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Pharmacology
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DNA replication steps

Step 1: Replication Fork Formation
Before DNA can be replicated, the double stranded molecule must be "unzipped" into two single strands. DNA has four bases called **adenine (A)**, **thymine (T)**, **cytosine (C)** and **guanine (G)** that form pairs between the two strands. Adenine only pairs with thymine and cytosine only binds with guanine.

Step 2: Primer Binding
The leading strand is the simplest to replicate. Once the DNA strands have been separated, a short piece of RNA called a **primer** binds to the 3' end of the strand. The primer always binds as the starting point for replication. Primers are generated by the enzyme **DNA primase**.

Step 3: Elongation
Enzymes known as **DNA polymerases** are responsible creating the new strand

by a process called elongation. There are five different known types of DNA polymerases in bacteria and human cells.

Step 4: Termination
Once both the continuous and discontinuous strands are formed, an enzyme called **exonuclease** removes all RNA primers from the original strands. These primers are then replaced with appropriate bases

2. functions of DNA replication enzymes

Important Enzymes in DNA Replication	
Enzyme	Function
Topoisomerase	Relaxes the super-coiled DNA
DNA helicase	Unwinds the double helix at the replication fork
Primase	Provides the starting point for DNA polymerase to begin synthesis of the new strand
DNA polymerase	Synthesizes the new DNA strand;

	also proofreads and corrects some errors
DNA ligase	Re-joins the two DNA strands into a double helix and joins Okazaki fragments of the lagging stran