



UNDER THE AUSPICES OF H.E.
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Coronary Heart Diseases (CHD)

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CENTER - EIEC, CAIRO - EGYPT .



Agenda

- **Pathophysiology of CHD**
- **Risk factors of CHD**
- **Symptoms of CHD**
- **Diagnosis of CHD**
- **Treatment of CHD**
- **Management of CHD**

PLEASE LOOK AFTER ME!

- Coronary Artery Disease is the no.1 Leading Cause of Morbidity and Mortality worldwide
- It is estimated that by 2030 almost 25 Million people will die from Cardiovascular Disease

WHO (2012)



Coronary artery

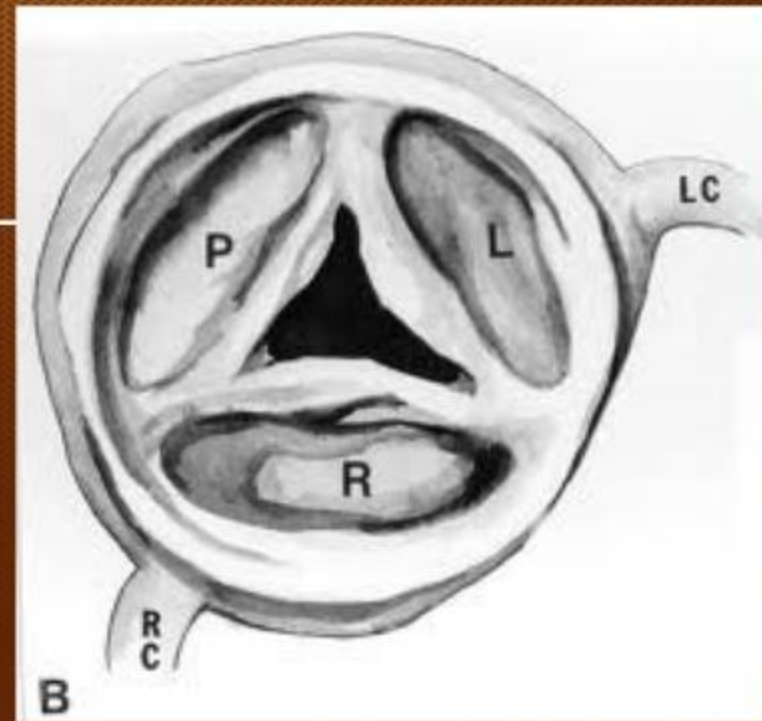
Coronary artery is a vasa vasorum that supplies the heart.

