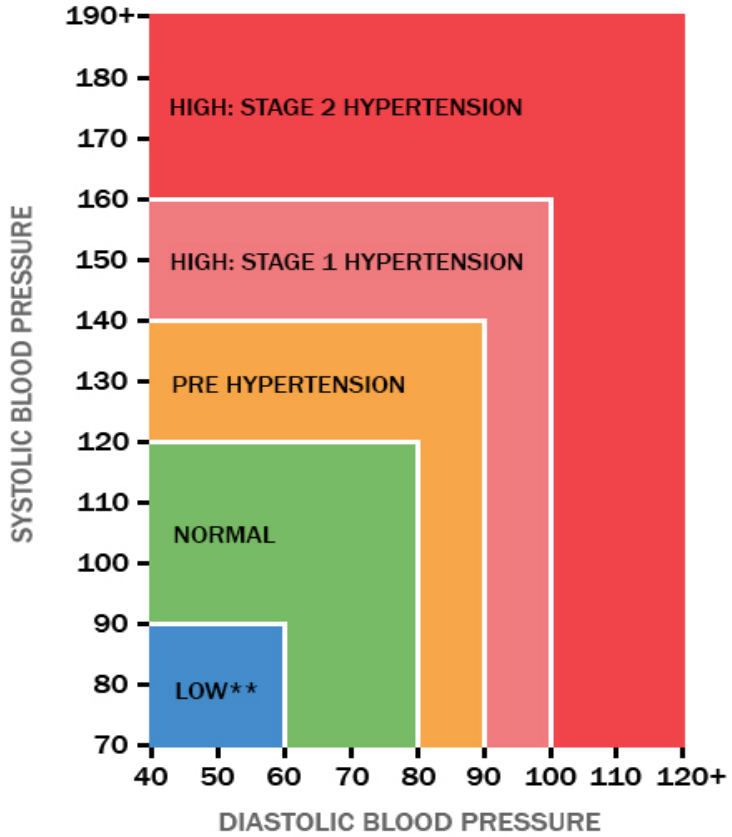


"If you had more love in your heart, there'd be less room for cholesterol!"

Hypertension

- ↑ risk of ischaemic and haemorrhagic stroke
- Extra strain can damage blood vessels
- May also cause vessels to burst → haemorrhagic

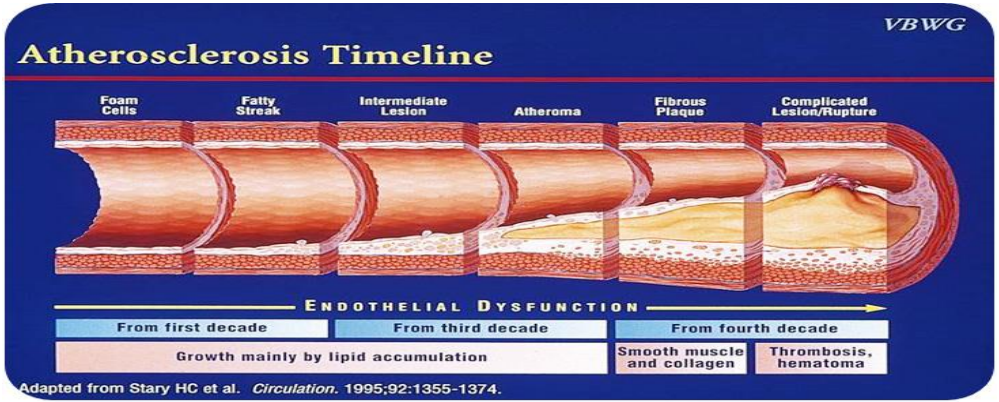





VS.
Small bowl of Breakfast cereal (0.5g salt)
Small bowl of Muesli (0.2g salt)
60% LESS SALT
VS.
10g Biltong (0.6g salt)
10g dried apple / dried fruit (0.02g salt)
96% LESS SALT
120g Portion of Chicken frozen in brine (1g salt)
VS.
120g Portion of Fresh Chicken (0.14g salt)
80% LESS SALT
120g Crumbed fish (1.1g salt)
VS.
120g Fresh fish (0.4 g salt)
64% LESS SALT
½ a teaspoon salt (2.5 g salt)
VS.
½ a teaspoon stock cube (1.4g)
44% LESS SALT
VS.
Small packet of chips (0.9g salt)
Small packet Salted nuts (0.4g)
56% LESS SALT
VS.
2 Tablespoons of cheese spread/ cheese triangle (0.8g salt)
2 Tablespoons of cottage cheese (0.3g salt)
56% LESS SALT

