



Corbevax Covid-19 Vaccine

Why in News

India has placed an advance order to block 300 million doses of a new [Covid-19](#) vaccine, **Corbevax**.

Key Points

▪ Corbevax:

- **About:** It is India's indigenous **Covid-19 vaccine** which is currently **undergoing [Phase 3 clinical trials](#)**.
- **Working:**
 - It is a **"recombinant protein sub-unit"** vaccine.
 - It means it is made up of a **specific part of SARS-CoV-2** - the **spike protein** on the virus's surface.
 - The **spike protein allows the virus** to enter the cells in the body so that it can replicate and cause disease.
 - However, when this **protein alone is given to the body**, it is not expected to be harmful as the rest of the virus is absent.
 - The body is expected to **develop an immune response** against the injected spike protein.
 - Therefore, when the real virus attempts to infect the body, it will already have an immune response ready that will make it unlikely for the person to fall severely ill.

▪ Difference between Corbevax and Other Covid-19 Vaccines:

- They are either [mRNA vaccines](#) (Pfizer and Moderna), **viral vector vaccines** ([Covishield](#) and [Sputnik V](#)) or [inactivated vaccines](#) (**Covaxin**, Sinovac-CoronaVac and Sinopharm's Vero Cell).
- **Viral vector and mRNA vaccines use a code to induce our cells** to make the spike proteins against which the body has to build immunity.
 - In the case of Corbevax, protein itself is given.
 - **mRNA vaccines** work by using messenger RNA (mRNA), which is the molecule that essentially puts DNA instructions into action. Inside a cell, mRNA is used as a template to build a protein.
 - **Viral vector vaccines** use a modified version of a different virus (the vector) to deliver important instructions to our cells.
- **Inactivated vaccines include killed particles of the whole SARS-CoV-2 virus**, attempting to target the entire structure of the virus.
 - Corbevax, like the mRNA and viral vector Covid-19 vaccines, targets only the spike protein, but in a different way.

Other Types of Vaccine

▪ Live-attenuated Vaccines:

- Live vaccines use a **weakened (or attenuated) form of the germ** that causes a disease.
- Because these vaccines are so **similar to the natural infection** that they help prevent, they create a strong and long-lasting immune response.
- The limitation of this approach is that these vaccines usually **cannot be given to people with weakened immune systems**.
- Live vaccines are used against: [Measles](#), mumps, rubella (MMR combined vaccine), **Rotavirus**, **Smallpox** among others.

▪ Subunit, recombinant, polysaccharide, and conjugate Vaccines:

- They **use specific pieces of the germ** - like its protein, sugar, or capsid (a casing around the germ). They give a very strong immune response.
- They can also be used on people with weakened immune systems and long-term health problems.
- These vaccines are used to protect against: **Hib** (Haemophilus influenzae type b) disease, [Hepatitis B](#), **HPV (Human papillomavirus)**, [Pneumococcal disease](#) among others.

▪ Toxoid Vaccines:

- Toxoid vaccines **use a toxin made by the germ that causes a disease**. Toxoid vaccines are used to protect against: **Diphtheria, Tetanus**.

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