

Diet and exercise

Outstanding Science Year 6 - Animals, including humans - OS6B007

National Curriculum Statutory Requirements

6B2 - recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function; UKS2W6 - identifying scientific evidence that has been used to support or refute ideas or arguments

Learning Objective



I can explain how diet and exercise affect body weight.

Me:

Teacher:

Food energy

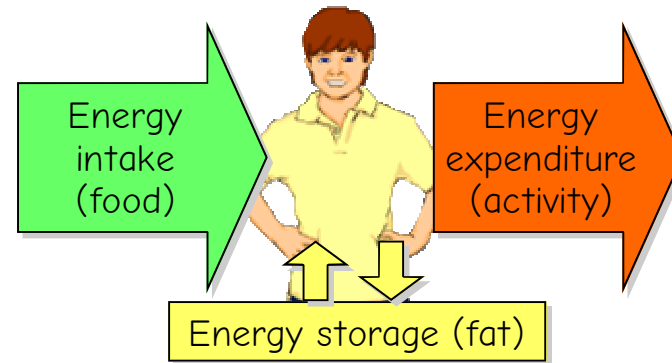
Like all animals, humans eat **food** in order to get energy. Food energy comes in the form of **carbohydrates**, **sugars** and **fats**. One way of measuring energy is in **kilocalories** (Kcal), which are commonly just called '**calories**'.

Using food energy

Our bodies use up food energy all of the time, even when we are sitting still or sleeping. Some activities, such as physical work and exercise, cause us to use up food energy much more quickly. If we take in more energy than our bodies need, our bodies store it as fat. This is a good thing, because it stops us from **starving** when we don't have immediate access to food. Over time, this can cause us to **gain weight**. If we take in less energy than our bodies need, our bodies start to use up the energy in our stored fat reserves. Over time, this can cause us to **lose weight**.

Obesity

If somebody is significantly overweight, they are **obese**. Obesity can cause a range of health problems, including **heart disease**, **diabetes**, **cancer** and **stroke**. It can also make a person **depressed**.



Humans get all of their energy from food. If we eat more food than we need, we can store the excess energy as **fat**. The fat can be used as an emergency food reserve in times of starvation.

Activity

Look at the profiles on the following pages. Each person describes the food they eat and the exercise they do in a typical day. Add up the number of calories contained in their food and compare it to their energy intake target. Are they eating the right number of calories? Do they have a balanced diet? Are they getting enough exercise? Explain to each person what they are doing right, and what they can do to improve their lifestyle. This might include eating more protein or fruit and vegetables, doing more exercise, altering their portion size (eating a larger or smaller version of the same meal) or changing their meals completely.

Discussion

Do all people have the same daily calorie requirements?

Why?

What are the main factors that affect a person's body weight?

If somebody eats too much food on just one day, does this matter? Why?

My name's Ed. I'm a 45 year old male. I'm trying to lose weight, so I'm trying to eat less. I never do exercise, because it's boring. My target for the day is **2200 calories**.



Food item	Calories			
Pancakes in maple syrup		5	3	1
Fast food burger meal	1	4	6	5
2 packets of crisps		3	1	6
Steak pie and chips	1	0	1	7
Ice cream sundae		4	2	9
Total				

Am I eating the right amount of food? _____

What advice would you give me?

I'm Angela. I'm a 60 year old woman. I've recently lost weight due to illness so I'm trying to gain weight. I walk my dog twice a day for the exercise. My target for the day is **2300 calories**.



Food item	Calories			
Porridge and skimmed milk		2	3	6
Apple			4	7
Soup and bread roll		2	5	1
Fish and potatoes		9	4	6
Apple crumble and ice cream		3	8	4
Total				

Am I eating the right amount of food? _____

What advice would you give me?

I'm Pete. I'm a 25-year-old commando in the Royal Marines. We train constantly and do lots of exercise, so we have high energy requirements. My target for the day is **3200 calories**.



Food item	Calories		
Spaghetti hoops on toast	5	2	1
Pasta and meatballs with salad	7	4	8
Chocolate bar	2	1	1
Chicken curry and rice with salad	8	2	6
Rice pudding and an orange	2	4	5
Total			

Am I eating the right amount of food? _____

What advice would you give me?

My name's Edwina. I'm happy with my weight so I'm trying to maintain it. I play football and go running three times a week. My target for the day is **2000 calories**.



Food item	Calories		
Corn flakes in skimmed milk	3	1	8
Banana		9	6
Fish, chips and peas	5	2	8
Chilli con carne	8	5	8
Cheese and biscuits	2	3	1
Total			

Am I eating the right amount of food? _____

What advice would you give me?

I'm Dylan. I'm a 60 year old man. I'm trying to lose weight but I think I'm too old to do any exercise. My target for the day is **2100 calories**.



Food item	Calories			
Bacon sandwiches		6	3	2
Steak pie, chips and gravy	1	0	2	7
Chocolate bar		2	1	1
Roast chicken dinner	1	4	6	1
Large bowl of trifle		7	3	3
Total				

Am I eating the right amount of food? _____

What advice would you give me?

I'm Sam and I'm a 13-year-old girl. I exercise regularly and I'm on the school swimming team. I'm trying to maintain my body weight. My target for the day is **2000 calories**.



Food item	Calories			
Bran flakes with skimmed milk		2	5	7
Packet of crisps		1	5	8
Spaghetti and meatballs		6	3	3
Chocolate bar		2	1	1
Cheese on toast		3	9	2
Total				

Am I eating the right amount of food? _____

What advice would you give me?