T2DM and atherosclerosis

- Almost **doubles** risk of stroke
- Excess glucose in blood contributes to atherosclerosis
- Type 2 diabetics tend to have higher triglycerides and lower HDL



Diet and type 2 diabetes

New T2DM guidelines: prevention:

- restrict energy intake

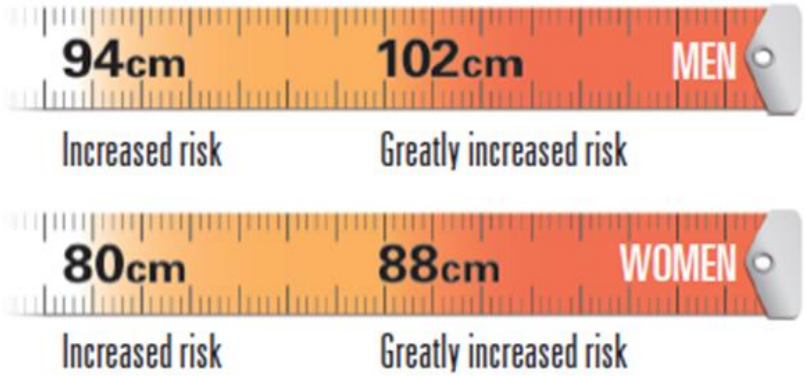
- aim for at least 5% weight loss
- reduce total fat and SFA
- increase fibre
- More foods associated with reduced risk: some fruit, green leafy vegetables, wholegrains, yogurt
- Less food associated with increased risk: SSB and refined carbs
- Mediterranean diet?

Diabetes UK, 2018

Weight and stroke

Overweight and obesity ↑ risk of:

- Hypertension, Dyslipidemia, T2DM



Targets

- BMI: 18.5-24.9 kg/m2
- Waist: <80cm for F, <94cm for M
- **10% weight loss = ↓10 mmHg systolic BP, ↓10% TC, ↑8% HDL-c** *(JBS3, 2014)*

Public Health England

Health risk categories

Health Survey for England/NICE

BMI	Waist circumference: Low Men: <94cm Women: <80cm	High Men: 94-102cm Women: 80-88cm	Very high Men: >102cm Women: >88cm
Underweight (<18.5kg/m^2)	Underweight (Not Applicable)	Underweight (Not Applicable)	Underweight (Not Applicable)
Healthy weight (18.5-24.9kg/m^2)	No increased risk	No increased risk	Increased risk
Overweight (25-29.9kg/m^2)	No increased risk	Increased risk	High risk
Obese (30-34.9kg/m^2)	Increased risk	High risk	Very high risk
Very obese (≥40kg/m^2)	Very high risk	Very high risk	Very high risk

Public Health England

Adult very high waist circumference

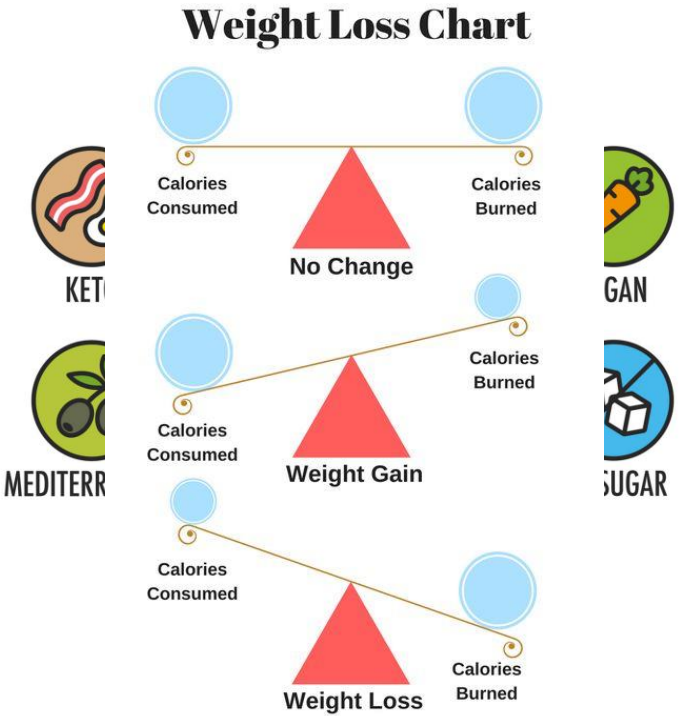
Health Survey for England

Adults aged 16+

Very high waist circumference is taken to be greater than 102cm in men and greater than 88cm in women

