

## Sickle Cell Anaemia

### Why in news?

In budget 2023, Finance Minister Nirmala Sitharaman has said that the government will work in mission mode to eliminate Sickle cell anaemia (SCA) by 2047.

### What is sickle cell anaemia?

- **Disease** - Sickle cell disease (SCD) is an inherited group of blood disorders that is genetic in nature.
- It is an autosomal recessive disease or Mendelian disorder.
- **Cause** - It is caused by a *mutation in the hemoglobin- $\beta$  gene* found on chromosome 11.
- This mutation results in defective haemoglobin (Hb).
- **Characteristics** - After giving up oxygen, these defective Hb molecules cluster together resulting in formation of rod like structures.
- The red blood cells become stiff and assume sickle shape.
- **Transmission** - It is usually transferred from the parents to the child during birth i.e. both parents can be carriers of SCDs.
- **Symptoms** - Babies who are born with sickle cell anaemia might not show symptoms for many months.
- Extreme tiredness, fussiness and painfully swollen hands and feet and jaundice.
- **Effects** - The misshapen cells lack plasticity and can block small blood vessels, impairing blood flow.
- The sickle cells die prematurely, resulting in a chronic lack of red blood cells (anaemia), often called sickle-cell anaemia.
- Chronic acute pain syndromes, severe bacterial infections, and necrosis (tissue death).
- **Treatment** - Medication, blood transfusions and rarely a bone-marrow transplant are done.
- [\*Bone marrow or stem cell transplantation\*](#) which comes with several risks can be a cure.



### What steps have been taken to eliminate SCA?

- **Outreach programmes** - The Indian Council of Medical Research (ICMR) and the National Rural Health Mission (NRHM) are undertaking outreach programmes for better management and control of the disease.
- **Portal for data collation** - The Ministry of Tribal Affairs launched a portal wherein people can register themselves if they have the disease, in order to collate all information related to the disease.
- **National Health Mission guideline on Hemoglobinopathies** - It establishes services at the community level for pre-marital and pre-conception screening backed

by genetic counselling services.

- **Mission to eliminate SCA** - In the union budget of FY 2023-24, it is announced to launch a mission to *eliminate sickle cell anemia by 2047*.
- The mission entails focus on awareness creation, universal screening of people in the 0-40 years age group in affected tribal areas and counselling.
- The mission will receive funding under the National Health Mission.

## References

1. [The Hindu |How is India addressing sickle cell anaemia](#)
2. [Medicoverhospitals | Sickle cell anaemia](#)

