**Disease – cause and effect**

**Part 1**



Eating fatty foods such as burgers is linked to heart disease.

Look at the statements in the table.

Tick **one** box for each statement.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Statement** | | I am **sure** this is right | I **think** this is right | I **think** this is wrong | I am **sure** this is wrong |
| **1** | You will definitely get heart disease if you eat fatty foods. |  |  |  |  |
| **2** | Eating fatty foods makes it more likely that you will get heart disease. |  |  |  |  |
| **3** | Eating fatty foods increases your risk of getting heart disease. |  |  |  |  |

**Disease – cause and effect**

**Part 2**



Eating fatty foods such as burgers is linked to heart disease.

Look at the statements in the table.

Tick **one** box for each statement.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Statement** | | I am **sure** this is right | I **think** this is right | I **think** this is wrong | I am **sure** this is wrong |
| **1** | If you avoid fatty foods you will definitely **not** get heart disease. |  |  |  |  |
| **2** | Avoiding fatty foods makes it less likely that you will get heart disease. |  |  |  |  |
| **3** | Avoiding fatty foods decreases your risk of getting heart disease. |  |  |  |  |

**Disease – cause and effect**

**Part 3**



Some diseases such as flu are spread by coughs and sneezes.

Look at the statements in the table.

Tick **one** box for each statement.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Statement** | | I am **sure** this is right | I **think** this is right | I **think** this is wrong | I am **sure** this is wrong |
| **1** | You will definitely get flu if somebody coughs on you. |  |  |  |  |
| **2** | If somebody coughs on you it is more likely that you will get flu. |  |  |  |  |
| **3** | If somebody coughs on you it increases your risk of getting flu. |  |  |  |  |

**Disease – cause and effect**

**Part 4**



Washing your hands regularly is linked to good health.

Look at the statements in the table.

Tick **one** box for each statement.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Statement** | | I am **sure** this is right | I **think** this is right | I **think** this is wrong | I am **sure** this is wrong |
| **1** | If you wash your hands regularly you will definitely **not** get diseases. |  |  |  |  |
| **2** | If you wash your hands regularly it makes it less likely that you will get diseases. |  |  |  |  |
| **3** | If you wash your hands regularly it decreases your risk of getting diseases. |  |  |  |  |

*Biology > Big idea BHD: Health and disease > Topic BHD1: What are health and disease? > Key concept BHD1.2: Disease*

|  |
| --- |
| **Diagnostic question** |
| **Disease – cause and effect** |

**Overview**

|  |  |
| --- | --- |
| Learning focus: | The good health of organisms can be compromised by infectious and non-infectious diseases, which can be caused by germs, lifestyle, environment, or information in the genome. |
| Observable learning outcome: | Apply the idea that some factors increase or decrease the risk of disease. |
| Question type: | Confidence grid |
| Key words: | Health, disease, risk |

**What does the research say?**

Over recent decades, a rapidly growing body of research has considered the promotion, measurement and effects of *health literacy* within populations. Put simply, health literacy at the individual level enables a person to access, understand, appraise and use information to make informed decisions about their health. Extensive empirical research shows that increased health literacy can lead to changes in behaviour and decision-making that improve health outcomes (e.g. Pelikan, Ganahl and Roethlin, 2018), and there have been high-level calls for global action to increase health literacy in children and adults (World Health Organization, 2016; IUHPE Global Working Group on Health Literacy, 2018).

The school curriculum has an important role to play in developing health literacy (IUHPE, 2010; Paakkari and Paakkari, 2012; Kilgour et al., 2015; Bruselius-Jensen, Bonde and Christensen, 2017). Research has shown that the development of health literacy in children is important in reducing the incidence of disease (e.g. Hanson and Gluckman, 2011), and that efforts to improve the health literacy of school children can have impacts on their behaviour (e.g. Park et al., 2017). Health literacy includes both physical health literacy and mental health literacy (Kutcher et al., 2016).

**Ways to use this question**

Students should complete the confidence grids individually. This could be a pencil and paper exercise, or you could use the PowerPoint presentation with an electronic voting system or mini white boards.

*Differentiation*

You may choose to read the statements to the class, so that everyone can focus on the science. In some situations it may be more appropriate for a teaching assistant to read for one or two students.

**Expected answers**

*Part 1*

1. You will definitely get heart disease if you eat fatty foods – **wrong**
2. Eating fatty foods makes it more likely that you will get heart disease – **right**
3. Eating fatty foods increases your risk of getting heart disease – **right**

*Part 2*

1. If you avoid fatty foods you will definitely not get heart disease – **wrong**
2. Avoiding fatty foods makes it less likely that you will get heart disease – **right**
3. Avoiding fatty foods decreases your risk of getting heart disease – **right**

*Part 3*

1. You will definitely get flu if somebody coughs on you – **wrong**
2. If somebody coughs on you it is more likely that you will get flu – **right**
3. If somebody coughs on you it increases your risk of getting flu – **right**

*Part 4*

1. If you wash your hands regularly you will definitely not get diseases – **wrong**
2. If you wash your hands regularly it makes it less likely that you will get diseases – **right**
3. If you wash your hands regularly it decreases your risk of getting diseases – **right**

**How to respond - what next?**

If there is a range of answers, you may choose to respond through structured class discussion. Ask one student to explain why they gave the answer they did; ask another student to explain why they agree with them; ask another to explain why they disagree, and so on. This sort of discussion gives students the opportunity to explore their thinking and for you to really understand their learning needs. Responses often work best when the activities involve paired or small group discussions, which encourage social construction of new ideas (meaning making) through dialogue.

If students have misunderstandings about risk factors for non-infectious and infectious diseases, topics BHD2 *Human lifestyles and health* and BHD3 *Infectious disease* provide diagnostic questions and response to activities to further probe and develop their understanding.

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