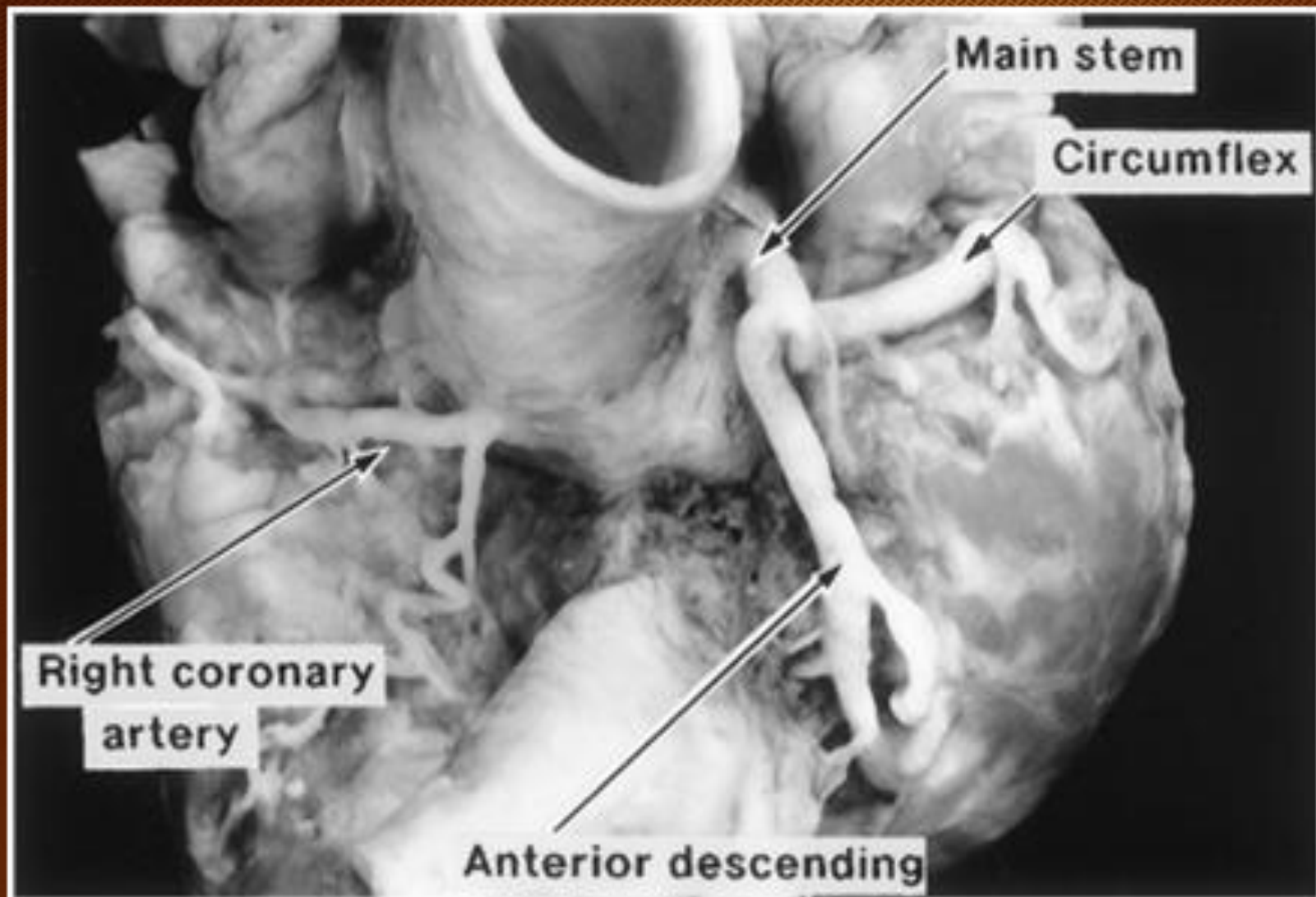
Coronary comes from the latin "Coronarius" Meaning "Crown".

