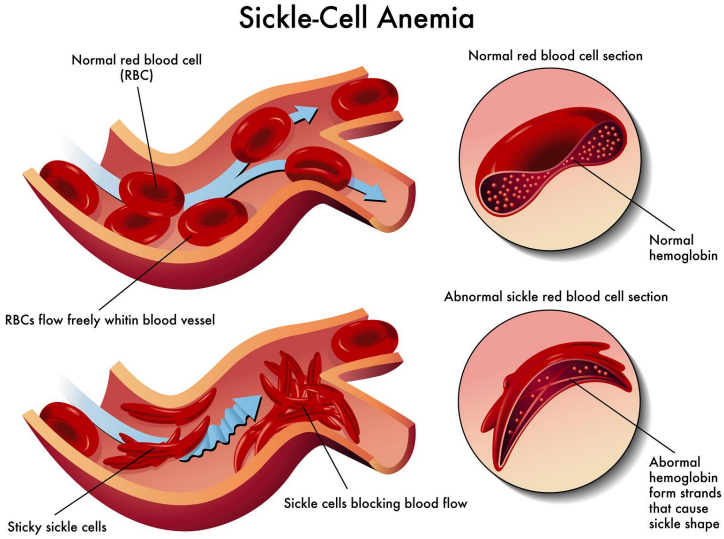
Sickle cell disease- All you want to know

What is sickle cell disease?

Sickle cell disease is a type of disorder related to red blood cells. It is also named sickle cell anemia or SCD. It is an autosomal recessive condition. A person with one genetic copy is likely to have sickle cell trait, but it is necessary to have two copies of the gene to have sickle cell disease.



It is an inherited disease that prevents red blood cells from providing oxygen to your body. The protein present in RBCs is in charge of carrying oxygen to body tissues; however, if you have sickle cell disease, it can be challenging for your red blood cells to deliver oxygen to the body.

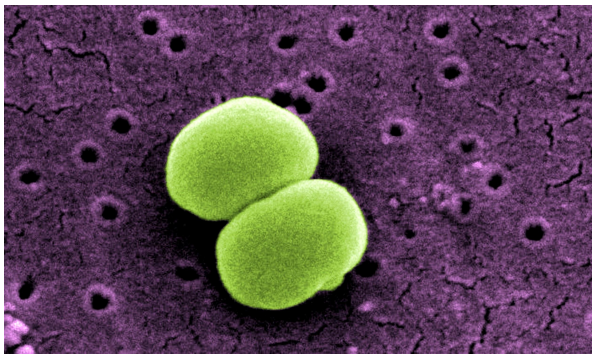
Naturally, the shape of red blood cells is round or disked, and they move effortlessly via capillaries. But if someone has SCD, the blood cells will no longer be in their original form and resemble sickle, a c-shaped tool used in farms.

The body has to suffer from continuous loss of blood cells as the cells with sickle cell hemoglobin decompose much earlier. A patient with this disease can likely suffer from unbearable pain, damaged tissues, acute chest syndrome, stroke, and other deadly problems as the path for flowing blood and oxygen gets jam.

Healthy red blood cells have a life span of around 120 days, while sickle cell stays alive for a maximum of 20 days.

What are the types of sickle cell disease?

Sickle cell anemia has two alpha and two beta chains. It consists of four dominant types.



Hemoglobin SS Disease:

It is the most common and severe kind of SCD. People with two genetic sickle cells, “S,” from each parent, develop this disease. Patients with HSS (hemoglobin sickle cell anemia) reportedly have a very high symptoms rate.

Hemoglobin SC Disease:

It is the second popular type of SCD. It develops when a person has the “C” gene from one parent and an “S” gene from another. Both HSS and HSC have the same symptoms; however, the symptoms of HSC are less critical than HSS.

HSB+ (Beta) Thalassemia

The symptom of this type of SCD is not as severe as HSS and HSC. The production of the beta-globin gene is highly affected by this disease. Due to less beta-protein production, red blood cells tend to get smaller and affect the body.

