

Information about your genetic testing result

Your nephrologist organised a genetic test for you. This information sheet explains your test result and what it might mean for your health and your family members.

This document should not replace the advice of your relevant healthcare professional. Please read it carefully and see your nephrologist if you have any questions.

Your genetic test result

The test found a disease-causing change (also known as a *pathogenic variant*) in the *COL4A5* gene. This causes a condition known as **X-linked Alport Syndrome (XLAS)**.

About X-linked Alport Syndrome (XLAS)

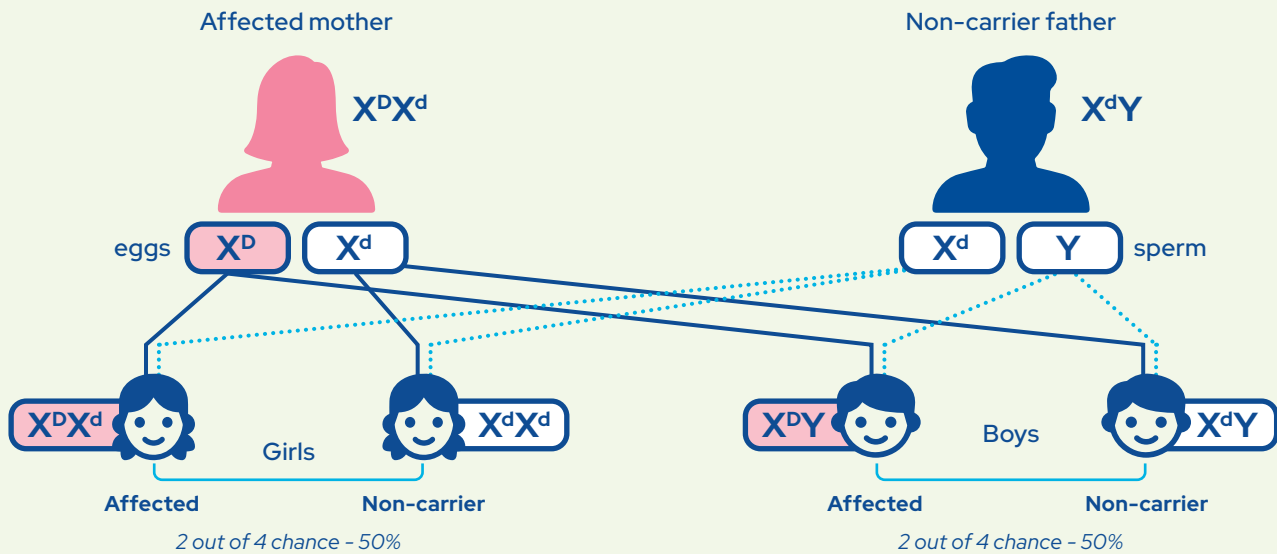
There are different kinds of Alport Syndrome. Your condition (XLAS) affects females and males differently.

- In females, XLAS can lead to progressive kidney damage. However, the effect on the kidneys is variable in females. It can range from no symptoms at all, to isolated blood in the urine that is only visible under the microscope (microscopic haematuria), sometimes with protein in the urine (proteinuria), abnormal kidney function and kidney failure.
- Not all females with XLAS will experience kidney failure, however the risk of developing kidney failure is higher compared to the general population (30% by the age of 60). If kidney failure occurs, it may be in the context of other medical conditions which can also affect the kidneys.
- Hearing loss can also occur. Females with XLAS may also have eye changes, although these rarely affect vision.

What does this mean for you?

Your nephrologist will help you manage this condition and discuss specific treatment based on your genetic test result.

- You should have at least annual monitoring of blood pressure, a urine test looking for protein and/or blood in the urine, and a blood test to check kidney function by your nephrologist. You should also have an annual hearing test.
- If you develop protein in your urine, your nephrologist may prescribe a medication called an *angiotensin-converting enzyme (ACE) inhibitor* or *angiotensin II receptor blocker (ARB)*. These medications delay kidney failure and also help to control your blood pressure.
- Lifestyle modifications to reduce other risk factors for kidney disease are recommended (such as avoiding smoking, maintaining a healthy weight, and blood pressure control).



This diagram shows how an X-linked dominant variant can be passed from parents to children. Source: genetics.edu.au.

What could this mean for your family?

Your diagnosis of XLAS is likely to have important implications for family members.

XLAS is caused by changes (or variants) in the *COL4A5* gene located on the X chromosome. Females have two X chromosomes (XX) and are typically less severely affected by XLAS than males. Males have an X and a Y chromosome (XY) and typically have more severe symptoms.

First-degree family members (like your siblings or one of your parents) may also have this gene change. We recommend that you share this information with your family members, so they have the option to get more information on the condition and/or consider genetic testing for themselves.

If you have children (or plan to have children)

Your children have a 1 in 2 (50%) chance of inheriting the *COL4A5* variant that causes XLAS.

- If you have a son who inherits the *COL4A5* gene variant they will be more severely affected, and will usually need treatment in childhood.
- Daughters who inherit the *COL4A5* gene variant are likely to have similar features to you.
- **If you have children, please inform your nephrologist so they can refer your children for genetic testing.**

- If you (or other family members) are **considering having children in the future**, there are options to reduce the risk of passing on a genetic condition. Please refer to the information sheet **Reproductive genetic testing options**.
- If you are **pregnant or currently planning a pregnancy**, please let your nephrologist know so they can arrange an expedited referral to a genetics service.

Where to get further information

A genetic counsellor may be able to:

- support you to better understand your result
- support you to share your result and this information with your family members
- discuss ways to reduce the risk of passing on a genetic condition to future children

Your doctor or nephrologist can make a referral to a genetics service. You may also be able to find a genetic counsellor in your area by emailing kidneygenetics@monashhealth.org.

You may also find these online resources useful:

- Alport Foundation of Australia – alport.org.au
- Fact sheet – X-linked dominant inheritance – at genetics.edu.au