Inherited Retinal Diseases (IRDs)

Why in News?

According to a recent study, there is a higher prevalence of Inherited Retinal Diseases (IRDs) situation in India.

- **IRDs** – It is a ***genetic disorder***, a change or a variant, in one or more genes that contribute to proper retinal function.
- **Genetic mutations** – It stems from *mutations in more than 300 genes* responsible for the function of the retina, the light-sensitive tissue at the back of the eye.
- It varies significantly across different communities, and it is difficult to identify common mutations.
- **Impacts** – It ***affects the gene's ability*** to do its job properly.
- The mistake gene doesn't make a protein and cells in the retina degenerate and cause vision loss.
- **Vulnerables –** It affects individuals of *all ages*.

According to the World Health Organization (WHO), more than 2.2 billion people worldwide experience some form of vision impairment.

- **Causes** – Lose sight shortly after birth
  - Gradual deterioration over time
  - Progressive vision loss
  - Often resulting in blindness.
- **Treatment - Gene therapy** – It is for blindness caused by mutations in the *RPE65* genes and treat various inherited eye disorders.
- **RNA-based therapies** – To restore protein production in retinal cells without altering the underlying DNA.
- Treat retinal degenerative diseases caused by single-point mutations.

Studies have revealed significantly higher prevalence, with 1 in 372 individuals in rural South India, 1 in 930 in urban South India, and 1 in 750 in rural Central India affected by these conditions.

References

1. The Hindu| IRDs Treatment & Precision Therapeutics
2. Prevent Blindness| Inherited Retinal Diseases (IRDs)



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