

# CSB IAS ACADEMY

TOPIC OF THE DAY (DATE: 05.01.2024)

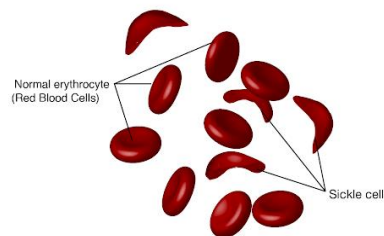
## SICKLE CELL ANAEMIA

### WHY IN NEWS?

More than 1 crore people have been screened for Sickle Cell Disease (SCD) under the National Sickle Cell Anaemia Elimination Mission.

### What is Sickle Cell Anaemia?

- Sickle cell disease (SCD) is a group of inherited (genetic) red blood cell disorders.
- Red blood cells (RBCs) contain hemoglobin, a protein that carries oxygen. Healthy red blood cells are round, and they move through small blood vessels to carry oxygen to all parts of the body. In SCD, the hemoglobin is abnormal, which causes the RBCs to become hard and sticky and look like a C-shaped farm tool called a "sickle."
- It is transmitted by parents carrying a defective 'beta globin' gene. The sickle cells die early, which causes a constant shortage of RBCs.
- When they travel through small blood vessels, they get stuck and clog the blood flow. This can cause pain and other serious complications (health problems) such as infection, acute chest syndrome and stroke.



### Sickle Cell Diseases in Tribal: A serious health challenge for India

- As per Census 2011, India has an 8.6% tribal population which is 67.8 million across the Indian states. The MoHFW tribal health expert committee report has listed sickle cell disease as one of the 10 special problems in tribal health that affect the tribal people disproportionately.
- In **13 states of the country, namely Rajasthan, Gujarat, Madhya Pradesh, Chhattisgarh, Jharkhand, West Bengal, Odisha, Telangana, Andhra Pradesh, Tamil Nadu, Kerala, Karnataka, and Maharashtra, there is a high prevalence of this disease**, and in four states of the country, namely Bihar, Assam, Uttarakhand, and Uttar Pradesh, there is a partial prevalence of sickle cell disease.
- The prevalence of sickle cell carriers among different tribal groups varies from 1 to 40 per cent. Madhya Pradesh has the highest load.
- In Maharashtra, the sickle gene is widespread in all the eastern districts, also known as the Vidarbha region, in the Satpura ranges in the north and in some parts of Marathawada. The prevalence of sickle cell carriers in different tribes varies from 0 to 35 per cent. The tribal groups with a high prevalence include the Bhils, Madias, Pawaras, Pardhans and Otkars.
- In Gujarat, the Dhodia, Dubla, Gamit, and Naika tribes have a high prevalence of SCDs.
- Tribal population in the Wayanad district of Kerala was screened, followed by genetic counselling where carriers were advised not to marry carriers.

# CSB IAS ACADEMY

## Treatment

- SCA is a genetic disorder, making complete “elimination” a challenge that requires a major scientific breakthrough. The only cure comes in the form of gene therapy and stem cell transplants — **both costly and still in developmental stages.**
- **Gene Therapy:** The **DNA inside the haemoglobin gene is edited** to stop the disease.
- **Stem cells Transplant:** the bone marrow affected by sickle cell anaemia is replaced with healthy bone marrow from a donor.
- **Blood Transfusion:** **RBCs are removed from donated blood** and given to a patient, but challenges include a scarcity of donors, fears around safe supply of blood, risk of infection etc.

## Initiatives by the Government of India to tackle Sickle Cell Anaemia

- The Indian Council of Medical Research and the National Rural Health Mission in different States are undertaking outreach programmes for better management and control of the disease. The Ministry of Tribal Affairs launched a portal wherein people can register themselves, in order to collate all information related to SCA among tribal groups.
- In 2018, the Government of India launched the AMB strategy with the target to reduce anaemia in the vulnerable age groups such as women, children and adolescents.
- AMB is based on a **life cycle approach, providing preventive and curative mechanisms through a 6X6X6 strategy** including six target beneficiaries, six interventions and six institutional mechanisms for all stakeholders to implement the strategy.
- In the Budget, the Union Health Minister said the government plans to distribute “special cards” across tribal areas and the mission will receive funding under the National Health Mission.
- The mission will entail awareness creation, universal screening of seven crore people in the age group of 0-40 years in effective tribal areas and counselling through collaborative efforts of central ministries and State governments.

## About National Sickle Cell Anaemia Elimination Mission:

- It was **announced as part of the Union Budget 2023.**
- **Vision: Eliminate sickle cell disease (SCD) as a public health problem in India before 2047.**
- The overall aim is to enable access to affordable and quality health care to all SCD patients, and to lower the prevalence through **awareness, change of practices and screening interventions.**
- The mission will entail awareness creation, **universal screening of seven crore people in the 0-40 years age group in affected tribal areas and counselling** through collaborative efforts of central ministries and state governments.
- **Initially, the focus shall be on 17 states with higher prevalence of SCD viz.,** Gujarat, Maharashtra, Rajasthan, Madhya Pradesh, Jharkhand, Chhattisgarh, West Bengal, Odisha, Tamil Nadu, Telangana, Andhra Pradesh, Karnataka, Assam, Uttar Pradesh, Kerala, Bihar and Uttarakhand.