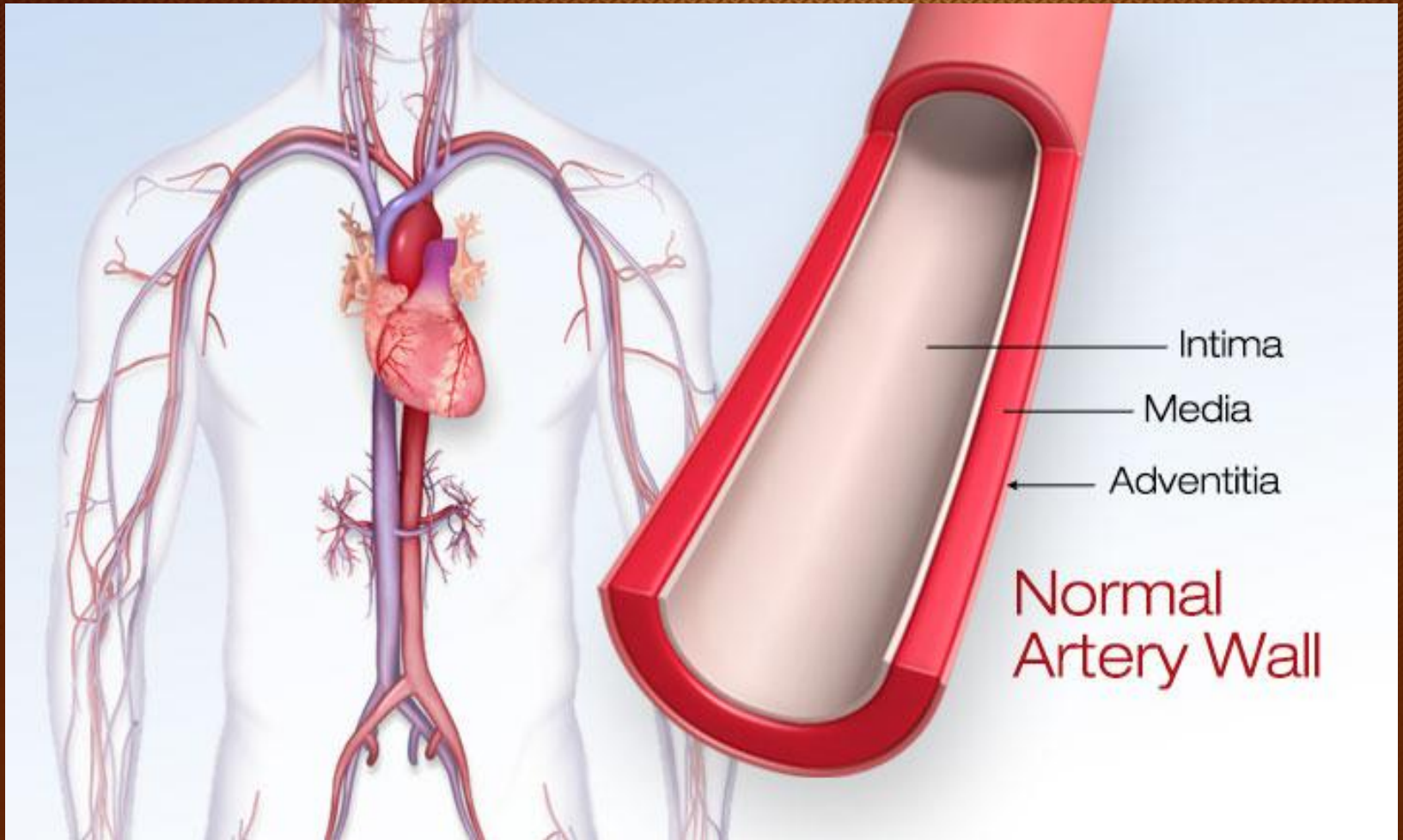


Coronary artery

- The coronary artery arises just superior to the aortic valve and supply the heart
- The aortic valve has three cusps –
 - #left coronary (LC),
 - #right coronary (RC)
 - #posterior non-coronary (NC) cusps.









What is coronary artery disease (CAD)?

CAD is a **narrowing** of the coronary arteries that **prevents** adequate blood supply to the heart muscle. Usually caused by **atherosclerosis**, it may **progress** to the point where the heart muscle is **damaged due to lack of blood supply**, and it may cause **infarction**, **arrhythmias**, and **heart failure**..

