

# Coronary Heart Disease

Dr Noel Young, MBBS, BSc.



**PLANT-BASED**  
Health Professionals UK

Promoting Sustainable Health and Nutrition

**Coronary heart disease (CHD)**, also known as ischaemic heart disease and coronary artery disease, **is the leading cause of death in the UK and world-wide.**

## Cause

CHD is caused by a combination of high levels of fat and cholesterol in the blood, and damage to the lining of the heart vessels.



Blood vessel with **atherosclerosis** cross section and longitudinal view

This disease commonly begins in childhood and slowly progresses throughout life, with symptoms developing only in the late stage.

CHD is responsible for around **64,000** deaths in the UK each year, an average of **180** people each day, or **one death around every eight minutes.**

That's the number of passengers in:

**365 X Boeing 737s** every year



or **2 X double decker buses** every day

**The fat and cholesterol in the blood build up in the damaged vessel walls, causing them to become narrow.** The buildup of fatty plaques in the blood vessels is called **atherosclerosis**. Once the narrowing progresses and not enough blood reaches the heart, it leads to pain called **angina**.

**If the vessel becomes blocked completely, it can lead to a myocardial infarction (heart attack).**



## Risk factors

Certain conditions accelerate the progression of CHD, such as high blood pressure, diabetes, high cholesterol and obesity.

**Other risk factors:** Smoking, lack of exercise, air pollution, stress, increasing age, South Indian ancestry, being male, having a family history of CHD.

## Ways to reduce coronary heart disease

Although we cannot change risk factors such as gender, family history and ethnicity, there are many **behaviours that can protect us from CHD.**

**Healthy lifestyle choices may reduce the risk of heart attack by more than 80%, with nutrition being the most important factor.**

**Lifestyle therapies are centred on reducing blood lipids and inflammation in the body.**



## Ways to reduce coronary heart disease cont.

**1 Swap animal protein for plant protein, including soya**

Animal products such as meat, eggs and dairy contain large amounts of saturated fat and cholesterol. They also increase the amount of inflammation in the body. Plant sources of protein, including bean, lentils, soya and nuts, instead lower inflammation and contain fibre which lowers cholesterol and promotes a healthy gut microbiome. Soya consumption has also been shown to reduce cholesterol levels and CHD risk.

**2 Adopt a whole food plant-based diet**

Centre your diet around minimally processed whole plant foods, including fruits, vegetables, whole grains and beans. Aim to get most of your fat in the diet from whole plant sources, including nuts and seeds. Although small amounts of extra virgin olive oil can support heart health, overconsumption can make it more difficult to maintain a healthy weight.

**3 Stop smoking****4 Exercise regularly**

Aim for at least 30 minutes of moderate-intensity exercise (e.g., brisk walking) five days a week.

**5 Reduce weight**

Opt for plant foods, which are low-calorie. Aim for a BMI of 18.5 - 24.9.

**6 Eliminate processed foods**

These contain large amounts of trans-fats, salt and saturated fat.

**7 Eat more fibre**

Aim for 30 g per day. Whole foods such as vegetables, whole grains, fruits and beans are abundant in fibre and will allow this amount to be easily exceeded.

**8 Blood pressure control**

Aim for less than 120/80 mmHg. Limit added salt to 3/4 of a teaspoon (1.5 grams) per day. Eat plenty of nitrate-rich vegetables, including rocket, spinach, beetroot. Flaxseeds, hibiscus tea and whole grains have all been shown to reduce blood pressure. Reduce stress.

**9 Sugar consumption**

Avoid added sugar, sugary food and beverages in your diet. Adults should have no more than 30g of free sugar per day (7 sugar cubes).

**10 Minimise or avoid alcohol**

There is some weak evidence that red wine is beneficial for heart health, with any benefit most likely to be due to antioxidants, which are already plentiful in a whole food plant-based diet. Additionally, alcohol increases the risk of liver disease and cancer, so it is best to minimise or avoid.



Ticket

**11 Minimise stress and foster loving relationships**

Chronic psychological stress leads to elevation of stress hormones and contributes to inflammation. This is associated with an increased risk of heart disease. Make stress relieving activities part of your daily routine, such as mindfulness-based practices and spending time in green spaces and in nature. Make time for healthy social and loving relationships.



## Benefits of a plant-based diet

### Case study: Karelia, Finland

The population in Karelia, Finland were able to reduce their deaths from coronary heart disease by **84% over the course of 40 years**. Blood pressure was closely monitored and treated, and smoking cessation and dietary changes were introduced. This included reducing the amount of saturated fat, animal products, processed food and salt in the diet, and increasing the amount of whole grains, fruits and vegetables.



The aim of a plant-based diet is to minimise animal products, processed food, added sugar and oils. It's free of cholesterol, low in calories and saturated fat, and high in fibre and micronutrients such as vitamins, minerals and antioxidants.

It encourages the predominant consumption of:

#### Whole grains

e.g. oats, rye, buckwheat, quinoa



#### Legumes

e.g. Lentils, chickpeas, beans



#### Fruits and Vegetables

### Benefits

- 1 It is the only diet shown to halt the progression of CHD and in some cases even result in regression of atherosclerotic plaques.

The Lifestyle Heart Trial found that **82% of CHD patients had regression of the condition**. Other research has shown that those following a plant-based diet had a **73% decrease in heart attacks** and a **70% decrease in the risk of dying**.

- 2 It promotes a healthy gut microbiome

The gut microbiome has been found to have a great influence on a number of diseases, including CHD. Consuming red meat causes the organisms in your intestine to produce a compound called **TMAO**, which has been strongly linked to CHD. Switching to a plant-based diet **eliminates** the production of **TMAO** and leads to the production of compounds such as **butyrate**, which **lower** blood pressure, inflammation and **reduce** the risk of CHD.

- 3 A single diet that benefits a number of conditions.

Besides treating CHD, plant-based diets are effective at **preventing** and **treating** major risk factors like high blood pressure, type 2 diabetes, high cholesterol and obesity.

- 4 It is full of protective fibre, vitamins and minerals and antioxidants.

Each serving of leafy green vegetables **decreases** the risk of CHD by **11%**. Antioxidants such as polyphenols from fresh fruits and vegetables is associated with a **decreased** risk of CHD. Each 10 gram increase in fibre intake **reduces** heart attacks by **27%**.

### Plant-Based Health Professionals UK

How do plant-based diets prevent cardio-vascular disease



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