

What is X-Chromosome?

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About X-Chromosome:

- It is **one of the two sex chromosomes** in humans (the **other is the Y chromosome**).
 - There are **23 pairs of chromosomes** in the human body. This includes **22 pairs of autosomal or somatic chromosomes** that are common to both men and women **and one chromosome** that **differs according to** what **gender** a person is (**sex chromosomes**).
- Each person usually has one pair of sex chromosomes in each cell. **Females** typically **have two X chromosomes**, while **males** typically have **one X and one Y chromosome**.
- **Men inherit** the **X chromosome** they have **from their mother** and the **Y chromosome from their father**, while **women inherit one X chromosome from the mother** and the **other from the father**.
- **In women**, the **X chromosome** represents almost **5% of the total DNA**, and **in men**, who have only one X chromosome, it represents about **2.5% of the total DNA**.
- Early in the embryonic development of **people with two X chromosomes**, **one** of the X chromosomes **is randomly and permanently inactivated in cells other than egg cells**. This phenomenon is called **X-inactivation or lyonization**.
 - X-inactivation **ensures** that **people with two X chromosomes have only one functional copy of the X chromosome in each cell**.

- Because X-inactivation is random, normally, the X chromosome inherited from one parent is active in some cells, and the X chromosome inherited from the other parent is active in other cells.
 - The X chromosome likely **contains 900 to 1,400 genes** that provide instructions for making proteins.
 - **Genetic disorders** that arise from missing, additional, or malformed copies **of the X chromosome are termed numerical disorders.**
 - Examples include **Klinefelter's syndrome**, where a male has one or more extra copies; **Triple X syndrome**, where a female has one extra copy and **Turner syndrome**, where a female has one normal X chromosome and one missing or abnormal one.
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Q1: What's an Autoimmune Disease?

Autoimmune diseases result when your immune system is overactive, causing it to attack and damage your body's own tissues. Normally, your immune system creates proteins called antibodies that work to protect you against harmful substances such as viruses, cancer cells, and toxins. But with autoimmune disorders, your immune system can't tell the difference between invaders and healthy cells.

Source: [X chromosome revival in older women increases autoimmune disease risk](#)

Source: <https://vajiramandravi.com/current-affairs/x-chromosome/>

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