

Translation: Using mRNA to Make Proteins!

Transcription recap:

- DNA Stores genetic info. (code) in the nucleus
- mRNA copies that genetic code from the DNA & carries it out of the nucleus

Translation PROCESS:

- mRNA carries genetic info to the ribosomes
 - A new contender enters: tRNA (transfer) works inside the ribosome to read the genetic code carried by mRNA
 - tRNA reads every 3 nucleotides on mRNA.
■ Each group of THREE nucleotides is called a Codon
■ Each codon is an instruction to use ONE type of Amino Acid
■ The tRNA tells the ribosome what type of AA to use
- AUG = start codon*

Translation PURPOSE:

As tRNA reads new codons, the ribosome uses more amino acids... multiple AA are linked & folded to create a protein

Amino Acids & Proteins

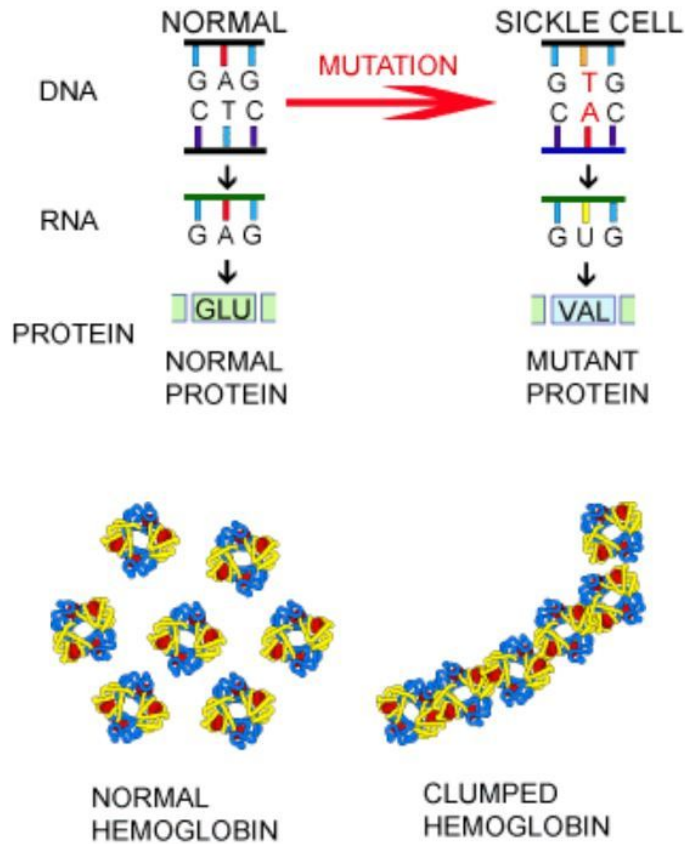
- There are 20 different AAs
- These 20 AA's can be combined infinitely to make thousands of diff. proteins
- The many different proteins are used to perform many jobs in our bodies
- Proteins can break things down, build, support, communicate, etc.
 - One special type of protein, an enzyme speeds up metabolism by lowering activation energy
- Without the correct proteins our bodies would not function normally, if at all

Example protein & function:

1. Hemoglobin: Red blood cells are made of this → helps them carry oxygen

When hemoglobin is "misfolded" can't carry oxygen as well, & causes blood cells to deflate (sickle shape)

Example: The hemoglobin protein folded normally VS. folded abnormally:



The above picture shows the creation of hemoglobin, starting the DNA transcription. What differences in the journey to become a protein do you notice between the "NORMAL" hemoglobin and the "SICKLE CELL" hemoglobin?