Weight and diet

- Weight gain results from a caloric surplus
- No magic diet
- The best diet is the one you can stick to
- Low carb, low fat, ketogenic, intermittent fasting, 5:2
- -600kcal for sustainable wt loss *(NICE CG189, 2014)*



Alcohol and stroke

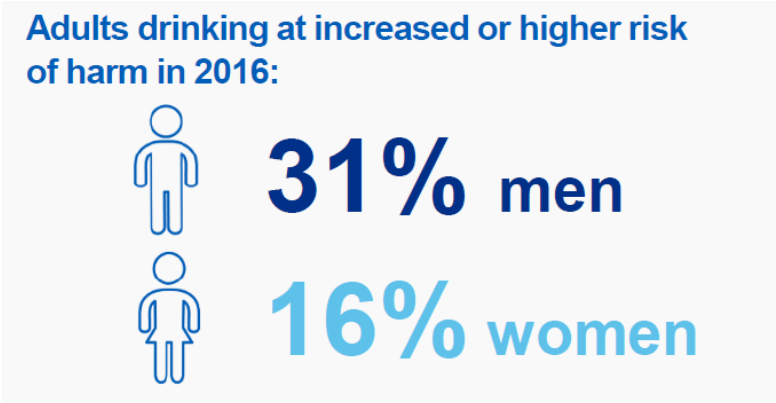
- Excess intake associated with ↑ stroke risk
- Intake above 3u/day = ↑ SBP + ↑ DBP + ↑ risk of haemorrhagic stroke *(Mazzaglia et al., 2001)*
- Binge drinking associated with higher risk of stroke *(Mazzaglia et al., 2001)*
- ↑ risk of diabetes
- ↑ triglycerides
- ↑ overweight and obesity
- ↑ risk of atrial fibrillation - increases risk of stroke 5x

Alcohol recommendations

- ≤14 units/week *(DoH, 2016)*
- If drinking 14u/week, spread over the week
- ? pints average strength beer
- ? 175ml glasses average strength wine

Alcohol - practical advice

- Use a unit calculator
- Smaller sizes: bottles vs pints, small glass vs large
- Swap high ABV% for low
- Dinner only drinking
- Alternate alcohol with water
- Several alcohol free days