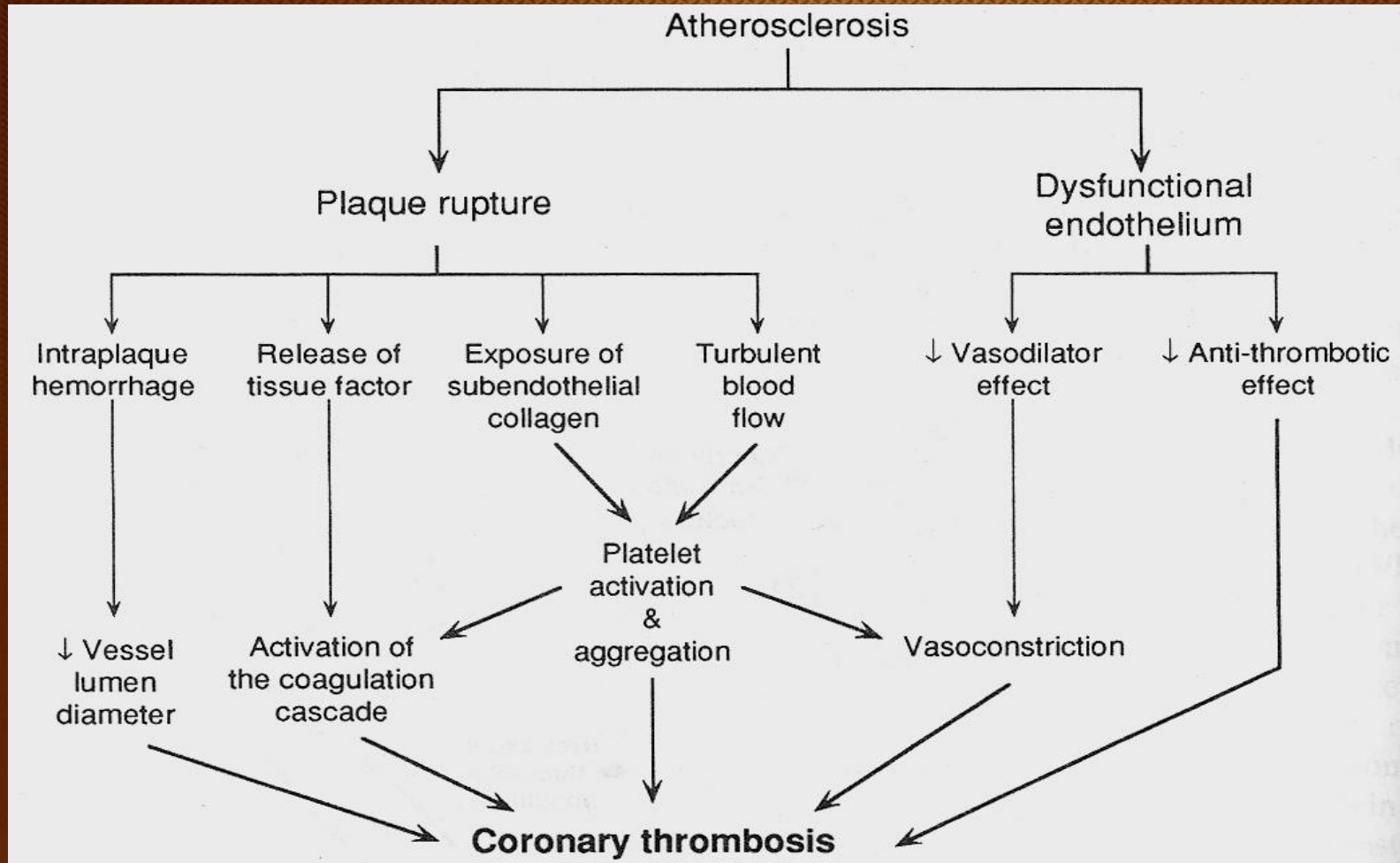
Pathophysiology of CHD

Coronary artery disease occurs when part of the smooth, elastic lining inside a coronary artery develops atherosclerosis.

Atherosclerosis may including calcium deposits, fatty deposits, and abnormal inflammatory cells to form a plaque.

Deposits of calcium phosphate plays significant role of induction of an early phase of coronary arteriosclerosis.

Pathophysiology of ACS



Normal lumen



Atherosclerosis



Intimal rupturing



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Dissection

Coronary artery dissection

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Spasm

Coronary artery spasm

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Risk factors of CHD

Factors that increase the risk of CHD include:

Hypertension

Dyslipidemia

Diabetes

Smoking

Physical inactivity

Obesity



Controllable

Risk Factors (cont'd)

Gender

Heredity

Age



Uncontrollable

Major Risk Factors:

- Smoking
- Diabetes
- Hypertension
- Dyslipidemia

Symptoms of CHD

Chest pain (angina)

((Heaviness, tightness, pain, burning, pressure or squeezing behind the breastbone or in the arms, neck, or jaws))

Dyspnea
Sweating

Nausea
Dizziness

Myocardial infarction (MI)

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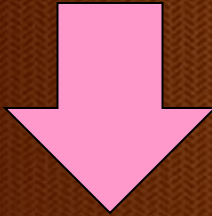
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Diagnosis of CHD

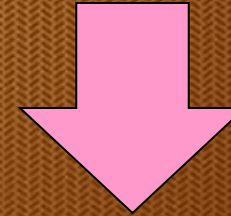
- » Electrocardiogram
- » Cardiac enzymes
- » Echocardiograms
- » Stress Tests
- » Nuclear Imaging
- » CT Angiography
- » Coronary Angiography

Treatment of CHD



Medical Treatment

Aspirin Statins
Clopidogrel ACE inhibitors
B. Blockers Nitroglycerin
Calcium channel blockers



Revascularization



PCI



CABG

A 3D anatomical illustration of a blood vessel. The vessel lumen is on the right, containing red blood cells. Some red blood cells are highlighted with green dots, indicating they are radioactive. The vessel wall is shown with a thick, yellowish, textured layer representing plaque or atherosclerosis. The vessel is surrounded by a reddish, fibrous-looking tissue.

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Management of CHD

- By Controlling Major risk factors
 - And life style modification

Diabetes Management

Controlling HbA1c (6.5 -7)

Following healthy diet

Medical treatment

preventive therapy

Hypertension Management

High blood pressure increases the risk of CHD.

Blood pressure tends to be raised in people who:

very overweight

Drink a lot of alcohol

Take little exercise

Smoker

Increase salt intake

Dyslipidemia Management

Cholesterol and the diet



The level of blood cholesterol is affected by the **amount** and **type** of **fat** in the **diet**.

