

What is Haemoglobin?

Haemoglobin (Hb) is a protein found in red blood cells; it carries oxygen from the lungs to all parts of the body and gives blood its red colour. Hb is made up of haem groups, which contain iron and globin chains which are made of protein.

The combination of different globin chains with the haem groups produces the different types of haemoglobin present in people. The normal adult haemoglobin is Hb A.

Where a person has inherited Hb A from both parents, they will have the usual Hb combination, Hb AA.

What is Haemoglobin Lepore?

Haemoglobin Lepore is a variant Hb and occurs when the structure of the globin chain is altered.

Heterozygous Hb Lepore (Hb Lepore trait) occurs when a person inherits the normal Hb from one parent and the Hb Lepore from the other.

When a person inherits the Hb Lepore from both parents, they are said to have homozygous Hb Lepore.

Who does it affect?

Hb Lepore occurs in a wide variety of ethnic groups particularly in Italians, Greeks and people of African ancestry.

What is the Treatment?

*Heterozygous Hb Lepore is **not** an illness and requires no regular medical follow-up or treatment.*

Heterozygous Hb Lepore may be mistaken for iron deficiency anaemia and iron tablets may be given unnecessarily. Iron tablets should only be taken if your doctor has done a special blood test to check that you lack iron.

Homozygous Hb Lepore causes a disorder of variable severity usually requiring significant medical follow-up.

How is Haemoglobin Lepore inherited?

Hb Lepore is inherited from either one or both parents who carry the Hb Lepore gene on the DNA in their cells.

If a person is born with Hb Lepore, they will have it all their life. It is **not** contagious or infectious.

How Will This Affect My Children?

Every child inherits haemoglobin genes from each parent. The type of haemoglobin gene inherited from the parent determines the type of haemoglobin the child will have.

A person with heterozygous Hb Lepore will pass on either a Hb Lepore gene **or** a normal Hb gene to each of their children.

When **both** parents carry a gene for a variant Hb, there is a chance that any child could have a severe form of the variant haemoglobin.

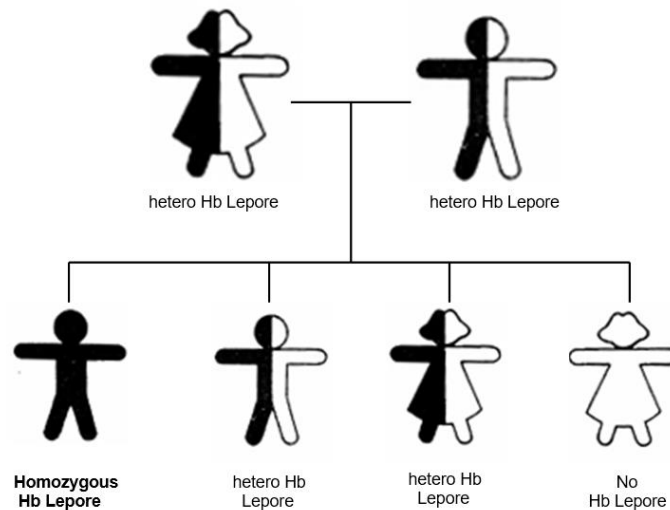
When **two** people with heterozygous Hb Lepore become parents, there are several possible outcomes:

- 25% chance that any child they have will inherit a Hb Lepore gene from each parent, resulting in homozygous Hb Lepore

- 50% chance that the child will inherit one normal Hb gene and one Hb Lepore gene and be heterozygous for Hb Lepore like its parents.
- 25% chance that the child will inherit a normal Hb gene from each parent and will not have Hb Lepore

These odds are the same for each pregnancy when **both** parents are heterozygous for Hb Lepore.

BOTH PARENTS WITH HETEROZYGOUS Hb LEPORE



Why is Knowing About Haemoglobin Lepore so Important?

The inheritance of heterozygous Hb Lepore produces a mild disorder.

However, the inheritance of a Hb Lepore gene from **both** parents produces homozygous Hb Lepore which is a moderately severe condition requiring significant medical treatment.

There are other types of thalassaemia or variant haemoglobins which if inherited together with Hb Lepore can also produce a severe condition.

If you have heterozygous Hb Lepore it is important to have your partner tested for the presence of thalassaemia or a variant haemoglobin before you have children.

Is There a Test for Haemoglobin Lepore?

YES ! Blood tests can show whether an individual has Hb Lepore.

It is important to have your partner tested for a variant Hb or thalassaemia before you have children. Other members of your family who are of reproductive age should also be tested for haemoglobin Lepore.

The documentation of carrier status is important as:

1. It avoids the need for repeat testing in the future.
2. Hb Lepore is often confused with iron deficiency and iron therapy may be given unnecessarily.
3. Hb Lepore is an inherited disorder which can be passed on to your child.

If two people with Hb Lepore do become parents and there is a risk of a severe disorder in the foetus, special prenatal tests can be done to detect or rule this out.

Early diagnosis of a possible severe form of Hb Lepore or thalassaemia is important so that treatment can prevent as many complications as possible.

Can Haemoglobin Lepore Be Prevented?

Hb Lepore cannot be prevented at this time, but a programme of health education, testing for the trait, genetic counselling and prenatal diagnosis can provide families with full medical information to help them have healthy children.

People who think they may have Hb Lepore should go to their family doctor for advice and testing.

Your family doctor can contact a Haematologist at the Community Laboratory or the Haematology Department at Canterbury Health Laboratories on (03) 364 0300 if further clinical input is required.

The Specialist Haematology Laboratory at Canterbury Health Laboratories provides a comprehensive diagnostic service in conjunction with the family doctor.

Contact for Canterbury Health Laboratories

Laboratory Services: Specialist Haematology Laboratory, Canterbury Health Laboratories.

Address: 524 Hagley Ave, Christchurch 8011.

Phone: (03) 364 0300.

On behalf of the Clinical Haematology Team at Christchurch Hospital