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.