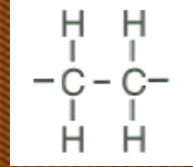
High intakes of **saturated fatty acids**, and of total fat, can **increase the amount of cholesterol** in the blood, and therefore **increase the risk of CHD**.

Most people are consuming too much saturated fat and need to switch to foods containing unsaturated fat or remove visible fat.

Fatty acids

Fatty acids can be divided into two groups:

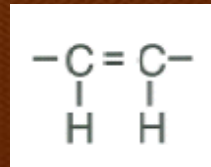
1) **Saturated** – these have the hydrogen atoms they can hold



and all are single chemical bonds, e.g. **Stearic acid.**
((Animal fats))

2) **Unsaturated** – these have some hydrogen atoms missing and contain double bonds.

• **Monounsaturated** – this is where there is one double bond, e.g. **oleic acid.** **((Olive oil))**



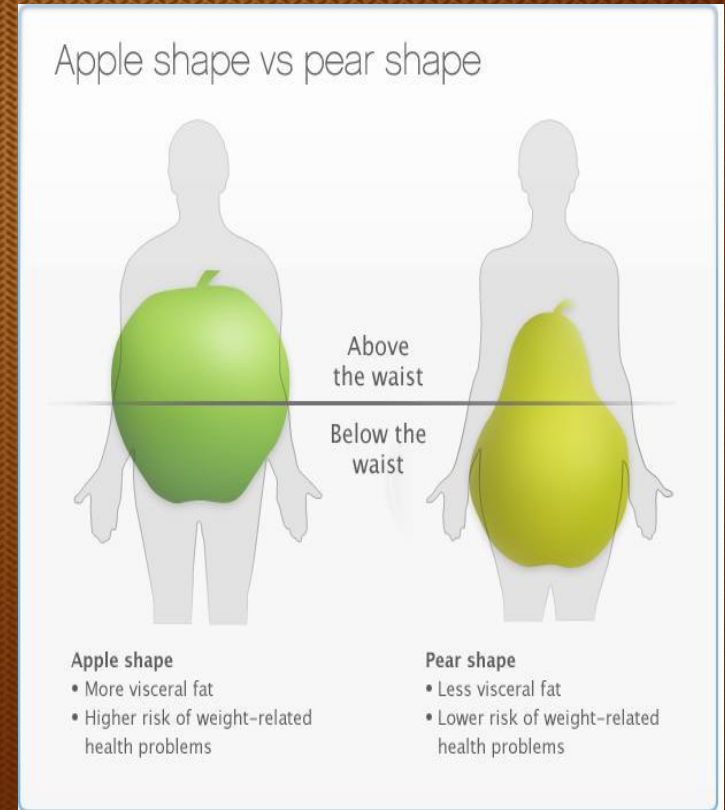
• **Polyunsaturated** – this is where there are more than one double bond in the compound, e.g. **linoleic acid.** **((Flax oil, Sunflower oil & Corn oil))**

Distribution of fat

The distribution of fat in the body also affects risk. People who have a high proportion of fat around the central part of the body ('apple shaped') have a greater risk of CHD than those who have most of their

fat around the hips and thighs ('pear shaped').

- Men tend to be more 'apple shaped' whereas
- Women tend to be more 'pear shaped'.



Reducing cholesterol in the diet

Before cholesterol can be deposited on blood vessel walls, it is changed by a chemical reaction called **oxidation**. Substances called **antioxidants** can help to prevent this reaction happening and so **reduce the amount of deposit formed in the blood vessels.**

Examples of antioxidants include vitamins A, C, and E. These are found in **fruit and vegetables.**

Reduce blood cholesterol

Soluble fibre

Where is it found?

Soluble fibre is a type of dietary fibre (NSP) which is found in foods such as **oats**, **vegetables** and **beans**.



How is it good for heart health?

It has been shown to **reduce blood cholesterol** levels and therefore may **reduce the risk of CHD**.

Reduce clotting

Omega 3 fatty acids

Where is it found?

Oily fish such as
salmon, sardines and mackerel.



How is it good for heart health?

Fatty acid found particularly in oily fish
reduces clotting. Increased consumption of
these foods, therefore, may reduce the risk
of CHD.

Take Home Message

- CHD is the slow and the sudden death.
- We must control risk factors.
- Healthy diet and life style contributes to reducing risk factors.
- Prevention best than cure.

THANK YOU



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