HSB 0 (Beta-zero) Thalassemia

It is the fourth and severe type of SCD. The symptoms are similar to that of HSS anemia. Like HSB+ (Beta) Thalassemia, the production of the beta-globin gene is concerned in this disease. The chances of recovery are meager.

Does it have any rare kind?

Sickle cell disease also has some rare types caught by only a few people and does not have any severe indications.
These are;

- Hemoglobin SD,
- Hemoglobin SE
- Hemoglobin SO

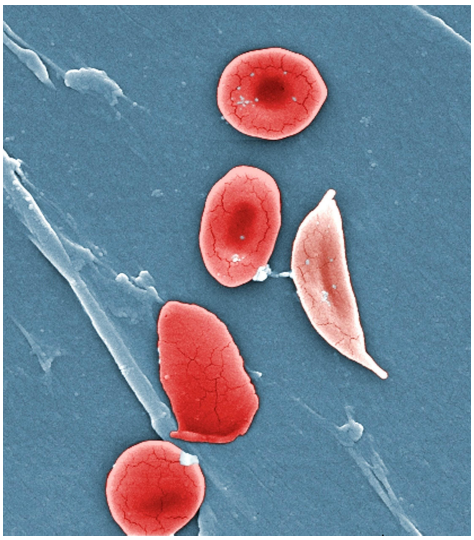
The intensity in these rare types differs from person to person. Hemoglobin is a kind of protein that helps RBCs to transport oxygen to our bodies. People with these rare diseases have one genetic sickle cell, “S,” while the other cell inherits from an unusual hemoglobin kind, which is “D,” “O”’ or “E.”

SCT:

The strange thing about this disease is that it does not show any symptoms or, to be precise unnoticeable symptoms. People live everyday life without realizing the presence of this disease. They can inherit into their children, though. It develops in people with only one sickle cell “S” from either of the parent.

What are the indications?

Despite having different types, sickle cell disease of all kinds shows the same symptoms. However, the symptoms can vary in extremity, person to person, and from time to time.



The symptoms start showing at a young age of 4 months or, in some cases, in the sixth month after birth. The symptoms are;

- Fatigue

- Anemia
- The eventual ache in arms, legs, back or chest
- Hands and feet swelling
- Weak immune system
- No growth
- Enuresis
- Joint pain
- Blood clotting
- Jaundice
- Nerve pain

Who can catch this disease?

If parents have SDC, then there are 100% chances of SDC in their children. Below are the countries where there are most cases reported are:

- Saudi Arabia
- India
- Africa
- The Mediterranean
- And some states of the USA with African American populations.

Is there any way to cure sickle cell disease?

As of today, there is no way to treat sickle cell disease. But there are treatments to minimize death rates and excessiveness of pain. There are medications available for children that they have to take for the first ten years of their lives. Medications to treat pain are provided to adults as well.

However, there is one cure, bone marrow or stem cell transplant, used to treat sickle cell disease for so long now, but the risks are very high.

. It is soft, spongy, and fatty tissue and is present in the middle of bones. This organ produces blood cells. When the healthy cells from one person (donor)’s blood are taken out and inserted in someone with weak bone marrow, the process is called bone marrow transplant.

It is necessary to have a bone marrow that is a tight fit (a close match is usually from parents or siblings), or else the situation can get worse. There are chances of severe aftermaths and even death. Bone marrow transplant takes place in case of painful condition or damage of organ among children.

Final thoughts

Sickle cell disease is one of the common diseases of red blood cells. It is a hereditary disease that can transfer from ancestors to successors by inheritance of sickle cell gene. This disease has four main types and many symptoms.

There are no proven treatments yet, but some medications are available to prevent severe pain and lower death rates. Patients can suffer from anemia, which results in fatigue and moodiness; however, a bone marrow transplant is away in case of a severe condition.
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