

Hemoglobin Trait Fact Sheet

As part of the mandated newborn screening panel, all dried blood spot specimens are screened for sickle cell disease and other hemoglobinopathies. This testing also allows for the identification of infants with hemoglobin traits. Although hemoglobin traits have almost no immediate clinical significance, information about the carrier status is relevant to future reproductive decision-making for the child and the parents. The Newborn Screening and Follow-up Program (NSFP) does not have hemoglobin trait guidelines. The NSFP recommends consulting a hematologist. The reference hemoglobin pattern for a newborn is FA.

Letter	Hemoglobin
F	Fetal hemoglobin (present in declining amounts until six months of age)
A	Normal adult hemoglobin
FAS	Combination of fetal, adult and sickle hemoglobin (carrier)
Others	Hemoglobin C, D, E, O, beta thalassemia, etc.

What is a carrier?

- Carriers have one copy of a normal hemoglobin gene and one copy of an abnormal hemoglobin gene.

Effects

- Most carriers do not have symptoms due to a normal hemoglobin A gene.
- Anemia can occur.
- Sickle cell trait carriers can experience sickle cell anemia crisis symptoms during strenuous activities.

Genetics

- If both parents have sickle cell trait, there is a 25 percent chance that a child will have sickle cell disease.
- If one parent has sickle cell anemia and the other does not carry a sickle cell gene, all children will have sickle cell trait.
- If one parent has sickle cell trait and the other has sickle cell anemia, there is a 50 percent chance the child will have sickle cell anemia and a 50 percent chance of having sickle cell trait.

The newborn's sickle cell trait results are forwarded to the appropriate treatment center for trait follow-up testing, education and counseling services.

Sickle Cell Treatment Centers:

Children's Hospital of Philadelphia: 215-590-4173	Hershey Medical Center: 717-531-6012
St. Christopher's Hospital: 215-427-5096	Lehigh Valley: 484-884-3333
Children's Hospital of Pittsburgh: 412-692-5055	Geisinger Hematology: 570-271-6848