

Lesson 3: What are Health Risks

Curriculum Links



Safety issues	
Potential sensitivity relating to causes of death and non-communicable diseases	
KS3 Science Programme of Study (DfE National Curriculum PoS)	KS4 GCSE Science Programme of Study (DfE National Curriculum PoS)
<p>Scientific attitudes</p> <ul style="list-style-type: none"> understand that scientific methods and theories develop as earlier explanations are modified to take account of new evidence and ideas, together with the importance of publishing results and peer review evaluate risks <p>Experimental skills and investigations</p> <ul style="list-style-type: none"> ask questions and develop a line of enquiry based on observations of the real world, alongside prior knowledge and experience <p>Analysis and evaluation</p> <ul style="list-style-type: none"> present observations and data using appropriate methods, including tables and graphs interpret observations and data, including identifying patterns and using observations, measurements and data to draw conclusions present reasoned explanations, including explaining data in relation to predictions and hypotheses evaluate data, showing awareness of potential sources of random and systematic error identify further questions arising from their results 	<p>Development of Scientific thinking</p> <ul style="list-style-type: none"> evaluating risks both in practical science and the wider social context, including perception of risk <p>Analysis and evaluation</p> <ul style="list-style-type: none"> translating data from one form to another interpreting observations and other data, including identifying patterns and trends, making references and drawing conclusions <p>Vocabulary, units, symbols and nomenclature</p> <ul style="list-style-type: none"> developing their use of scientific vocabulary and nomenclature recognising the importance of scientific quantities
	KS4 GCSE Biology subject content (DfE National Curriculum PoS)
	<p>Health, disease and the development of medicines</p> <ul style="list-style-type: none"> the relationship between health and disease non-communicable diseases the impact of lifestyle factors on the incidence of non-communicable diseases
KS3 Biology subject content (DfE National curriculum PoS)	KS4 GCSE Food preparation and nutrition (DfE National Curriculum PoS)
<p>Nutrition and digestion</p> <ul style="list-style-type: none"> content of a healthy human diet: carbohydrates, lipids (fats and oils), proteins, vitamins, dietary fibre and water, and why each is needed calculations of energy requirements in a healthy daily diet the consequences of imbalances in the diet, including obesity, starvation and deficiency diseases 	<p>Nutrition</p> <ul style="list-style-type: none"> major diet related health risks including obesity, cardiovascular, bone health, dental health, iron deficiency anaemia, diabetes

PSHE (DfE National Curriculum PoS)

Mental wellbeing

- that mental wellbeing is a normal part of daily life, in the same way as physical health
- where and how to seek support (including recognising the triggers for seeking support), including whom in school they should speak to if they are worried about their own or someone's mental wellbeing or ability to control their emotions (including issues arising online)
- it is common for people to experience mental ill-health. For many people who do, the problems can be resolved if the right support is made available, especially if accessed early enough
- that happiness is linked to being connected to others
- common types of mental ill-health (e.g. anxiety and depression)
- the benefits and importance of physical exercise, time outdoors, community participation and voluntary and service-based activities on mental wellbeing and happiness

Physical health and fitness

- the characteristics and mental and physical benefits of an active lifestyle
- the risks associated with an inactive lifestyle (including obesity)
- the positive associations between physical activity and promotion of mental wellbeing, including as an approach to combat stress
- the characteristics and evidence of what constitutes a healthy lifestyle, maintaining a healthy weight, including the links between an inactive lifestyle and ill-health, including cancer and cardio-vascular ill-health

Healthy eating

- how to maintain healthy eating and the links between a poor diet and health risks, including tooth decay and cancer

Drugs alcohol and tobacco

- the facts about the harms from smoking tobacco (particularly the link to lung cancer), the benefits of quitting and how to access support to do so

Health and prevention

- the importance of sufficient good quality sleep for good health and how a lack of sleep can affect weight, mood and ability to learn

Behaviour Change Theory links

- BCT 1.1 Goal setting (behaviour)
- BCT 1.2 Problem solving
- BCT 1.3 Goal setting (outcome)
- BCT 1.8 Behavioural contract
- BCT 1.9 Commitment
- BCT 5.1 Information about health consequences
- BCT 5.2 Salience of consequences
- BCT 6.2 Social comparison
- BCT 9.1 Credible source
- BCT 9.2 Pros and cons
- BCT 9.3 Comparative imagining of future outcomes



Objectives

- At the end of this lesson students should be able to:
- Determine possible risks to our health
 - Suggest how different factors might influence an individual's health
 - Work collaboratively to carry out research on a non-communicable disease

Hook

'What do you think people are most likely to die from in the UK?'

