

CONTINUITY OF LIFE

1. What is Chromosome ?

- A threadlike structure of nucleic acids and protein found in the nucleus of most living cells, carrying genetic information in the form of genes

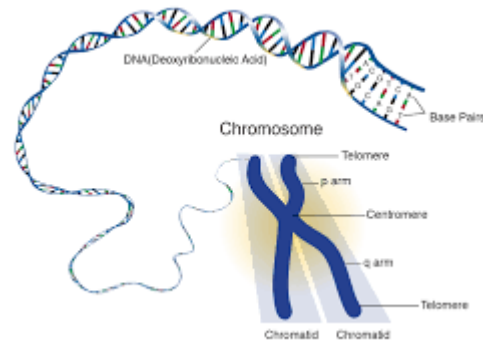


Fig: Chromosome

- Heinrich Wilhelm Gottfried von Waldeyer coined in 1888 the term “Chromosome”.

2. How the Chromosomes are formed?

- Chromosomes are formed from chromatin. Chromatin is a complex of DNA and protein (nucleosome) found in Eukaryotic cell nucleus. In the time of cell division these chromatin fibers are coiled and condensed to form chromosome.
- Nucleosome : DNA wrapped around a set of eight proteins called histone octamer. Each histone octamer is composed of two copies each of the histone proteins H2A, H2B, H3, and H4.

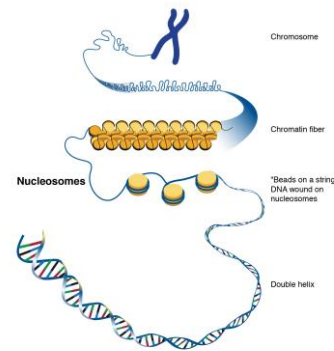


Fig: Nucleosome

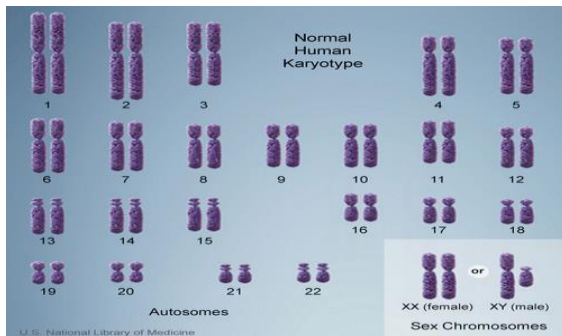
3. Types of Chromosome:

- Types of chromosome according to Sex Determination Properties:

1. Autosome - takes part in body composition except sex determination . In human body 22 pairs of autosome present.

2. Allosome – takes part in sex determination. Allosome or sex chromosomes are 1 pair , in human.

- According to Centromere : Its four type. **Telocentric** (centromere is located at the terminal end of the chromosome), **Acrocentric** (centromere is located quite near one end of the chromosome), **Metacentric** (centromere is located in the middle) , **Submetacentric** (centromere is near middle location).



CLASSIFICATION OF CHROMOSOMES BASED ON THE POSITION OF CENTROMERE

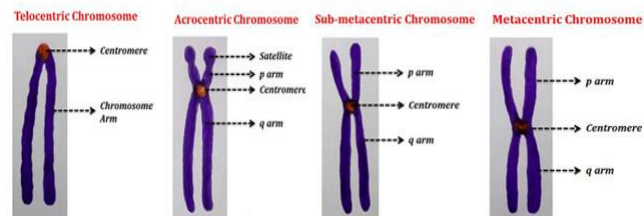


Fig: Left. Autosome and Allosome in Human; Right. Telocentric, Acrocentric, Submetacentric, Metacentric