

## Needle Free Vaccines for Covid-19

### Why in news?

Authorities in Shanghai have started administering the world's first inhalable vaccine as a booster dose for previously vaccinated people against Covid-19.

### What is the inhalable vaccine about?

- The inhalable vaccine has been developed by the China's CanSino Biologics Inc. as an aerosol version of its one-shot adenovirus vaccine, which uses a relatively harmless cold virus.
- The vaccine is a mist that is sucked in through the mouth.
- After slowly inhaling, people hold their breath for 5 seconds, with the entire procedure completed in 20 seconds.
- The vaccine administered as a mist is said to stop the virus before it spreads to the rest of the respiratory system.
- However, this would partly depend on the size of the droplets.
- The immunologist from India believes larger droplets would train defences in areas of the mouth and neck while tiny ones would penetrate further into the body.

### How about the case with India?

- **iNCOVACC** - Recently, India's national drug regulator (CDSCO) cleared Hyderabad-based Bharat Biotech's iNCOVACC.
- It is the country's first intranasal Covid-19 vaccine for emergency use in unimmunised adults.
- iNCOVACC uses a modified chimpanzee adenovirus.
- It will be delivered through the nasal route which would potentially trigger an immune response in the mucosal membrane.
- It has been designed to not only protect against infection but also reduce transmission of the virus.
- The vaccine is **not yet** part of India's national immunisation programme.
- **ZyCoV-D** - ZyCoV-D is the world's first needle-free plasmid DNA vaccine.
- It is an intradermal vaccine that is applied through the skin, but using the PharmaJet needle-free applicator.
- It is developed by Ahmedabad-based pharmaceutical major, Cadila Healthcare Ltd (Zydus Cadila).
- In 2021, the three-dose vaccine received regulatory nod for Emergency Use in adolescent (above 12 years of age) and adult population in India.

### What are the pros and cons of needle free vaccines?

- **Benefits**- The needle-free vaccine would

- Be easy to administer
- Cut down on the dependence on trained personnel
- Persuade those who do not like to be injected to get the vaccine
- Make mass immunisation more accessible
- **Concerns**- The effectiveness of non-needle vaccines is yet to be fully tested.
  - For some flu vaccines, this route of delivery has not been very successful so far

## References

1. [The Indian Express | Can needle-free work?](#)
2. [The Hindu Businessline | ZyCov-D](#)
3. [Livemint | China's needle-free inhalable Covid vaccine](#)

## Quick facts

### Central Drugs Standard Control Organization (CDSCO)

- The CDSCO is the national regulatory body for pharmaceuticals and medical devices in India.
- It works under the **Ministry of Health & Family Welfare**.
- Headquarters- New Delhi
- **The Drugs & Cosmetics Act, 1940 and rules 1945** have entrusted various responsibilities to central & state regulators for regulation of drugs & cosmetics.
- Under the Drugs and Cosmetics Act, CDSCO is responsible for
  - Approval of drugs
  - Conduct of clinical trials
  - Laying down the standards for drugs
  - Control over the quality of imported drugs in the country
  - Coordination of activities of State drug control organizations by providing expert advice
- Along with state regulators, it is jointly responsible for grant of licenses of certain specialized categories of critical drugs such as blood and blood products, I.V. fluids, vaccine and sera.
- The **Drug Controller General of India (DCGI)**, which is an organ of the CDSCO, is responsible for approving and licensing of drugs and medical devices.