

Information about sickle cell trait

Manchester Sickle Cell &
Thalassaemia Centre



Introduction

This leaflet is for people who have just learnt that they, or someone they know, have sickle cell trait.

Many things might be going through your mind. What does it mean? Does it make me different from other people? Is it dangerous?

Having sickle cell trait simply means that your red blood cells contain a different type of haemoglobin (a component of the red blood cell) in addition to the common type.

Having this trait does not make you any more different from other people. You are taller or shorter than some people you know, the shape of your nose and ear is different; in other words you are an individual.

Apart from some minor exceptions that we will explain, sickle cell trait is not harmful to your physical or emotional health.

in fact, you would have never found out about your sickle cell trait unless you had this special blood test. In this leaflet we will explain about the trait in more detail.

What is sickle cell trait?

Sickle cell trait means having a different haemoglobin in addition to the most common type of haemoglobin. Haemoglobin is the part of our blood cells that gives our blood its red colour and carries oxygen from the lungs to all the other parts of the body.

Most people only have haemoglobin A. People with sickle cell trait have both haemoglobin A and haemoglobin S.

Haemoglobin S is very similar to haemoglobin A except for one change in structure. There are also many other types of haemoglobin that are different from the common type. Examples include haemoglobin C, D, O and E.

How does someone get sickle cell trait?

Haemoglobin types are inherited like eye and hair colour. Individuals with sickle cell trait have inherited the trait from one of their parents.

Is it true that only black people have sickle cell trait?

No. Sickle cell trait occurs in about one of ten black people. The trait is also found amongst Greeks, Sicilians, Turks, Syrians, East Indians, Saudi Arabians and others.

Sickle cell trait originated thousands of years ago in areas of the world that had malaria. Interestingly, people with sickle cell trait were more resistant to malaria and better able to adapt to their environment.

Certain genetic conditions are more likely to occur in some populations than in others. For example thalassaemia is a blood condition that is found in every race but is more common in Asian and Mediterranean populations.

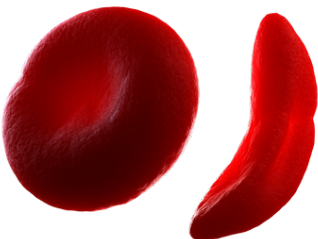
Does sickle cell trait lead to any health problems?

Sickle cell trait rarely causes any medical problems. Two exceptions should be mentioned but they are uncommon:

- An individual with sickle cell trait may experience a painful episode when exposed to **low oxygen pressures**. This may happen, for example, during a general anaesthetic when you will need to be given oxygen.
- Another exception involves the kidney. Individuals with sickle cell trait may occasionally have a condition called **haematuria**. This means microscopic amounts of blood are found in the urine. This condition is generally harmless.

What is sickle cell disorder?

Sickle cell disorder is different to sickle cell trait. When an individual has only haemoglobin S and no haemoglobin A then he or she has sickle cell disorder. When red blood cells containing haemoglobin S release their oxygen to the tissues they change shape from round to sickled (a sickle shape - see illustration below). This impairs their passage through the small blood vessels.



Close-up image of a normal shaped red blood cell on the left and a sickled red blood cell on the right.

Since red blood cells are very important for oxygen delivery throughout the body, sickle cell disorder can affect many organs as well as growth and development.

Sickle cell disorder may be a severe illness. Although it cannot be cured, effective treatment is available for people with sickle cell disorder.

Can sickle cell trait develop into sickle cell disorder?

No. Sickle cell trait is not an illness. Individuals with sickle cell trait will never develop the illness. However, individuals with sickle cell trait will not outgrow the trait. It is something you have for life.

If I have sickle cell trait can my child have sickle cell disorder?

The genetic makeup of your child comes equally from you and your partner. Just like hair and eye colour, your child will inherit their haemoglobin pattern from both of you. That is why both you and your partner should be tested.

If your partner does not have a haemoglobin trait, then none of your children will have sickle cell disorder. With each pregnancy you will have a 50% chance of having a child with sickle cell trait just like you. If your partner also has a haemoglobin trait, then the possible outcomes with each pregnancy depend on the specific trait they have.

If your partner has sickle cell trait there are three possible pregnancy outcomes. These are:

- **a 25% (1 in 4) chance of having a child without any haemoglobin trait**
- **a 50% (1 in 2) chance of having a child with sickle cell trait**
- **a 25% (1 in 4) chance of having a child with sickle cell disorder.**

That is why it is advisable that both you and your partner are tested to find out if there is a chance of having a baby with sickle cell disorder.

What shall I do if my partner has a haemoglobin trait as well?

If both you and your partner have a haemoglobin trait then there are several options that are open to you.

To discuss these issues you will need to contact a Genetic Counsellor and ask for a counselling appointment.

Counselling will provide you with important information about haemoglobin trait, the disorder and reproductive issues.

Useful links and further information

This leaflet just gives an overview of sickle cell trait. Here are some useful links to sources of information on sickle cell trait, disorder and related topics that you may find useful.

Our own webpage

Find useful contact information for the centre and this and other leaflets online.

www.manchesterlco.org/msctc

Sickle Cell Society

Supports and represents people affected by sickle cell disorder to improve their overall quality of life.

www.sicklecellsociety.org

Sickle Cell Care Manchester

Local charity and support group offering advice, advocacy, support and other useful information.

www.sicklecellcaremanchester.co.uk

NHS.UK

Accredited information on sickle cell and thalassaemia provided by the official NHS website.

www.nhs.uk/conditions/sickle-cell-disease

How we can help

We are the community sickle cell and thalassaemia team for Manchester. We are based at the Sickle Cell and Thalassaemia Centre on Oxford Road. We also provide services out in the community.

Our team is made up of experienced, qualified nurses, midwives and other expert staff. Our staff have undergone specialist training to specialise in sickle cell and thalassaemia disorders. We are part of Manchester Local Care Organisation which is the organisation that provides NHS community services in the city.

We can provide appointments for a blood test, counselling or general advice by contacting us. You can contact us directly.

Contacting the team

Phone



0161 529 6605 (Mon to Fri, 9am to 5pm)

Address



352 Oxford Road
Manchester M13 9NL
(Entrance in on Denmark Road)



We are just opposite the main central Manchester hospital site on Oxford Road.