

Nutrition



Proteins in meat and fish are called **first-class proteins** because they contain all the essential amino acids that humans need in their diet.

**Recommended daily allowance (RDA) of protein (g)
= 0.75 x body mass (kg)**

What is the RDA of protein for a 60 kg student?

$$\begin{aligned} \text{RDA} &= 0.75 \times 60 \text{ kg} \\ &= 45 \text{ grams} \end{aligned}$$

A protein deficiency illness called **Kwashiorkor** can cause a swollen belly and weak immune system, and is common in developing countries.



What is BMI?

Body Mass Index (BMI)

measures the relative amounts of fat and muscle in the body.

Gloria: 1.45 m and 66 kg

$$\text{BMI} = 31$$

Zak: 1.85 m and 66 kg

$$\text{BMI} = 19$$

What are their health risks?

Obese people have an increased risk of arthritis, diabetes and heart disease. People who are underweight tend to have poor immune systems and often get ill.

$$\text{BMI} = \frac{\text{body mass (kg)}}{(\text{height})^2 \text{ (m)}}$$

BMI	Conclusion
<20	underweight
20–25	normal
25–30	overweight
>30	obese



What is blood pressure?

Blood pressure is a measure of the pressure exerted by the blood against artery walls. Blood pressure varies with:

- heartbeat strength
- blood volume
- fitness
- health
- age.



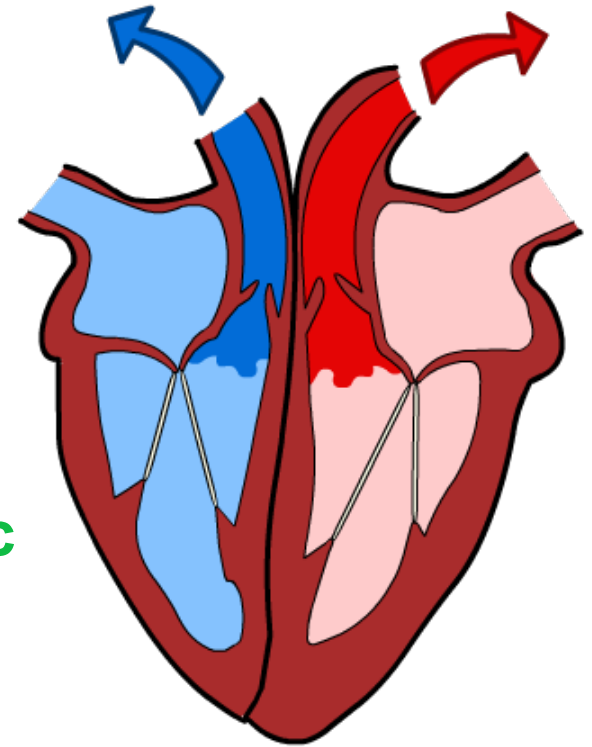
Blood pressure is measured as two numbers, e.g. 120/80. What do these numbers show?

The numbers show pressure readings in mm of mercury.





“Blood pressure one-twenty over eighty.”



The big number (“120”) is the **systolic** pressure. This is the blood pressure during a heartbeat.

The small number (“80”) is the **diastolic** pressure. This is the blood pressure in-between heartbeats.



How does blood pressure affect health?

High blood pressure can make blood vessels more likely to burst, and can cause strokes and kidney damage.

Low blood pressure can cause dizziness, fainting and poor circulation.

The older you get, the higher your blood pressure naturally becomes.

Age	Systolic	Diastolic
10	80–100	60
15	90–110	60
20	110–125	70
40	130–150	80

Kevin is 38 years old and his blood pressure is 180/90. What advice would you give him?



Kevin's doctor quizzed him about his lifestyle, tested his blood and referred him to a health professional.

Lifestyle assessment:	Yes	No
Has a BMI <30?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Eats 5 fruit/veg per day?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Has a stressful job?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Exercises 3x per week?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Adds salt to food?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Eats fast food?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Drinks alcohol everyday?	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Excess salt is known to increase blood pressure in about 30% of the population.


What else could Kevin do to improve his health?



Health and physical fitness are different.

- A **healthy** person is free from disease or abnormality.
- A **fit** person has good cardiorespiratory, aerobic and muscular endurance.

Initial assessment:		
strength	-	medium
stamina	-	poor
speed	-	poor
flexibility	-	very poor
agility	-	very poor



Kevin's doctor wants his **cardiovascular** fitness to improve so that he puts less strain on his body. His personal trainer wants other sorts of fitness to improve.

What types of exercise should Kevin do?

What is wrong with fast food?

Fast food such as burgers and pizza are usually high in unhealthy nutrients such as **saturated animal fats**, **sugar** and **salt**.



Fast food usually contains very little fiber, vitamins, minerals or unsaturated vegetable oils, which are important for a healthy diet.



How often do you eat fast food and takeaways?

