

## **GCSE Biology A (Gateway)**

**J247/04 Biology A B4-B6 and B7 (Higher Tier)**

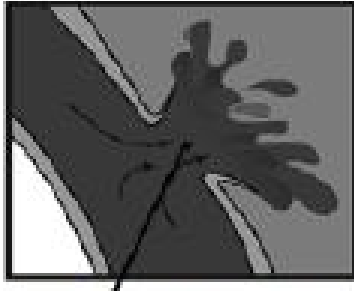
**Question Set: 6**

1

Strokes are a type of cardiovascular disease.

One cause of a stroke is an artery in the brain bursting.

Hemorrhage



Blood bursts through wall

- (a) (i) When a person has a stroke, why are arteries more at risk of bursting than veins?

*Blood in arteries under higher pressure .*

[1]

- (ii) How are arteries adapted to try and prevent them bursting and causing a stroke?

*They have thicker walls .*

[1]

(b) Strokes can have many risk factors.

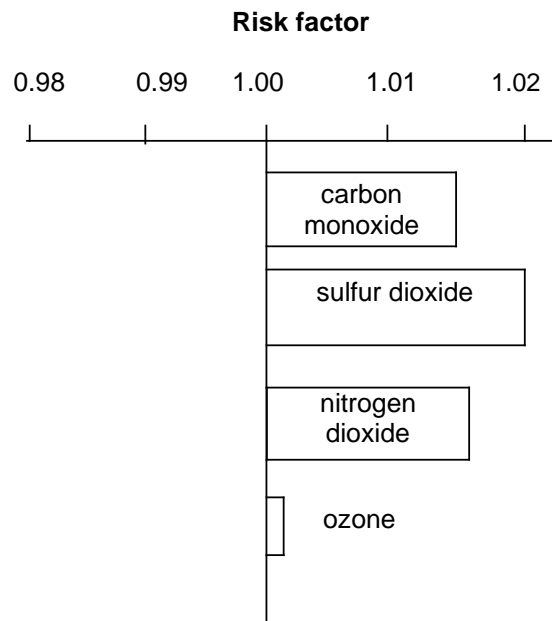
Scientists are trying to investigate whether the risk of having a stroke is increased by pollution.

- They looked at data from 28 different countries, involving six million people.
- They looked at the number of people who had a stroke soon after an increase in pollution.
- They compared this to the number of people who had a stroke after no increase in pollution.

This formula was used to produce a risk factor:

$$\text{risk factor} = \frac{\text{number of people who had a stroke soon after an increase in pollution}}{\text{number of people who had a stroke after no increase in pollution}}$$

The graph shows their results



(i) If the risk factor for a pollutant was 1.00, what conclusion could the scientists make? [2]

*same number of people having strokes after pollution compared to when no pollution, pollution is not a risk factor.*

(ii) Which pollutant is least likely to be a risk factor for a stroke?

*Ozone*

[1]

(iii) The risk factors calculated by the scientists are quite small.

However, they still think that pollution is an important factor in strokes.

[2]

How did the nature of the data they used help to convince them of this?

*They took a large sample from 28 countries. So even if it was a small risk factor a lot of people were affected.*

**Total Marks for Question Set 6: 7**

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