

What is Y chromosome?

August 27, 2023 • vajiramandravi.com



About Y chromosome:

- The Y chromosome is **one of the two sex chromosomes** in humans (the **other is the X chromosome**).
- **The sex chromosomes form one of the 23 pairs of human chromosomes in each cell.**
- The **Y chromosome is very small**. It likely **contains 50 to 60 genes** and represents **2% of a cell's total DNA**.
- **Each person normally has one pair of sex chromosomes in each cell.**
- The **Y chromosome is present in males, who have one X and one Y chromosome, while females have two X chromosomes.**
- **Genes in Y Chromosome:**
 - Because only males have the Y chromosome, the **genes on this chromosome tend to be involved in male sex determination and development.**
 - The **Y chromosome is relatively small** and contains fewer genes compared to the X chromosome.
 - This has **led to its characterization as the “male-determining” chromosome**, as its primary role is to initiate and control male development.

- While the **X chromosome contains genes related to various functions throughout the body**, the Y chromosome focuses on male-specific traits.
 - **SRY Gene:** The Y chromosome **contains a critical gene called the Sex-Determining Region Y (SRY) gene**. Sex is determined by the SRY gene, which is responsible for the **development of a fetus into a male**.
 - **Other genes** on the Y chromosome **are important for enabling men to father biological children** (male fertility).
 - **Genetic Disorders:**
 - **Mutations or deletions of genes** on the Y chromosome can **lead to various genetic disorders and infertility in males**.
 - **For example, deletions in the AZF** (Azoospermia Factor) **region of the Y chromosome can cause male infertility** by affecting sperm production.
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Q1) What is a Chromosome?

A chromosome is a thread-like structure made of DNA (deoxyribonucleic acid) and associated proteins found in the nucleus of eukaryotic cells. Chromosomes are essential components of living organisms, and they play a central role in the storage and transmission of genetic information from one generation to the next.

Source: [Researchers assemble the first complete sequence of a human Y chromosome](#)

Source: <https://vajiramandravi.com/current-affairs/what-is-y-chromosome/>

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