# DIETARY DISEASES

- Diabetes
- Anaemia
- Coronary Heart Disease
- Bowel disease & diverticulitis
- Osteoporosis
- Dental caries
- Hypertension/ HBP
- Obesity

# DIABETES

# How Blood Sugar Works:

During the digestive process, much of the food that is eaten is converted into glucose, commonly known as ‘blood sugar’. Glucose circulates in the bloodstream and is used as food for the body's cells.

However, the cells cannot absorb glucose alone. A hormone called insulin, which is produced in the pancreas, must first bind to the cell surface.

When this occurs, cells of the body are activated and are able to absorb the glucose. This process returns the body's blood sugar to a normal level.

# What Is Diabetes?

**Type 1 diabetes** - the pancreas does not produce enough insulin, so glucose cannot be absorbed to refuel the cells.

**In Type 2 diabetes -** insulin is produced, but it does not work properly and the glucose is not absorbed consistently by the cells.

**Type 1** is not linked to age, lifestyle or weight. This is managed through insulin injections or pumps.

**Type 2** however, is generally linked to being overweight, inactive or a family history. This may be able to be managed through a change in diet and lifestyle.

# Why is there an increase in type 2 diabetes?

- increasing levels of obesity
- a lack of exercise
- increase in unhealthy diets
- an ageing population

# Effect on health of diabetes

High sugar levels in your blood over a long period of time can seriously damage your blood vessels.

If your blood vessels aren't working properly, blood can't travel to the parts of your body it needs to.

This can lead to:

- Increased risk of heart disease and strokes
- loss of feeling and pain (nerve damage)
- foot problems – like sores and infections
- vision loss and blindness
- problems with your kidneys

# ANAEMIA

**A shortage of iron is one cause of anaemia – a disorder where your body has too little haemoglobin in the blood.**

**Extra iron which is not needed is stored in the liver, spleen or bone marrow for use when needed.**

# What is anaemia?

Iron deficiency anaemia is caused by a shortage of iron in the diet, which leads to too little haemoglobin in the blood.

Iron is a vital part of haemoglobin, the pigment in red blood cells that binds with oxygen and carries it around the body. Therefore a lack of iron causes the body to work harder to supply you with enough oxygen.

Extra iron which is not needed is stored in the liver, spleen or bone marrow for use when needed – you only become anaemic when these stores run out, however you may suffer some symptoms before reaching this stage.

# Effect on health of iron deficient anaemia

- You may feel tired, weak, pale and listless
- Your resistance to infection may be low
- You could take iron tablets to replace or boost your iron levels (too much of these can be harmful)

# LACK OF IRON - WHO & WHY

- **WHO?**
- Women who are menstruating
- Pregnant women
- Babies
- Elderly – cannot afford iron rich food
- Vegetarians – main iron rich foods not eaten by them
- Athletes – higher loss of iron due to muscular activity

- **WHY?**
- Snacking and grazing throughout the day
- Less red meat for health reasons
- Dark green vegetables unpopular
- Insufficient supply of Vitamin C

# Pernicious anaemia

Vitamin B12 or folate deficiency anaemia occurs when a lack of vitamin B12 or folate causes the body to produce abnormally large red blood cells that cannot function properly.

A deficiency in either of these vitamins can cause a wide range of problems, including:

- extreme tiredness
- lack of energy
- pins and needles (paraesthesia)
- a sore and red tongue
- muscle weakness
- depression
- problems with memory, understanding and judgement

# CHD

# Coronary Heart Disease

The arteries usually narrow because of cholesterol within the inner lining of the coronary artery and this slows down blood circulation and the amount of oxygen that reaches the heart.

- **ANGINA**

The pain is usually linked to exertion and forces the patient to stop – subsequently it passes within a few minutes. The pain is a result of not enough oxygen being supplied and the muscle becomes starved.

