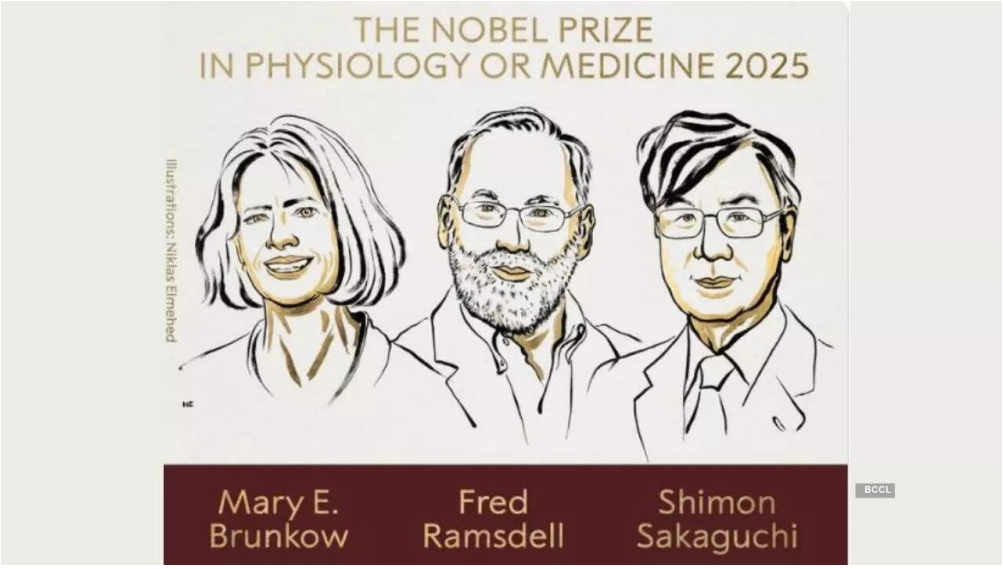
Nobel Prize in Physiology or Medicine 2025

Prelims: *Current events of national and international importance | Awards*

- The scientists were awarded for their discoveries concerning ***peripheral immune tolerance.***
- It explains how the immune system attacks hostile infections, but not the body's own cells.
- **Awarded to -** Mary E. Brunkow, Frederick J. Ramsdell and Shimon Sakaguchi.
- **Given by -** Karolinska Institutet.
- **Prize money -** The winners share a prize fund worth 11m Swedish kronor (£870,000).
- **Purpose -** The scientists discovered how a special group of immune cells, called regulatory T cells (Tregs), act as the body’s internal “peacekeepers.”
- These cells ensure that the immune system attacks harmful invaders like viruses and bacteria, but leaves healthy cells unharmed.
- Central to this process is a gene known as **FOXP3**, which acts as a switch that helps Tregs develop and function properly.
- When this gene malfunctions, the immune system can lose control and begin attacking the body’s own tissues, leading to diseases like type-1 diabetes, lupus, multiple sclerosis, and rheumatoid arthritis.
- The discoveries have also led to the development of potential medical treatments that are now being evaluated in clinical trials.
- The hope is to be able to treat or cure autoimmune diseases, provide more effective cancer treatments and prevent serious complications after stem cell transplants.



Reference

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