

## Cathepsin B

*Prelims: Current events of National and International Importance | Health*

### Why in News?

*Researchers at the National Institute of Animal Biotechnology (NIAB) have made a significant discovery that could lead to new strategies for extending female fertility.*

- **Recent Findings** - The team has uncovered a molecular clue that appears to slow down reproductive aging.
- Using both live mouse models and cultured goat ovaries, they found that reducing the activity of a cellular protein called 'Cathepsin B' (Cat B) helps preserve the ovarian reserve.
- **Ovarian reserve** - It is the finite pool of egg cells (oocytes) that female mammals are born with.
- Unlike sperm, these crucial egg cells cannot be regenerated.
- **Declining factors** - Over time, the quantity and quality of the eggs naturally decline because of oxidative stress, inflammation, and general cellular wear, and it accelerates with age.
- **Process** - 'Cat B,' a protein-degrading enzyme, seems to be a key driver of this decline.
- By lowering its levels, the egg loss may be delayed, effectively extending fertility naturally.
- For farmers, a simple intervention to extend the reproductive lifespan of livestock could
  - Improve herd productivity,
  - Reduce stray cattle populations, and
  - Support the incomes of smallholder farmers.
- **Advantages** - It navigates the twin challenges of rural sustainability and reproductive health.

### Reference

[The Hindu | 'Cathepsin B' \(Cat B\)](#)