Alberta Health Services

Newborn Metabolic Screening

Information for Health Professionals

Sickle Cell Trait (SCT)

Newborn screening in Alberta includes screening for sickle cell disease, which is a type of hemoglobinopathy. An incidental finding of this screening may identify infants who carry sickle cell trait. Infants who are carriers of other hemoglobinopathies will not be reported.

Summary

There are no immediate health concerns for an infant who carries sickle cell trait (SCT). No urgent action is required and referral to a hematologist is generally not necessary. Long term health implications have been reported in some individuals who carry SCT. However, there may be implications for other family members.

Background

Sickle cell disease (SCD) is a clinically significant hemoglobinopathy that is inherited in an autosomal recessive manner. In patients with SCD, red blood cells can acquire a crescent or 'sickle' shape, which may cause pain and tissue damage. Individuals with SCD have two sickle cell gene variants or one sickle cell gene variant alongside a second gene variant that impacts the quantity or quality of adult hemoglobin, such as beta thalassemia.

When an individual has only one sickle cell gene variant, they are said to carry **SCT**. SCT occurs in all ethnic groups, but it is more common in certain populations such as African, Mediterranean, Middle Eastern and Asian. Carrier frequency is dependent on ethnic background. The carrier frequency is estimated to be 1 in 100 overall in the Alberta population.

Health expectations for people with SCT

Most people who carry SCT will not have associated health problems. They will not develop SCD. Rarely, people who carry SCT may have some health issues such as hematuria, proteinuria or chronic renal disease. These symptoms are often subclinical. People who carry SCT may also experience exertional health illness associated with extreme strenuous activities or during periods of significant dehydration.

Resources for health professionals

While SCT is a benign condition that usually does not require referral to a hematologist, if you are concerned that your patient may have active clinical symptoms with their carrier status, please contact pediatric hematology:

Hematology Clinic (Edmonton)

Stollery Children's Hospital
8440 – 112 Street
Edmonton, AB T6G 2B7
Phone: 780-248-5415
Fax: 1-888-775-9068

Hematology Clinic (Calgary)

Alberta Children's Hospital
28 Oki Dr. NW
Calgary, AB T3B 6A8
Phone: 403-955-7155
Fax: 403-955-7393

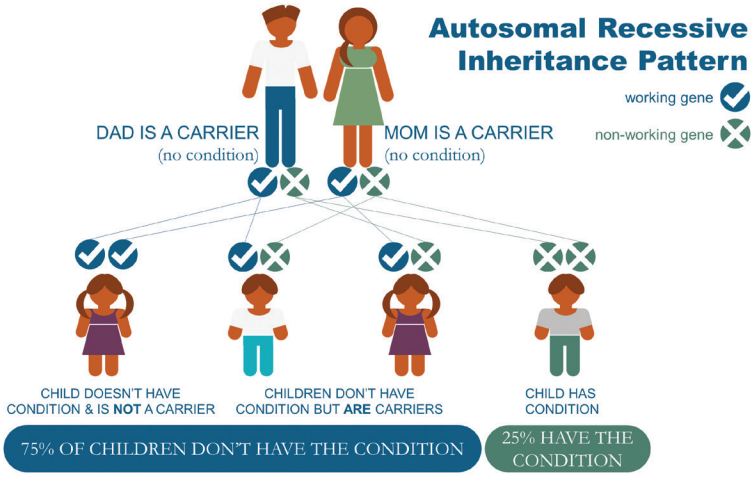
Implications for other family members

When a child is found to carry SCT, at least one parent is also expected to carry SCT.

Given how common SCT is, there is a chance that both parents carry SCT. These couples have a 1 in 4 probability of having a child with SCD.

If the parents of an infant carrying SCT are planning more pregnancies the following hemoglobinopathy investigations are recommended: hemoglobin electrophoresis, CBC and ferritin.

Genetic counselling is recommended if both parents are found to be carriers for any hemoglobinopathy.



Resources for health professionals

If your patient's family is interested in reproductive genetic counselling and both parents are carriers, please contact clinical genetics:

Clinical & Metabolic Genetics Program (Edmonton)

8-53 Medical Sciences Building
8440 – 112 St. NW
Edmonton, AB T6G 2H7
Phone: 780-407-7333
Fax: 780-407-6845

Clinical & Metabolic Genetics Program (Calgary)

Alberta Children's Hospital
28 Oki Dr. NW
Calgary, AB T3B 6A8
Phone: 403-955-7373
Fax: 403-476-8752

Resources for health professionals

Sickle Cell Foundation of Alberta: www.ourscfa.org
Sickle Cell Society: www.sicklecellsociety.org
My Health Alberta: https://myhealth.alberta.ca

Early screening, detection and treatment – every infant, every time

For more information about the NMS Program, visit www.ahs.ca/newbornscreening

MARCH 2019 NMS Program Conditions SCT V1