Communication aid

X-linked recessive inheritance: affected father

This communication aid has been produced for clinicians to help support and guide conversations about X-linked recessive inheritance with their patients.

What causes X-linked recessive conditions?

We all have over 20,000 genes, which provide instructions for how our body works.

Our genes are packaged into structures called **chromosomes**. Our chromosomes come in pairs, with one inherited from each parent.

Most chromosomes (the autosomes) are numbered 1–22. Our sex chromosomes are called X or Y, and usually determine sex assigned at birth.

- Females typically have two X chromosomes.
- Males typically have one X and one Y chromosome.

X-linked recessive conditions are caused by **changes in genes** that are located on the X chromosome.

Males who have a change on their X chromosome would be expected to develop the condition.

Females who have a change on one of their two copies of the X chromosome are known as carriers. Usually, they would not develop the condition. In some cases, they may develop a milder version of the condition.

How are X-linked recessive conditions inherited?

When an affected male has a child with someone who is not a carrier, male children will inherit their Y chromosome and female children will inherit their X chromosome with the change.

This means, for every pregnancy:

- All male children will be unaffected and not carriers of the condition.
- All female children will be carriers for the condition and usually unaffected.

Key terms

Chromosomes: Packages of DNA which are found in our cells.

Gene change: Changes in a gene or chromosome used to be referred to as 'mutations'. Now, they are more commonly called changes, alterations or variants.

Want to learn more?

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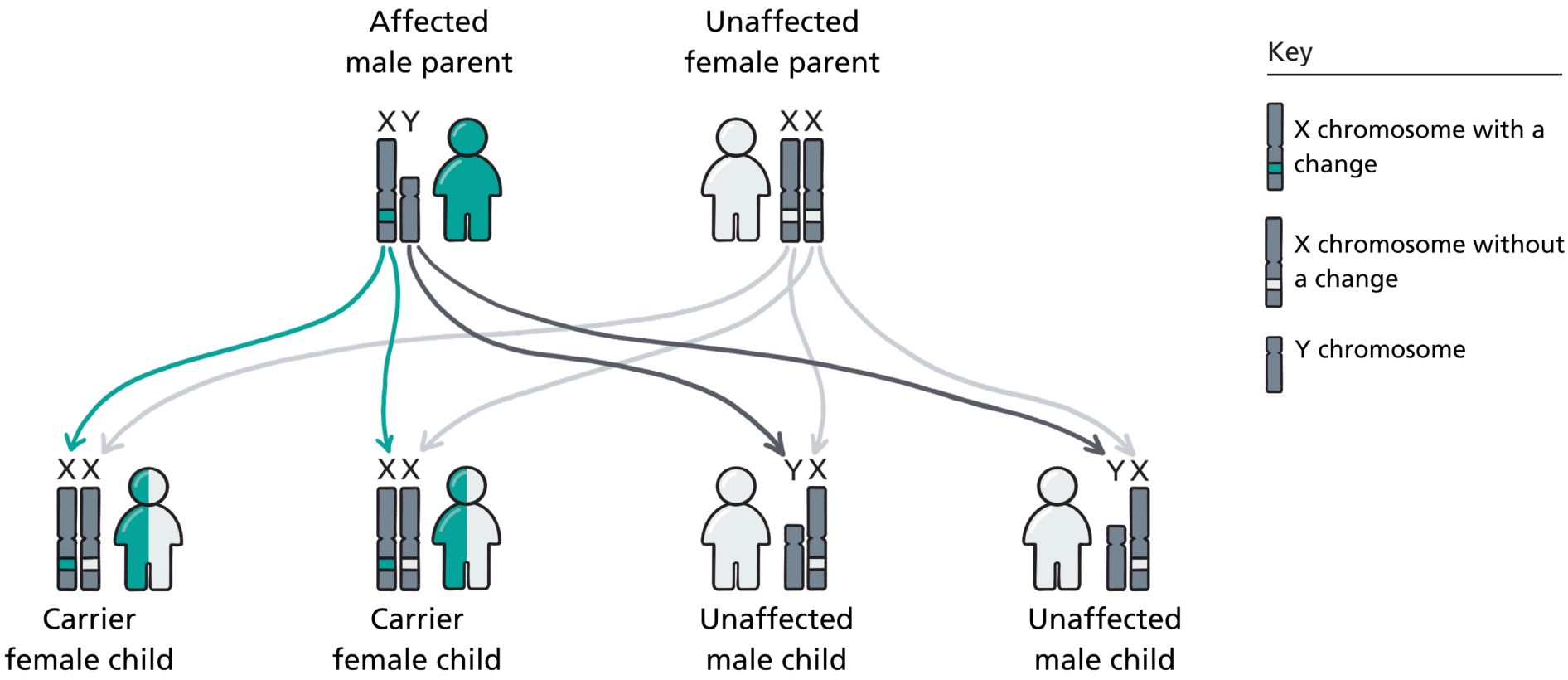

All female (XX) children will be carriers of the condition

All male (XY) children will be unaffected

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