Communication aid

Ring chromosomes

This communication aid has been produced for clinicians to help support and guide conversations about ring chromosomes with their patients.

Chromosomes explained

We all have over 20,000 genes, which provide instructions for how our body works. Our genes are packaged into structures called **chromosomes**.

People usually have 23 pairs of chromosomes: 22 pairs of **autosomes** and one pair of **sex chromosomes** (XX or XY).

One chromosome from each of each pair is inherited from each parent. Our sex chromosomes are called X or Y, and usually determine sex assigned at birth.

You can learn more about the basics of our genome in the VCA: Genes, chromosomes and DNA (available via the QR code, below).

Key terms

Genome: The complete set of genetic information found inside a cell.

Chromosome: Packages of DNA that are found in our cells.

Autosome: A chromosome that is not a sex chromosome (named 1–22).

Sex chromosome: A chromosome containing genes that determine the sex a person is born as (named X or Y).

Telomere: The protective cap at the ends of a chromosome that keeps the DNA stable and prevents damage.

What is a ring chromosome?

A ring chromosome happens when the ends of one chromosome join together to form a ring shape. Usually, both ends of the chromosome break off and are lost before the tips fuse together. These lost areas contain the protective chromosome ends, called **telomeres**, and may contain important genes.

Formation of a ring chromosome can result in loss of genes and problems with cell division. The effect on a person's health depends on which chromosome is affected and how much genetic information is lost.

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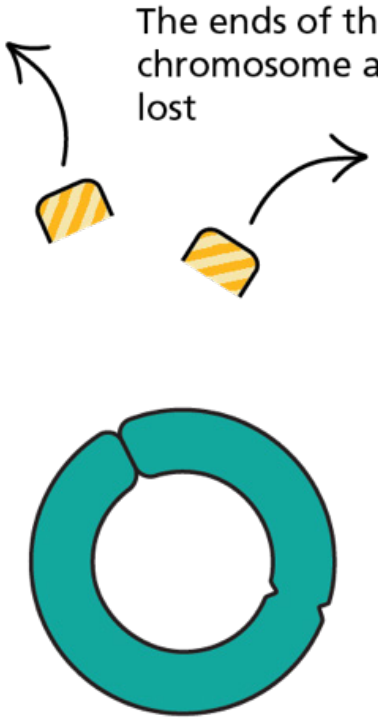
A chromosome, showing the ends highlighted



A ring chromosome

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