# risk factors & treatment in CHD

## RISK FACTORS

### Modifiable

#### High Blood pressure (Hypertension)
- Makes endothelium more susceptible to damage
- Average between 100-140/60-90
- Can cause an oedema, a tissue fluid build up

#### Smoking
- CO replaces $O_2$ in blood, less oxygen and higher heart rate
- Nicotine stimulates adrenaline production cause vascular constriction, higher heart rate and incresased blood pressure
- Can damage the endothelium
- Perhaps reduces HDL levels

#### Stress
- Releases adrenaline, causing vascular constriction, raised blood level and increased heart rate
- Can cause people to overeat, smoke or drink heavily

#### Diet

#### High Cholesterol
- Deposited as LDLs, causing atherosclerosis
- But good in the form of HDLs

#### High sat fats
- Deposited as LDLs
- Reduces LDL receptor activity, so more cholesterol

#### Antioxidants
- Prevent the oxidising action of free radicals. Found in fruits and green vegetables

#### Salt
- Causes water retention, leading to high hydrostatic force and hypertension

#### Alchohol
- Damages liver, glucuose and fats inadequately removed from blood
- Ethanal is formed, deposited in LDL plaques
- Causes brain, heart and liver damage

#### Obesity
- Greater risk to heart when more fat is carried
- Increased risk of type II diabetes

### Unmodifiable

#### Diabetes
- Irregular blood sugar levels can lead to increased fat deposition

#### Increasing Age
- Gradual deposition of LDLs forming atheromas
- Weaker hearts
- Decreasing metabolism
- Reduced activity

#### Genetic Predispostion
- Based upon a variety of genes, no single one responsible

#### Gender
- Testosterone makes men more vulnerable to heart disease
- Oestrogen may offer some protection

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## TREATMENTS

### Drugs

#### Anticoagulants and platelet blockers
+ Reduces risk of thrombosis
+ Aspirin is the most common
+ Clot-busters are used in emergency, streptokinase destroys clots

#### Gene therapy
+ Injection of genes coding for blood vessel growth

#### Lifestyle Choices
+ Exercise burns fats and increases cardiovascular strength
+ Don't smoke
+ Drink in moderation
+ Reduced cholesterol
+ Reduced salt
+ Increased soluble fibre to lower blood cholesterol
+ Oily fatty acids e.g Omega 3, unsaturated fats
+ Antioxidants found in fruit and vegetables
+ Sterols and stanols, produced in plants. These compete with cholesterol within the intestine, and are added to synthetic foods such as margarine.

#### Angioplasty
+ Small balloon is inserted via catheter, enlarging blood vessel

#### Cardiac Bypass
+ Blood vessels (often from leg) are grafted on to replacce blocked ones