

Nutrition and cardiovascular disease risk



This is the third Fact File in our series on Diabetes UK's nutritional guidelines for the prevention and management of diabetes¹. Here, **Emma Elvin**, Senior Clinical Advisor and **Zahra Sajad-Mohamed**, student dietitian, take a closer look at the recommendations for cardiovascular disease risk reduction in people with diabetes

The latest evidence on nutrition and cardiovascular (CVD) risk reduction in people with diabetes focuses on helping people to make healthier food choices, rather than emphasising certain nutrients.

Which dietary patterns should we be encouraging for CVD risk reduction?

The Mediterranean dietary pattern and the Dietary Approaches to Stop Hypertension diet (DASH) are both recommended to reduce CVD risk factors and CVD events. These dietary patterns can have beneficial impacts on diabetes management, including weight management, lowering blood pressure and improving lipid profile and HbA1c levels. Therefore, advising and encouraging your patients to adopt a Mediterranean style pattern, or equivalent, is an effective strategy for CVD risk reduction.

What about dietary fat?

There have been controversies around the amount and type of dietary fat and CVD risk. Recent evidence has shown that the exact proportion of energy obtained from fat is not as important as the type of fat consumed. In the Look AHEAD study², low-fat diets did not show a significant reduction in actual CVD events and CVD mortality in people with Type 2 diabetes. Incorporating up to 40% of mostly unsaturated fat³ in the diet confers similar benefits on lipid profile, to diets with less than 30% of energy from fat².

Is saturated fat back?

A number of studies have investigated the effect of lowering saturated fatty acids (SFA) on CVD risk and looked at whether the replacement nutrient mattered.

A recent Cochrane review of randomised controlled trials (RCTs) reported that reducing SFA could reduce the risk of CVD by a small, but significant, 17%⁴. They also found that replacing SFA with polyunsaturated fatty acids (PUFAs) was beneficial, but replacing it with refined carbohydrates may be detrimental, while monounsaturated fat (MUFA) did not achieve similar benefits. A meta-analysis of RCTs³ conducted in people with Type 2 diabetes did, however, find a positive effect of a Mediterranean type MUFA diet on CVD risk. Diabetes UK and the Diabetes Specialist Group of the British Dietetic Association reviewed all the evidence and released a policy statement saying that, pending definite evidence, reducing SFA is recommended and that replacing it with wholegrains and/or unsaturated fat (PUFAs and MUFAs) reduces the risk of CVD, while replacing it with refined carbohydrate increases the risk⁵.

Food sources of PUFAs & MUFAs

- PUFAs: sunflower oil, corn oil and oily fish
- MUFAs: olive oil, rapeseed and walnut oil, and avocados

While it is important to advise patients to reduce food sources high in SFA, discussing what they will replace it with is critical. Foods that are high in unsaturated fat and/or wholegrains are useful replacements. Wholegrains are high in fibre, which has been shown to improve lipid profile (particularly soluble fibre).

Finally, trans fatty acids, which are commonly found

in biscuits, pies, cakes, fried foods and fast food have a similar effect as SFA on CVD risk.

Healthy food swaps

Less healthy	Healthier
Pies and pastry	Wholegrains, such as brown rice, beans, pulses
Red and processed meats	Oily fish Fruit, vegetables
Butter, ghee	Olive or rapeseed oil

Is a low-carbohydrate diet useful for CVD risk reduction?

There is some evidence to suggest that low-carb diets are safe and effective in the short term for some people for weight loss, improving glycaemic control and for reducing CVD risk. However, there are no studies looking at CVD end points in the long term and there is no consensus on what actually constitutes a low-carbohydrate diet.

Although there is no evidence to suggest that low-carbohydrate diets are superior to other approaches, some people may find it useful for weight loss. A dietitian can provide further information on how to plan and follow a low-carb diet safely⁶.

Are there specific foods that protect against CVD?

Foods commonly consumed in the DASH and Mediterranean diet are all associated with a reduced risk. These foods include fruit and vegetables, wholegrains, pulses, fish, nuts and unsaturated oils (particularly olive oil). Oily fish, which is high in omega-3 (a type of PUFA), has also been associated with a reduction in risk as it helps to lower blood pressure and triglyceride levels. It can also protect the heart and blood vessels. Consuming oily fish at least twice a week has therefore been recommended for people with diabetes. Foods such as red and processed meat, refined carbohydrates and sugar-sweetened beverages increase the risk.

What about salt?

Increasing salt in the diet can increase blood pressure, a major risk factor for CVD. Current guidelines recommend consuming no more than 6g per day. Advise patients to cut back on salt with small changes, such as swapping salt for herbs and spices when cooking.

Can I recommend plant sterols or stanols?

Products containing plant sterol or stanols (2g to 3g per day) are effective in lowering LDL cholesterol levels and can be recommended for those who want to try them. However, there is not much hard evidence on CVD end points.

What about alcohol?

There is some evidence that low to moderate intake of alcohol is associated with a lower incidence of CVD in people with diabetes. However, a healthy lifestyle is more beneficial and impactful for heart health. There is a clear

link between excess alcohol and increased blood pressure, and drinking outside meal times may increase hypertension. People with diabetes are advised to follow current UK recommendations of having no more than 14 units of alcohol a week, spread evenly over the course of the week.

Can losing weight and increasing physical activity help?

The evidence relating to weight loss and CVD events is unclear. Losing weight, however, has been found to reduce CVD risk factors⁷. A weight loss of at least 5% has been shown to lower blood pressure and improve lipid profiles. Explain the benefits and encourage your patients to lose weight if overweight – even modest amounts can help. Refer patients to a dietitian, where appropriate.

Increasing physical activity improves lipid profiles and lowers blood pressure, helping to reduce CVD risk. Encourage patients to engage in 150 minutes or more of moderate to vigorous activities per week, over at least three days a week. Explore ways of incorporating physical activity into daily routine and discourage sitting for long hours.

Recommendations:

- Adopt dietary patterns (Mediterranean and DASH style or equivalent) that are high in fibre and unsaturated fat, and low in salt and SFA.
- Reduce and replace SFA with unsaturated fats (MUFAs and PUFAs) and/or wholegrain products.
- Limit foods that increase the risk of CVD – for example, salt, red and processed meat, and include foods that are associated with a lower risk, like wholegrains, nuts and oily fish.
- Limit alcohol to no more than 14 units a week.
- If overweight, aim for a modest weight loss of at least 5%.
- Increase and aim for 150 minutes per week of moderate to intense physical activity, over at least three days.

REFERENCES

- 1 Diabetes UK (2018) evidence based nutritional guidelines for the prevention and management of diabetes. www.diabetes.org.uk/up-nutrition
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- 7 Look ahead research group (2016). *Lancet Diabetes & Endocrinology* 4(11), 913–921