Show NHS Atlas of Risk image, without labels to illustrate.


Activities:

!!This lesson covers some sensitive issues and you may want to discuss these with students at the start, see 'Discussing sensitive issues' in the Teaching Tips on p.12. Introduce the lesson and share the objectives with the students. Individuals record how confident they are for each of the objectives at the start of the lesson.

Lesson 3 Causes of Death

When someone dies, a doctor or a coroner will decide the cause of death and record it on the person's death certificate.


The cause of death is based on rules set out by the International Classification of Diseases (ICD) and is obtained from the conditions reported by the doctor or coroner.



The cause is based on the **World Health Organisation (WHO)** definition as:

- the disease or injury that initiated the train of events directly leading to death, or
- the circumstances of the accident or violence that precedes the fatal injury.

The Department of Health has a list of hundreds of conditions which can be recorded on the death certificate as a cause of death.



Activity 1: Can you rank the causes of death?

Identify the **top 3 most common** and the **least common** in the UK

	most common	2nd most common	3rd most common	Least common
My suggestion				
Actual order				

Discuss what impact has COVID-19 had on the causes of death?

Lesson 3 Causes of Death

Activity 2: Can you sort the cards into three groups?

1. Identify group A and B and write your own classification for group C in the boxes below:

A.

_____ Diseases are diseases which are unable to be passed from one person to another, so you can't contract them from somebody.

List 3 that are linked to lifestyle behaviours:

-
-
-

B.

_____ Diseases are diseases which can be passed from one person to another, so you can contract them from somebody.

C. Other

2. How do non-communicable diseases affect the risk for COVID-19 patients?

3. Which category do each of the top 3 most common causes of death fit into?

Activity 3: How has this changed over time?

How do you think the main causes of death have changed over time?
What do you think has led to these changes?

Identify 3 advances that have improved public health over time.

Public health advance	How has it affected public health?

Starter

Activity 1: Ranking causes of death



Time: 5 minutes

Students working in small groups are given the "causes of death" cards which represent the main causes in the UK. Ask the students to rank the cards in order, **'What do you think are the three most common causes of death in the UK? What is the least common cause of death?'** Compare their choice of cards to the correct "causes of death" graphic, **'How did you compare to the actual causes of death in the UK? Are you surprised? How might COVID-19 affect each of the causes of death?'** Discuss how the pandemic indirectly increased deaths e.g. stopping cancer treatments, appointments. (Note 'age' is missing from the risks as this is not medically classified as a cause of death). Students record the correct ones in their table. NB this is over the entire lifecourse, if we change the age parameters the cause of death changes. E.g. in children the main cause of death is accidents.

Activity 2: Sorting “causes of death”

Time: 10 minutes

‘How could you sort the cards?’ Students decide how to classify their cards into categories. Students share their ideas, justifying how they have classified their cards. **‘What are your reasons for putting them into those groups?’**

Highlight the differences between communicable diseases (CDs - those we can ‘contract’ from other people) and non-communicable diseases (NCDs - those which we cannot ‘contract’ from other people), record the classifications in their booklets, then re-sort the cards into the three groups.

‘How do non communicable diseases affect the risk of complications for COVID-19 patients?’ Key point is NCDs are still the most common cause of death in this country, increasing the risk for COVID-19 patients, and are directly linked to lifestyle choices.

‘Which category do the 3 most common causes of death fit into?’ Also note that many of the causes of death could be put into more than one category eg. Respiratory Disorders: Bronchitis and COPD could be placed as a NCD, but flu could be placed as a CD and Asthma as other. As long as the students can justify why they have classified them in the groups then it is acceptable.

