CRISPR - Possibilities and limits

B2 reading development. Work from the text, not outside knowledge. Notice dates, quantities, cause and effect, and the limits of a claim.

A. Read and summarise

1 Genome editing allows scientists to change DNA. CRISPR is one group of tools used for this work. It developed from a defence system found in bacteria, which helps them recognise and respond to invading viruses. Researchers adapted the system for laboratory use.

2 In a widely used method, a guide RNA directs a protein called Cas9 towards a chosen DNA sequence. Cas9 cuts the DNA, and the cell's repair processes can then change the sequence. The guide is easier to redesign than some older tools, which require a new engineered protein for each target. This has helped make many research tasks quicker and less expensive.

3 Scientists use genome editing to investigate what genes do, including by studying organisms such as mice and zebrafish. This work can improve understanding of disease and help develop treatments. However, a useful laboratory result is not automatically a safe treatment. Editing can sometimes affect an unintended location, so researchers must investigate possible errors.

4 The type of cell being edited matters too. Changes to ordinary body cells affect the person treated. Changes to reproductive cells can be passed to future generations. That distinction raises questions about consent and long-term consequences. Access is another concern: a technology may be effective while remaining too expensive for many people. CRISPR therefore offers important possibilities, alongside practical and ethical questions.

B. Check the evidence

Label each claim True (T), False (F) or Not Given (NG). Underline the evidence for T or F. For NG, say what information is missing.

1. ___ CRISPR laboratory tools were adapted from a bacterial defence system.
2. ___ Cas9 guides the RNA to the chosen DNA sequence.
3. ___ Each new CRISPR target always requires a newly engineered protein.
4. ___ A successful laboratory result guarantees a safe treatment.
5. ___ Changes to reproductive cells can affect future generations.
6. ___ The text states the price of a CRISPR treatment.

C. Look closely

Choose one word or phrase that limits a claim, such as can, around or possible. Explain how the meaning changes if you remove it.

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CRISPR - Key and distractor practice

B. Answers and evidence

1. True Paragraph 1 identifies this origin.

2. False Paragraph 2 states the reverse: the guide RNA directs Cas9.

3. False Paragraph 2 contrasts redesigning the guide with older protein-based tools.

4. False Paragraph 3 explicitly says it does not.

5. True Paragraph 4 distinguishes reproductive cells from ordinary body cells.

6. Not Given Expense is discussed, but no price is given.

D. Choose the strongest answer

What is the writer's main purpose?

A. To argue that all gene editing should stop.

B. To recommend a treatment for a particular patient.

C. To explain both the potential and the limits of a research tool.

D. To claim that CRISPR has removed all ethical concerns.

Answer: C. The whole text explains how the tool works and why safety, inheritance and access still matter.

Why the other answers are tempting

A distractor may reuse a word from the text while changing its meaning. Others reverse a relationship, exaggerate a claim or add a detail the writer never gives. Explain the problem with each incorrect option.

Teacher notes

Ask learners to explain their evidence before checking the key. For a Not Given answer, lack of evidence is different from evidence that a claim is false. Repeat the exercise with a short text learners choose themselves. This is a general reading-skills lesson; it does not reproduce a full Cambridge reading part.

Sources and provenance

New lesson text and questions written for this worksheet. Factual sources checked on 11 October 2026: NHGRI: What is genome editing?; How Does Genome Editing Work? Full links and source decisions are in the publishing brief.

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