6.1.7 Inherited disorders

AQA GCSE Biology (Higher)
Question and answer notes

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How to use these notes

These notes cover everything you need to know for this part of the specification. They have been written in question-answer format to make them easier for you to study from.

In order to study successfully, I recommend you do the following for each question and answer:

- Read it carefully and make sure you **understand** it.
- **Memorise** the answer.
- **Practice** applying your understanding to past exam questions.

A good way to memorise information is to use **retrieval practice**. This is when you practise retrieving information from your memory. You could do this by making a flashcard for each question with the question on one side and the answer on the other. Or you could use a flashcard app. Alternatively, use a sheet of paper to cover up the answer so you can only see the question. Try to answer the question and then check how you did.

You should practise retrieving each answer from your memory until you can do it perfectly. Even once you can retrieve the answer perfectly, your ability to retrieve it will probably fade as time passes without practising. Therefore you will need to keep going back to the questions that you have previously mastered and practising them again. However, each time you re-learn the answer, the memory will be stronger and will last longer than the time before.

What is an inherited disorder?
An inherited disorder is a medical condition that is passed on from parents to offspring. Inherited disorders are caused by certain alleles.

What is an example of an inherited disorder that is caused by a dominant allele?
Polydactyly (having extra fingers or toes) is an inherited disorder caused by a dominant allele.

What is an example of an inherited disorder that is caused by a recessive allele?
Cystic fibrosis (a disorder of cell membranes) is an inherited disorder caused by a recessive allele.

What is embryo screening?
Embryo screening is when DNA is taken from an embryo and analysed to see whether the embryo has any alleles that cause inherited disorders. It can be carried out on an embryo that is growing in the womb or an embryo that has been created in a laboratory for use in IVF. If the embryo is found to have alleles for inherited disorders, the parent(s) may decide to terminate the pregnancy or to not use the embryo in IVF.

What is the main risk associated with embryo screening?
When embryo screening is carried out on an embryo in the womb, there is a risk that it may cause a miscarriage (death of the embyro).

What are some of the ethical considerations relating to embryo screening?
Some people object to embryo screening because they argue that it is based on the idea that some lives are more valuable than others.
On the other hand, some people argue that it gives potential parents the ability to make an informed choice about whether to continue with a pregnancy.

What are some of the economic issues related to embryo screening?
Embryo screening is expensive.
On the other hand, it prevents people with certain medical conditions from being born, so it also reduces the amount of money spent on healthcare.