Aspirin to Prevent Cataract

Recently, scientists from the Institute of Nano Science & Technology (INST) have developed nanorods from the Non-Steroidal Anti-Inflammatory Drug (NSAID) Aspirin to prevent cataracts in an economical and less complicated way.

- **Aspirin** is a popular medication used to reduce pain, fever, or inflammation and now it has been found to be an effective non–invasive small molecule-based nanotherapeutics against cataract.
- **INST** is an **autonomous institute** under the Department of Science & Technology, Government of India.

Cataract:

- It is a major form of blindness that occurs when the structure of crystallin proteins that make up the lens in human eyes deteriorates.
- Such deterioration causes damaged or disorganised proteins to aggregate and form a milky blue or brown layer, which ultimately affects lens transparency.
- As with aging and under various conditions, the lens protein crystallin aggregates to form opaque structures in the eye lens, which impairs vision and causes cataract.
- Thus, prevention of the formation of these aggregates as well as their destruction in the early stage of disease progression is a major treatment strategy for cataracts.

Usage of Aspirin:

- The scientists have used the **anti-aggregation ability of self-build aspirin nanorods** as an effective non –invasive small molecule-based nanotherapeutics against cataract.
- It prevents the protein aggregation through biomolecular interactions, which convert it into coils and helices and consequently fail to aggregate.

Significance:

Aspirin nanorods due to their nano-size are expected to enhance bioavailability, improve drug loading, lower toxicity, etc. Hence, **the delivery of the aspirin nanorods as eye drops** is going to serve as an effective and viable option to treat cataract non-invasively. It is easy to use and a low-cost alternative nonsurgical treatment method and will benefit patients in developing countries who cannot access expensive cataract treatments and surgeries.