

## Organisms

## 4. Digestion

## CONCEPT 2

## LESSON GUIDE

## EFFECTS OF AN UNBALANCED DIET

## PRECISE LEARNING POINTS

## KNOW

I know the effects on the body of eating too much or eating too little.

## APPLY

I can apply my knowledge to describe how deficiency diseases occur.

## EXTEND

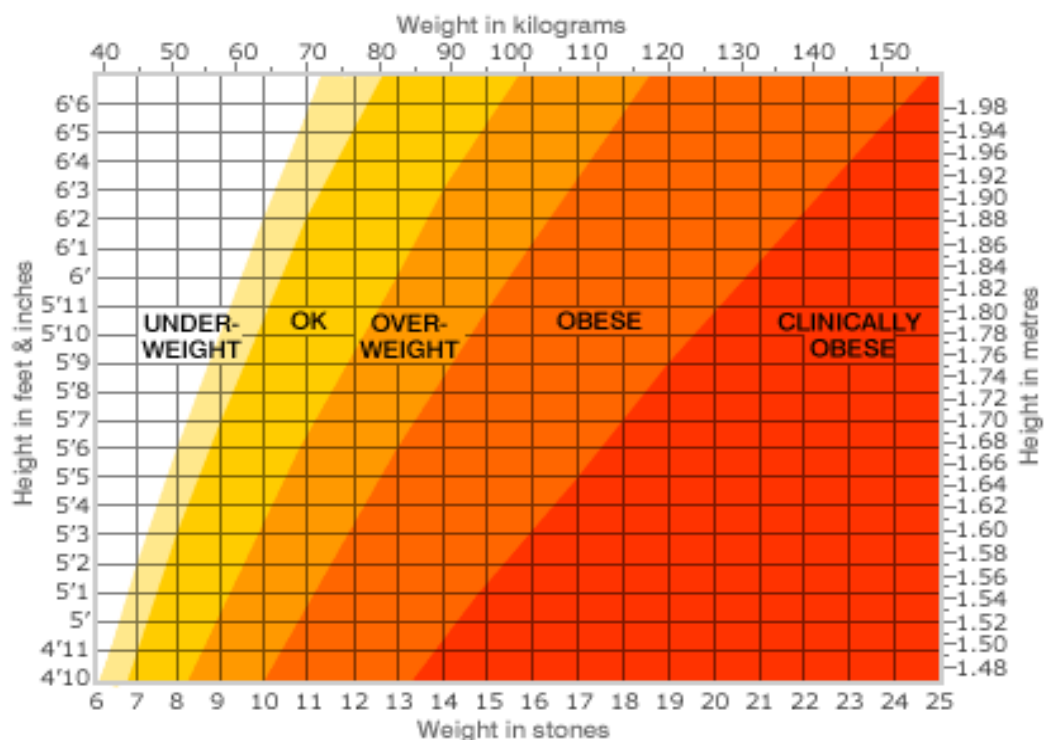
I can extend my knowledge to explain how to prevent and treat deficiency disease.

## NOTES

## OBESITY AND STARVATION

Eating too much or eating too little over a prolonged period can cause serious damage to your health in the form of obesity and starvation- and both are capable of causing death.

Obesity can give you a very high BMI, which is short for body mass index. This is a measure of body fat based on the height and weight of an individual. Obesity can lead to problems such as breathing difficulties, high blood pressure, heart disease and joint pain.



If you do not take in enough energy and nutrients over a prolonged period, this can lead to starvation. This is the most serious form of malnutrition and causes problems such as fatigue, severe weight and muscle loss, infertility, stunted growth, dry skin and dry hair.

## DEFICIENCY DISEASES

If you lack certain nutrients (vitamins/minerals) or food groups in your diet, certain diseases can develop. These are called deficiency diseases. For example, if you lack calcium in your diet, you can develop the disease osteoporosis, which you learnt about in Year 7.

Another example is anaemia, a condition where the sufferer feels very tired due to low oxygen being transported around the body. This is caused by a lack of iron, as this is used to make the red blood cells that carry oxygen.

In the past, lots of sailors died of a disease called scurvy, which is caused by a lack of vitamin C. This is due to their diet not including enough fresh fruit, such as limes and oranges that contain lots of vitamin C.

Sunlight can help prevent a disease called rickets, which causes muscles and bones to become soft. It is caused by a lack of Vitamin D, which absorbs calcium into your bones for growth and strength. If you get more sunlight, your body can use more Vitamin D.

These deficiency diseases are easily treated by re-introducing the missing nutrient back into the diet. See the table below lots of examples of deficiency diseases and what nutrient can be used to treat them:

Deficiency disease	Nutrient Lacking	Source of Nutrient	Symptoms
Anaemia	Iron	Red Meat	Very tired and short of breath
Scurvy	Vitamin C	Oranges	Bleeding and swelling of the gums
Beriberi	Vitamin B1	Beef	Weight loss and difficulty walking
Rickets	Vitamin D	Fish	Bowed legs due to softened bones
Night blindness	Vitamin A	Carrots	Difficult to see in low light
Pellagra	Vitamin B3	Tuna	Sensitivity to sunlight
Goitre	Iodine	Organic Fruit and Vegetables	Swelling of the neck
Kwashiorkor	Protein	Meat	'Pot belly' and dry hair
Osteoporosis	Calcium	Milk	Weak and fragile bones