

Genetic disorders

1. Cystic fibrosis is an inherited disorder that can seriously affect health.

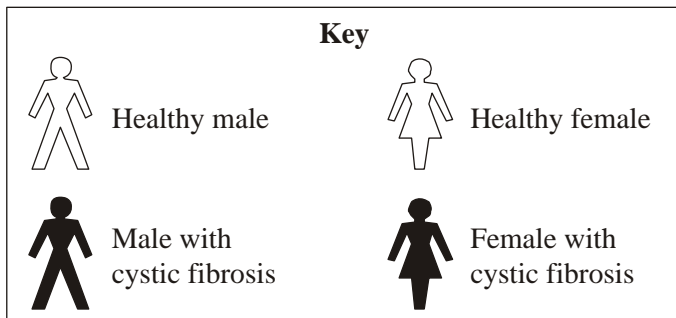
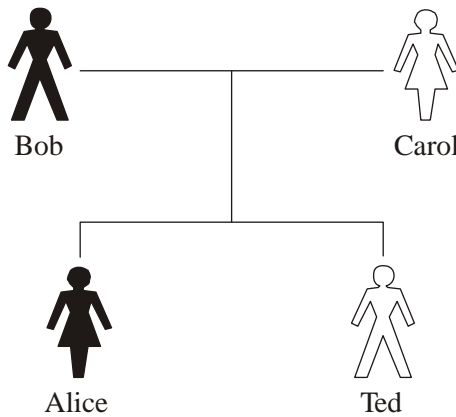
(a) Which **one** of these is affected by cystic fibrosis?

Draw a ring around your answer.

- blood cell membranes kidneys nervous system**

(1)

(b) The diagram shows the inheritance of cystic fibrosis in a family. The allele that produces cystic fibrosis is recessive.



(i) Explain why Alice inherited cystic fibrosis.

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(2)

(ii) Explain why Ted did **not** inherit cystic fibrosis.

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(2)

(c) Bob and Carol know that there is a risk that their next baby will have cystic fibrosis.

Embryos can be screened for the allele that produces cystic fibrosis.

Many people support the screening of embryos, but others do not.

(i) Suggest **one** reason why many people support the screening of embryos for the cystic fibrosis allele.

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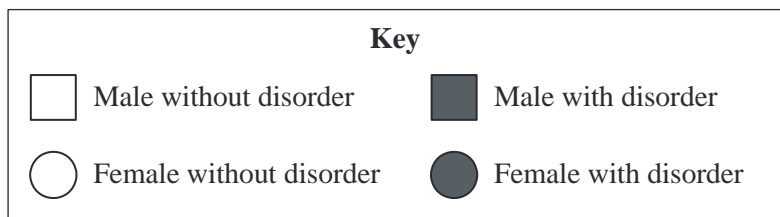
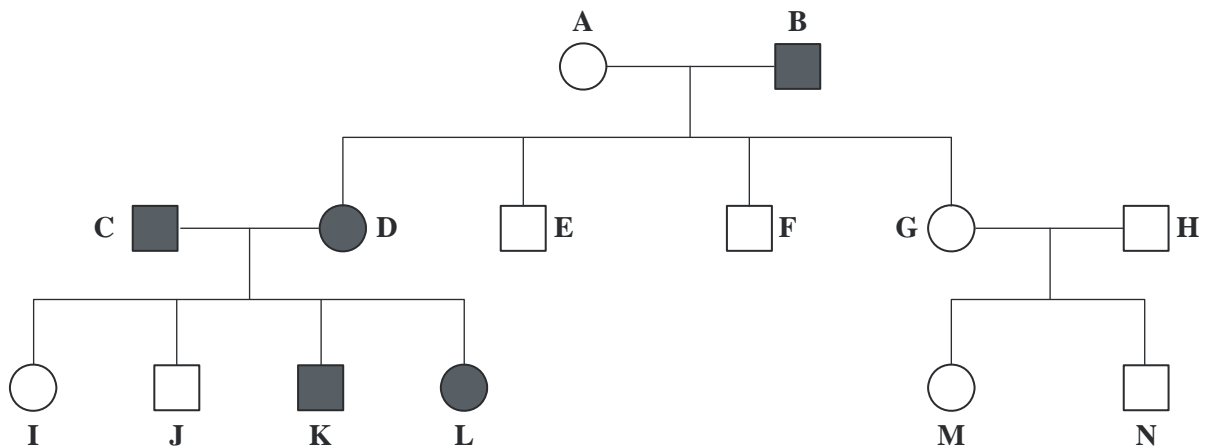
(1)

(ii) Suggest **one** reason why many people are against the screening of embryos for the cystic fibrosis allele.

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(1)
 (Total 7 marks)

2. The diagram shows a family tree in which some individuals have an inherited disorder, which may cause serious long-term health problems.



(a) What proportion of the children of **A** and **B** have the disorder?

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(1)

Unit B2, B2.7.3

- (b) Explain the evidence from the diagram which shows that the allele for the disorder is dominant.

Use the appropriate letters to identify individuals in your answer.

You may use genetic diagrams in your explanation. There is space for you to draw a genetic diagram at the top of the facing page.

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(3)

- (c) (i) What is meant by 'embryo screening'?

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(1)

- (ii) A doctor suggests that couple **C** and **D** should have their embryos screened but that couple **G** and **H** do **not** need this procedure.

Explain the reasons for the doctor's suggestions.

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(3)

(Total 8 marks)