What is Gait analysis?

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In news– For the first time in the history of Kolkata Police, cops are going to apply the 'Gait analysis' system in connection with the investigation of a trespassing incident at Chief Minister Mamata Banerjee's house.

What is Gait analysis?

- Gait analysis is the systematic **study of animal locomotion, more specifically the study of human motion, using the eye and the brain of observers,** augmented by instrumentation for measuring body movements, body mechanics, and the activity of the muscles.
- It is **used to assess and treat individuals with conditions affecting their ability to walk.**
- It is **also commonly used in sports biomechanics to help athletes run more efficiently** and to identify posture-related or movement-related problems in people with injuries.
- **The pioneers of scientific gait analysis were Aristotle** in *De Motu Animalium* (On the Gait of Animals) and much later in 1680, Giovanni Alfonso Borelli also called *De Motu Animalium (I et II)*.
- Its Commercial development soon followed with the emergence of commercial television and later infrared camera systems in the mid-1980s.
- In 2018, there was a new proposal for a kinetic summary measure, the Gait Kinetic Index.

Factors & Parameters-

The gait analysis is modulated or modified by many factors, and changes in the normal gait pattern can be transient or permanent. The factors can be of various types:

- Extrinsic: such as terrain, footwear, clothing, cargo

- Intrinsic: sex, weight, height, age, etc.
- Physical: such as weight, height, physique
- Psychological: personality type, emotions
- Physiological: anthropometric characteristics, i.e., measurements and proportions of body
- Pathological: for example trauma, neurological diseases, musculoskeletal anomalies, psychiatric disorders

The parameters taken into account for the gait analysis are as follows:

- Step length, Stride length, Cadence , Speed, Dynamic base, Progression line, Foot angle, Hip angle, Squat performance.