Diseases once thought incurable are now on the cusp of treatments. It's because of CRISPR. Here's a primer

Like many other advances in science and medicine, CRISPR was inspired by nature. In this case, the idea was borrowed from a simple defense mechanism found in some microbes, such as bacteria.

To protect themselves against invaders like viruses, these microbes capture snippets of the intruder's DNA and store them away as segments called CRISPRs, or clustered regularly interspersed short palindromic repeats. If the same germ tries to attack again, those DNA segments (turned into short pieces of RNA) help an enzyme called Cas find and slice up the invader's DNA.

After this defense system was discovered, scientists realized that it had the makings of a versatile geneediting tool. Within a handful of years, multiple groups had successfully adapted the system to edit virtually any section of DNA, first in the cells of other microbes, and then eventually in human cells.

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There are still a lot of questions about all the ways that CRISPR might be <u>put to use in cancer research</u> and treatment. But one thing is for certain: The field is moving incredibly fast and new applications of the technology are constantly popping up.

"People are still improving CRISPR methods," Dr. [Jerry] Li said. "It's quite an active area of research and development. I'm sure that CRISPR will have even broader applications in the future."

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