Activity 3: How has this changed over time?

Time: 5 minutes

Ask the students **‘How do you think the main causes of death have changed over time? Would they be in the same order if we went back in history? Explain why and what has changed. How might COVID-19 affect the causes of death?’** Students identify 3 Public Health advances and suggest how these advances have contributed to improvements to public health, e.g. Social factors include the NHS, better housing, sanitation, clean water provision, nutrition and food safety, education. Medical advances include discoveries of antibiotics and vaccinations, improvements in childbirth and surgery.

Lesson 3

Non-Communicable Diseases (NCDs)

Type 2 Diabetes

There are 4.2 million people diagnosed with diabetes in the UK, but a further 1 million people are believed to have the condition but have not been diagnosed.

Heart disease

Coronary heart disease is the UK's biggest killer, causing 73,000 deaths each year, an average of 190 people each day, or one every seven minutes.

Mental Health and Wellbeing

1 in 10 young people will experience a mental health problem. The number of young people attending A&E with a recorded mental condition has almost tripled since 2010.

Chronic Obstructive Pulmonary Disease (COPD)

The total annual cost to the NHS is estimated to be over £800 million for direct health care costs and 24 million working days per year are lost due to COPD.

Cancer

4 in 10 cancers could be prevented. Overweight and obesity is the second biggest preventable cause of cancer after smoking.

Stroke

Every year it is estimated that more than 152,000 people in the UK have a stroke. That's one person every three and a half minutes.

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Lesson 3

Researching Non-Communicable Diseases

Activity 4: My group's NCD is:

<p>What is it? Explain what area of the body is involved, and what is happening to that area.</p>	<p>Who gets it? Who is at more risk and why? e.g. Males/Females, Age? Should people affected take extra precautions to shield from COVID-19?</p>
<p>What are the symptoms? What do people affected suffer from?</p>	<p>What are the risk factors? For example: Is the condition more likely if you smoke, or are overweight? How would COVID-19 affect this condition?</p>
<p>What is the treatment? Medicines, operations or lifestyle changes.</p>	<p>What can we all do to reduce our risk? What lifestyle choices might you want to make?</p>

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Useful website links can be found at the back of this booklet.

Main

Activity 4: Researching Non-Communicable Diseases



Time: 30 minutes

Split the class up into six groups to research the following NCDs, using the websites identified in the student book on p.20 (web addresses can be found in the back of the student booklet) or text books:

- A. Type 2 Diabetes
- B. Heart disease
- C. Mental Health and Wellbeing (recently classified by the World Health Organisation as an NCD)
- D. COPD (Chronic Obstructive Pulmonary Disease)
- E. Cancer (NB there are many different cancers. Ideally students should try and give a general overview on lifestyle related cancers, e.g. lung, mouth, oesophageal, bladder, breast, colon, skin etc, but if needed focus on the most common type, which is lung cancer, accounting for 25.5% of all cancers)
- F. Stroke

Students record their findings in their student booklet.

Plenary



Time: 10 minutes

Feedback about different NCDs between groups, sharing their findings:

What is it? Explain what area of the body is involved, and what is happening to that area.

Who gets it? Who is at more risk and why? e.g. Males/Females, Age? Should people affected take extra precautions to shield from COVID-19?

What are the symptoms? What do people affected suffer from?

What are the risk factors? For example: Is the disease more likely if you smoke, or are overweight? How would COVID-19 affect this disease?

What is the treatment? Medicines, operations or lifestyle changes.

What can we all do to reduce our risk? What lifestyle choices might you want to make?

Students refer back to the lesson objectives and complete the assessment for learning activity in the orange boxes, feedback and share an interesting fact they have found out from the lesson.

Resources

- Lesson 3 PowerPoint slides
- Student booklet pages 17-21
- Causes of death cards x6 sets
- **Student access to internet** to research NCDs
- NCD resources – text books, printed materials from website, leaflets (if no internet access available)

Keywords

- non-communicable diseases
- type 2 diabetes
- heart disease
- COPD
- cancer
- stroke
- cardiovascular disease