Tetanus & Adult Diphtheria (Td) Vaccine

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Why in News?

Recently, the Union Health Minister launched the indigenously manufactured Td vaccine in Kasauli.

- Td vaccine offers ***protection against two diseases – Tetanus and Diphtheria.***
- **Aim –** To minimise side effects in older children and adults, compared to the high-dose version (D) used for infants.

The diphtheria disease is caused by the same bacteria (Corynebacterium diphtheriae) across all ages.

- **Component –** Contains Tetanus antigen and a ***lower concentration of diphtheria antigen (d).***
- **Developed by –** Central Research Institute (CRI), Himachal Pradesh.
- **Coverage –** Td Vaccine introduced for supply ***under the Universal Immunisation Programme (UIP).***
    - UIP covers 11 vaccines against 12 diseases.
- **Benefits – Dual Protection –** Protects against both tetanus and diphtheria, unlike Tetanus Toxoid (TT).
- **Diphtheria Control –** Prevents diphtheria resurgence and *maintains long-term immunity* after childhood Diphtheria, Pertussis, Tetanus (DPT) vaccination.
- **Applicability –** Safe for pregnant women and older adults.
- **Recommendation –** The WHO recommended replacing TT with Td in 2006.
- The National Technical Advisory Group on Immunisation (NTAGI), Ministry of Health & Family Welfare (MoHFW), recommended replacing TT with Td in India’s immunisation programme for all age groups, including pregnant women.

- *133 countries have replaced TT with the Td vaccine.*

Tetanus Toxoid (TT) Vaccine

- The TT vaccine contains the inactivated tetanus toxin (tetanus toxoid) of Clostridium tetani.
- **Immune Action –** Stimulates the immune system to produce antibodies that neutralise tetanus toxins.
- **Beneficiaries –** Used for infants, children, adults, pregnant women, and injured persons.
- **Neonatal Prevention –** Immunisation of women of childbearing age to prevent neonatal tetanus.
- **Booster –** Given every 10 years or after high-risk injury if last dose was more than 5 years ago.

Diphtheria & Tetanus

Features	Tetanus	Diphtheria
Caused by	• *Clostridium tetani* (Bacteria).	• *Corynebacterium diphtheriae* (Bacteria).
Transmission	• Enters the body through cuts or wounds (not contagious).	• Spreads from person to person.
Symptoms	• Painful tightening of muscles all over the body. • Serious problems like inability to open mouth, trouble swallowing and breathing, or death.	• Affects the upper respiratory tract and, less often, the skin. • Thick covering in the back of the throat. • Can cause breathing problems, paralysis, heart failure and death in severe cases.
Treatment	• It includes hospital care and immediate treatment with medicine called human tetanus immune globulin (TIG). • Tetanus vaccination is needed since recovery doesn't give natural immunity, so reinfection is possible.	• Treatment for diphtheria includes antibiotics to get rid of the bacteria.

Prevention	• A vaccine-preventable disease can be given in combination with other vaccines, such as Diphtheria and pertussis (whooping cough).	• A vaccine-preventable disease can be given in combination with other vaccines such as tetanus, pertussis, hepatitis B, Haemophilus influenzae b and polio.

- **India's Disease burden – Tetanus –** *India eliminated maternal and neonatal tetanus in 2015*, but constant vaccination is still required to prevent sporadic cases from soil-borne spores.
- **Diphtheria –** According to the National Health Profile (NHP), diphtheria cases in India surged from 1,586 in 2020 to 3,677 in 2021, with 10 states accounting for 84% of the burden.
    - This resurgence was noticed among older children and adolescents due to waning immunity.

Reference

1. PIB | Tetanus & Adult Diphtheria (Td) Vaccine
2. WHO | Tetanus
3. WHO | Diphtheria

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