- **CORONARY THROMBOSIS (heart attack)**

- Deposits of cholesterol are found in the lining of the arteries. Clots can form and block the coronary artery and the heart muscle is deprived of blood and oxygen, usually accompanied by extreme pain. Obstruction of an artery to the brain is one cause of a stroke

# Dietary factors which may contribute to CHD

- Over-eating
- High intake of saturated fat and sugar
- Too much trans fatty acids- increase blood levels of LDL
- Too much total fat intake
- Too much salt – increase blood pressure- can damage arteries
- Too little NSP – NSP can lower level of cholesterol in the blood by binding with the bile salts preventing absorption
- Too little fruit and veg – ACE vitamins slow down the rate at which LDL cholesterol is deposited on the artery wall

# Non dietary factors

- **Cigarette smoking** – causes the blood to thicken and clot and also narrows the arteries so reducing the blood flow to the heart. The carbon monoxide content of cigarette smoke cuts down the oxygen in the blood so the heart has to work harder.
- **Heredity** – genetic conditions may produce high blood cholesterol levels
- **High alcohol intake** – can cause high blood pressure
- **Emotional stress**
- **Lack of physical exercise**
- **Gender** – more men than women have heart attacks

# What is the effect on health of having CHD?

If you suffer from CHD you are more likely to be breathless, less able to do exercise, may find it hard to climb the stairs because your heart can't pump oxygen round the body.

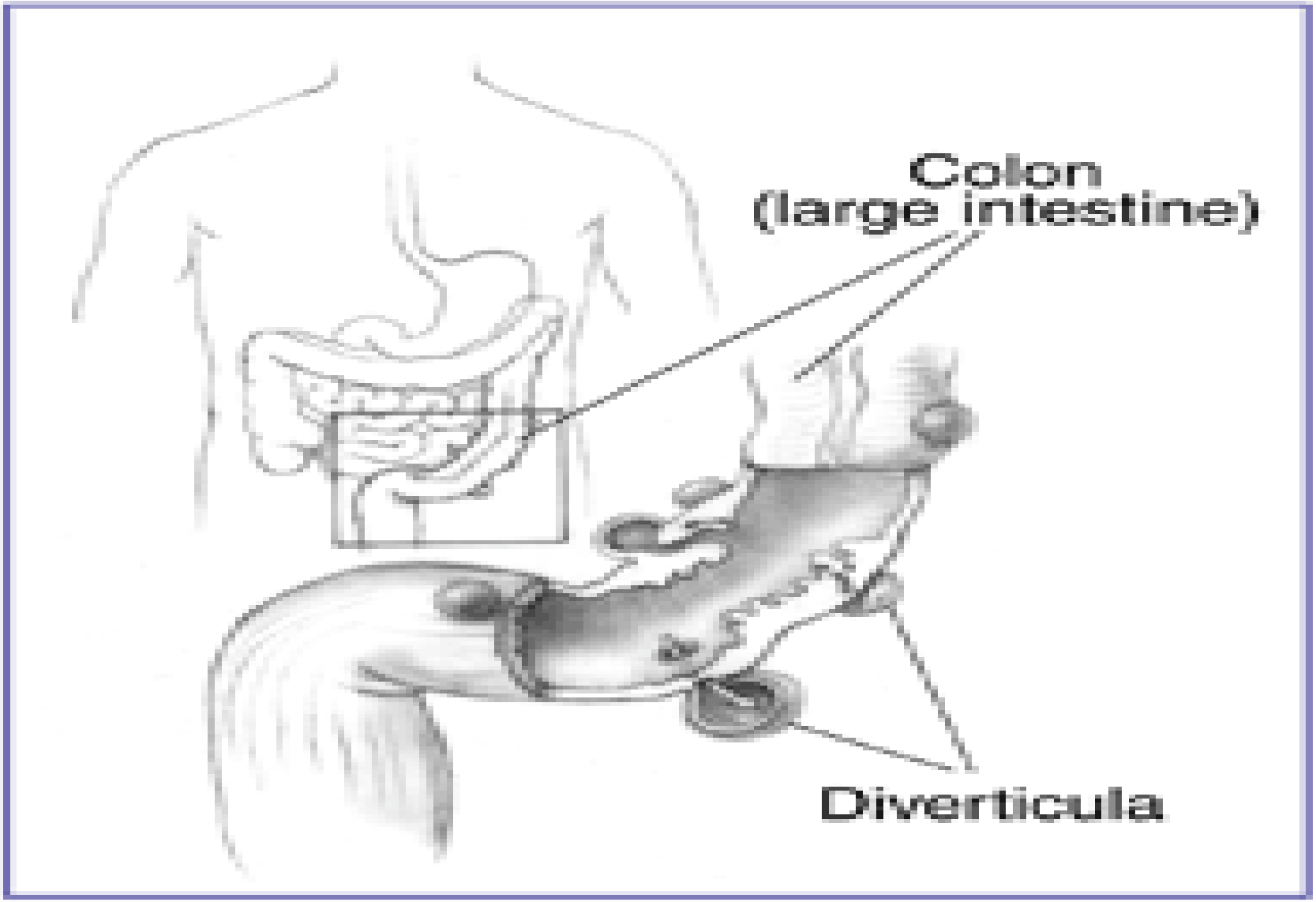
You are more likely to suffer a heart attack where an artery completely blocks.

