DNA Basics:

DNA (deoxyribonucleic acid) is one of the most important molecules in your body, and though 99.9% of DNA is all the same in a human there is just 0.1% that is different and unique in every person, making them different unique and that makes us unique to anyone else.

This structure is like an instruction book of recipes, for the ingredients that each person needs to develop and function.

The Structure of DNA

In the average human cell, there is about 2m (6ft) of DNA. The largest cell is very tiny , in fact 100µm in diameter, which is smaller than a pin head.

You may ask how does this fit into this small space, well the answer is YES there is a lot of twisting and winding. DNA wraps around protein clusters called histones to form units called nucleosomes. These nucleosomes fold into a zig-zag patterned fiber, which then forms loops.

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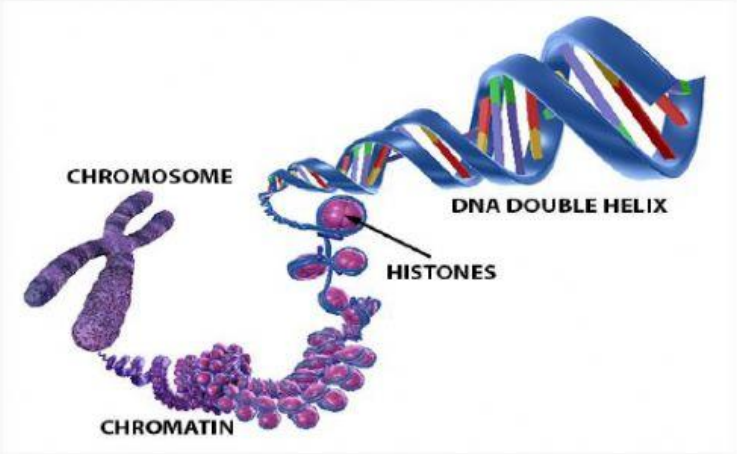

Let's us look a bit further into this structure of DNA

In each DNA there are 46 separate strings of DNA in each somatic cell of the human body. These are called chromosomes. Each are grouped into pairs called homologous. In each of these pairs the function structure are similar. We are looking here at 22 pairs. The last pair the 23rd pair which is the sex chromosomes. Ii male individuals. . X and Y sex chromosomes only have certain regions (autosomal regions) that are homologous

Following the image below let us look closer at this twisted ladder and how it is made up The sides of the ladder are composed of alternating molecules of sugar called deoxyribose, and a phosphate group. Each side is named for the direction it runs in . The ladder's "steps" are composed of two nitrogenous bases, held together with hydrogen bonds.

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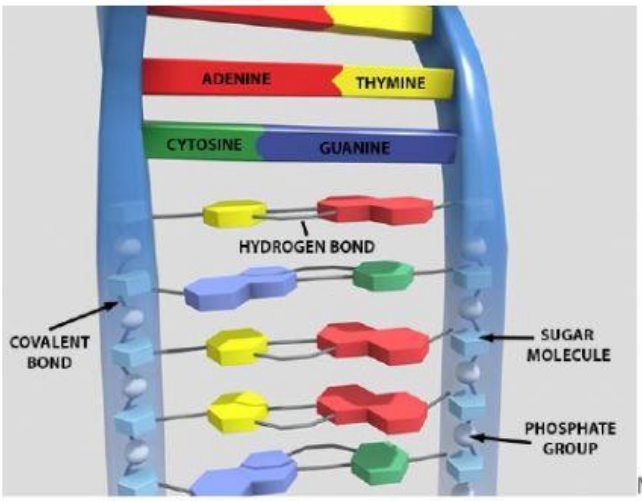

Molecular structure of DNA.

Four nitrogenous bases—cytosine, thymine, adenine, and guanine—can be found on strands of DNA. In terms of their chemical structure, cytosine and thymine are pyrimidines and adenine and guanine are purines. Adenine and thymine (A and T) always pair together, and guanine and cytosine (G and C) always pair together. They pair this way because A and T form two hydrogen bonds with each other and G and C form three.

At the most basic level, different sections of DNA strands provide instructions for the synthesis of proteins.

Questions

1.What is DNA?

2. What is DNA made up of?

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3. Describe what is Chromosomes?

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