Energy, Diet, Nutrition and Hydration

Energy Sources - Macronutrients

Carbohydrates

- 55 – 60% of your total diet
- Turn to fats if not used within 24 hours
- **Fuel source** for **both aerobic** and **anaerobic activity**
- A weight lifter would mainly use this energy source
- Broken down into glucose and stored as glycogen
- Split in **complex** – banana, brown rice and pasta, and **simple** – apples, confectionary.

Fats

- 25 - 30% of your total diet
- Broken down into fatty acids and stored in muscle cells
- Release energy slowly
- Found in foods such as butter, cheese, fish, nuts, avocado.
- **Fuel source** for **aerobic activity**
- A marathon runner would use this energy source

Protein

- 15-20% of your total diet
- Important for **growing muscle & repairing damaged tissue** – good for weightlifters
- Found in meat, eggs & nuts

-Nutritional requirements and ratio of nutrients for a balanced diet.
-Role and importance of macro and micronutrients.
-The factors affecting optimum weight: sex, height, bone structure and muscle girth.
-The variation in optimum weight.
-The correct energy balance to maintain a healthy weight.
-Hydration for physical activity and sport: why is it important, and how correct levels can be maintained during physical activity and sport.

Micronutrients

Vitamins (V) -
VA – dairy, oily fish, yellow fruit – necessary for **vision** and **prevents blindness.**
VB1 – vegetables, nuts, meats and wholegrain cereals – necessary for **carbohydrate loading**
VC – citrus, fruit, broccoli, sprouts – necessary to fight infection and helps **maintain the bones, teeth and gums.**
VD – oily fish, eggs, liver, milk and sunshine – necessary for **absorption of calcium – healthy bones.**
VE – vegetables oil, wholemeal bread and cereals – necessary for **growth and development**.

Minerals –
Calcium – milk, canned fish, broccoli, cheese – formation of **bones and teeth** – linked to **reducing osteoporosis.**
Iron – watercress, brown rice, meat – linked to **haemoglobin, the oxygen-carrying capacity** in the blood. A lack of iron can cause fatigue, tiredness, shortness of breath and heart palpitations.
Zinc – shellfish, cheese, wheatgerm – promote **healing and cell growth**.
Potassium – fruit, pulses, white meat. – important functions including; the **balancing of fluids** in our bodies and maintaining correct **heart muscle function**.
Sodium – maintaining **blood pressure** and balance of fluid content – necessary for the transmission of **nerve impulses**.
Selenium – protecting our **immune system function**.

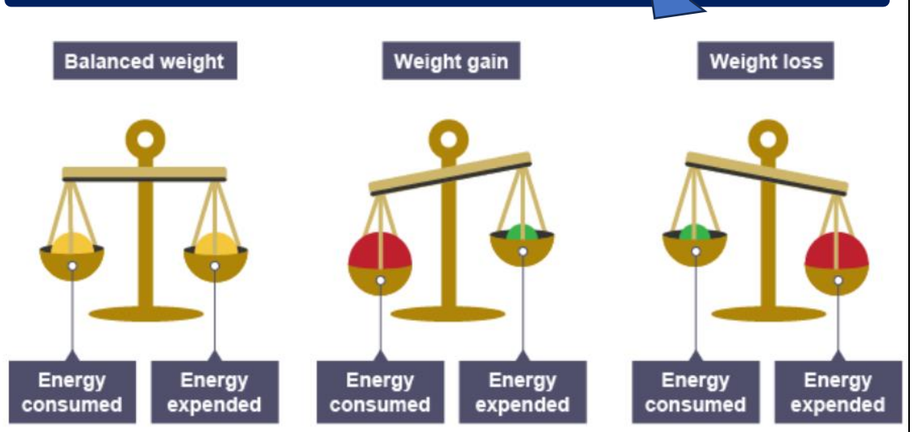
Fibre – aids digestion
Soluble fibre *– helps to reduce cholesterol, e.g. oats, barley, fruit, root vegetables.*

How many calories are required for an individual per day?

Male → 2500 Kcal

Females → 2000 Kcal

How to maintain, lose or gain weight?



Factors Affecting Optimum Weight

- Sex/Gender
- Height
- Bone structure
- Muscle girth

The effects of dehydration

- Blood thickening
- Increase in body temperature
- Irregular heart rate
- Muscle fatigue/cramps
- Slowing of reactions