1. Preterm Birth

Why in News?

- Indian scientists working in the Garbh-Ini program have recently identified 19 genetic markers associated with preterm birth, a major cause of Neonatal deaths (deaths among live births during the first 28 completed days of life) and complications globally.

Highlights

- The identification of genetic markers associated with preterm birth could help in predicting high-risk pregnancies and monitoring them closely, leading to improved maternal and neonatal outcomes.
- Preterm birth, also known as premature birth, refers to the birth of a baby before the completion of 37 weeks of gestation. There are sub-categories of preterm birth, based on gestational age:
- Extremely preterm (less than 28 weeks)
- Very preterm (28 to 32 weeks)
- Moderate to late preterm (32 to 37 weeks).
- It is a significant public health issue, especially in India and Southeast Asia, and is associated with delayed mental and physical development in infants and increased risks of diseases in adulthood.
- Globally, one in every 10 births is preterm.
- Also, of all babies born annually in India, about 13% are born preterm. Globally, India accounts for 23.4% of preterm births.
- Genetic markers, also known as DNA markers or genetic variants, are specific sections of DNA that are associated with particular traits, characteristics, or conditions.
- Genetic markers can be either DNA sequences or specific variations in the DNA sequence, such as single nucleotide polymorphisms (SNPs), which are the most common type of genetic marker
- They are used in genetics research and clinical practice to identify and study genetic variations that may be linked to diseases, disorders, or other biological traits.
- These SNPs are known to regulate important biological processes such as inflammation, apoptosis, cervical ripening, telomere maintenance, selenocysteine biosynthesis, myometrial contraction, and innate immunity.