General dietary principles

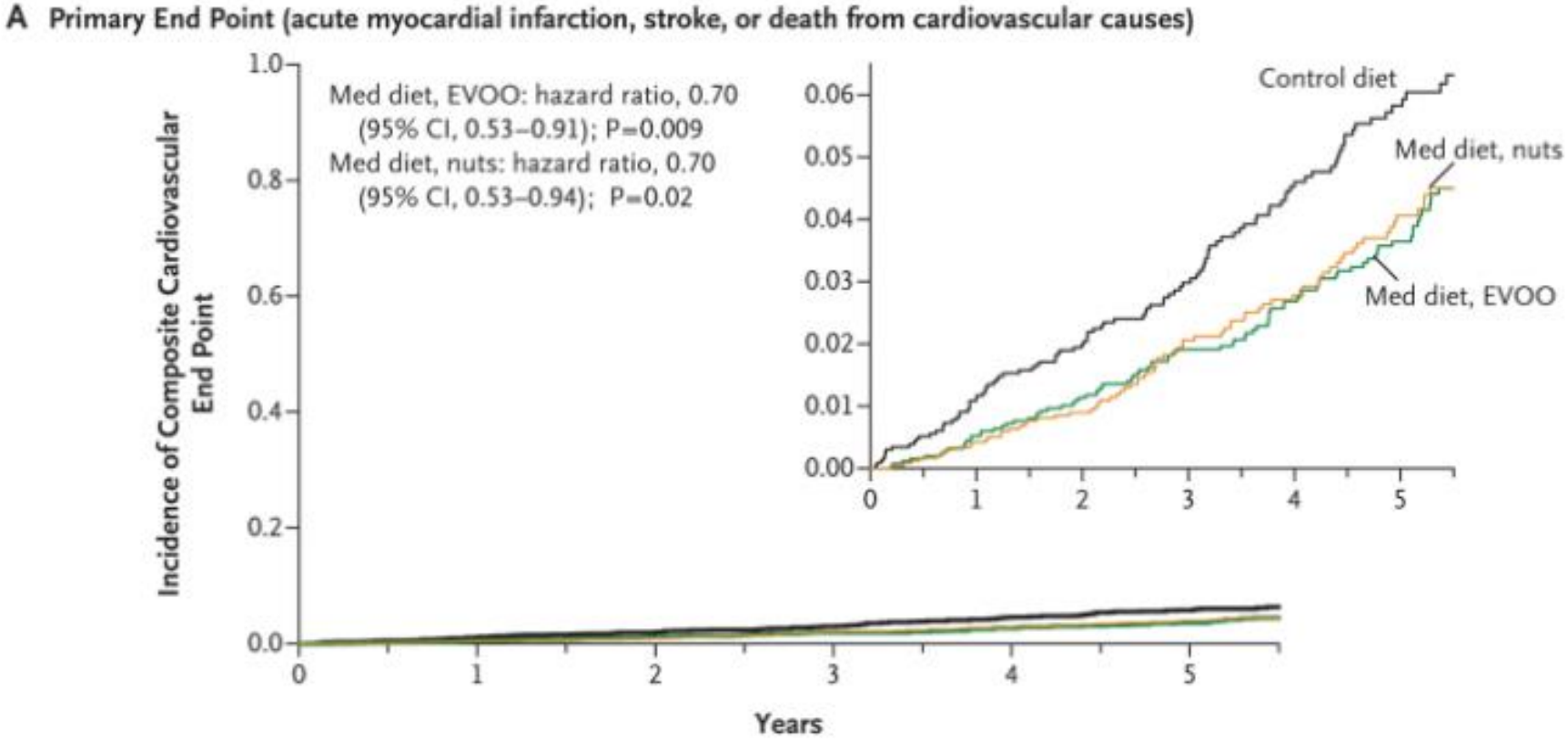
- Calorie controlled diet - aim for 10% wt loss in overweight/obese individuals
- Two portions fish/wk (1x oily)
- More wholegrains, nuts and legumes (↑fibre ↓GI)

- Less processed meat, refined carbs, SSBs, calorie rich nutrient poor snacks (↑GI ↓fibre)
- 5 portions F+V/day - **or 10?**

Mediterranean Diet

- Olive oil principal source of dietary fat
- Abundant in plant foods: fruit veg nuts seeds unrefined cereals legumes
- Less meat, more fish
- Low to moderate dairy and wine (with meals)
- MD vs low fat: (↑wt loss ↓BMI,↓SBP↓DBP,↓cholesterol,↓fasting blood glucose)

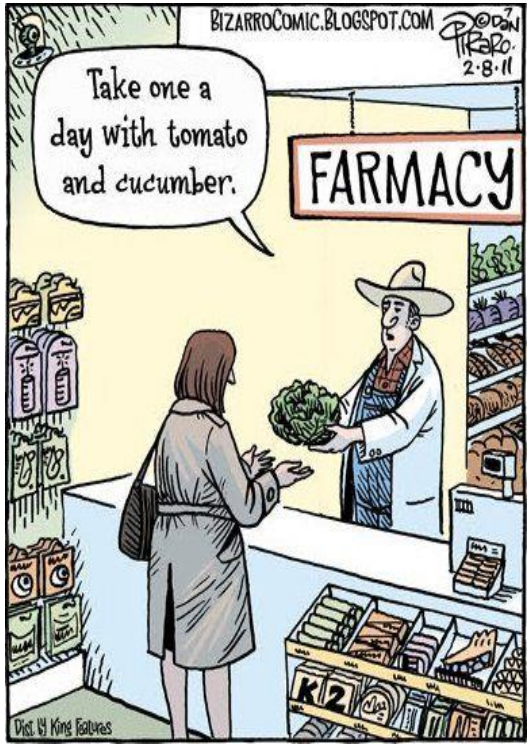
(Nordmann et al., 2011)



(Estruch et al., 2013)

Take Home Messages

- Diet can play a vital role in stroke prevention
- Maintain a **healthy weight** and a **healthy waist**
- Eat more fruit, vegetables and fibre
- Eat less nutrient poor foods
- Substitute SFA (especially in processed food) for USFA
- If you do drink, do so in moderation
- Avoid excess salt, especially if you have high BP



Any questions?

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