

There's a polymerase, a DNA polymerase, which copies both strands of the DNA, the top strand and the bottom strand. Sometimes those two strands are called Watson and Crick strands. But they're not perfect, as we just mentioned. Sometimes they make mistakes. And the kind of mistake they might make is, you'll see in a second, to incorporate the wrong nucleotide. Normally there's going to be an A opposite a T, and a C opposite a G, but suppose it makes a mistake and copies a T where a C should be. It should be G-C but now there's a T. So that's a mistake, a potential mutation. Fortunately, cells have repair systems that can erase those mutations, and those repair proteins indicated here called MSH2, MSH6, MLH1, PMS2, the names don't matter, what's important is that they recruit another enzyme EXO1, exonuclease, which chops off the mutant strand. Then it allows a DNA polymerase to come by and synthesize the correct strand thereby fixing up the DNA and making it normal.