# Diverticulitis

- If extra strain is put on the walls of the small intestine because of constipation, then diverticulitis will occur.
- Usually appears in people who have a low NSP content in their diet

If the faeces are hard due to a lack of NSP and water, then the muscle walls have to work harder to push the faeces along.

Pouches of the bowel lining are forced through the weak spots in the intestinal walls to form small pockets


Colon
(large intestine)
Diverticula

# Effect on health of bowel disease and diverticulitis

- Because this means that food has not able to pass through the body easily, waste may build up and cause increase the risk of bowel cancer.
- Pain and wind can be symptoms.
- Being unable to go to the toilet is common in elderly people. This can cause more problems with piles or haemorrhoids

# OSTEOPOROSIS

- Otherwise known as **brittle bone disease**
- It is not a problem of too little calcium but **how we use and keep that calcium in our bones**
- Bones stop growing around the late teens to early thirties and at this age the bones reach their ‘peak bone mass’
- Most people do not know they have osteoporosis until they **fall and break a bone**

Achieving a high peak bone mass in early adulthood is the main way of preventing osteoporosis  -teenagers with low calcium intake will not achieve peak bone mass

# DENTAL CARIES

- Bacteria in the mouth feed on sugary residues and produce an acid which attacks the enamel of the teeth

# Preventing dental caries

- Limit the number of times sugar is eaten
- Sugar eaten at mealtimes is not as harmful as sugars eaten between meals as snacks
- Adopt good oral hygiene
- Dental check  up regularly,

# Effect on health of tooth decay

- Low self esteem due to poor personal image
- Tooth pain
- Bad breath
- Loss of teeth and replacement with dentures

# HYPERTENSION/ HBP

## Contributing factors

- Excess salt in the diet
- Being overweight
- Lack of exercise
- Excess alcohol
- Stress
- Age – as we get older, pressure rises as artery walls become less elastic
- Smoking
- Family history

# Effect on health of HBP

- When blood is forced through the arteries at high pressure it is more likely to damage artery walls therefore increases the risk of heart disease
- Headaches due to incresed pressure

# OBESITY – dietary causes

- High sugar/ high fat diet/ high energy
- Reluctance to eat fruit and vegetables
- Increased consumption of pre-prepared convenience meals in the home
- Huge range of fast food eating outlets
- Diet low in NSP and complex carbohydrates

# Social reasons - obesity

- **Lack of exercise and physical activity** – increased use of cars, computer games, concern about child safety on roads
- **Advertising and media** – these promote snack foods high in sugar and fat
- **Family income** – where income is limited, cheaper, poorer nutritional food used
- **Poor eating habits** – developed in childhood
- **Psychological factors** – stress, anxiety, loneliness can cause people to over eat

# Health problems - obesity

- Extra strain put on joints
- Extra strain on the heart so more likely to develop high blood pressure which can lead to CHD
- Varicose veins - unsightly
- Diabetes
- Breathless during exertion as heart and lungs have to work harder to maintain oxygen supply
- Complications during surgery