The Covid Booster shot

Introduction

A COVID 19 booster shot is an additional dose of a vaccine given after the protection provided by the original shot(s) has begun to decrease over time. Typically, you would get a booster after the immunity from the initial dose(s) naturally starts to wane. The booster is designed to help people maintain their level of immunity for longer.

The third dose of the coronavirus vaccine –Booster shot

A third dose of the mRNA COVID-19 vaccines (Pfizer or Moderna) is identical to the first two doses. It can help protect people with weakened immune systems who did not have a strong enough response to the first two doses of one of the mRNA vaccines. Such people can get a third dose as soon as 28 days after a second dose. The FDA has authorized, and the CDC recommends (discussed below further) that those with certain medical conditions that suppress the immune system get a third dose of the same brand of COVID-19 vaccine that they initially received.

Difference between an additional dose and a booster shot

An additional dose is administered to people with moderately to severely compromised immune systems. This additional dose of an mRNA COVID-19 vaccine is intended to improve immune-compromised people's response to their initial vaccine series. A booster shot is administered when a person has completed their vaccine series, and protection against the virus has decreased over time.

Benefits of people receiving an additional vaccine dose

An additional dose may prevent serious and possibly life-threatening COVID-19 in people who may not have responded to their initial vaccine series. In ongoing clinical trials, the mRNA COVID-19 vaccines (Pfizer-BioNTech or Moderna) have been shown to prevent COVID-19 following the two-dose series. Limited information suggests that immune-

compromised people who have low or no protection after two doses of mRNA vaccines may have an improved response after an additional dose of the same vaccine.

Risks of vaccinating individuals with an additional dose

There is limited information about the risks of receiving an additional dose of vaccine, and the safety, efficacy, and benefit of additional doses of COVID-19 vaccine in immunocompromised people continues to be evaluated.

So far, reactions reported after the third mRNA dose were similar to that of the two-dose series: fatigue and pain at injection site were the most commonly reported side effects, and overall, most symptoms were mild to moderate.

As with the two-dose series, serious side effects are rare, but may occur.

Candidates for booster

Recommendations for this booster as per the following authorities are:

- Johns Hopkins Medicine **Faculty**
- Centres for Disease Control and Prevention (CDC)
- U.S. Food and Drug Administration (FDA)

Currently offering the Pfizer-BioNTech COVID-19 vaccine booster to eligible patients.

Eligible patients are individuals who received their second dose of the Pfizer-BioNTech COVID-19 vaccine at least six months ago and meet at least one of the criteria described as having the following risk factors.

Age 18+ who work in

- First responders (e.g., healthcare workers, fire-fighters, police, congregate care staff)
- Education staff (e.g., teachers, support staff, day-care workers)
- Food and agriculture workers
- Manufacturing workers
- Corrections workers
- U.S. Postal Service workers

- Public transit workers
- Grocery store workers
- Current or former smokers

Pfizer-BioNTech vaccine recipients 65 years and older

- Older adults and 50-64 year old people with medical conditions
- *People aged 65 years and older and adults 50–64 years with underlying medical conditions should get a booster shot of Pfizer-BioNTech vaccine***.**
- People with medical conditions aged 18-49 years

(List could be updated in the future)

Food and drug administration, USA, recommendations:

*The FDA has not yet authorized a booster for those who received the Janssen/Johnson & Johnson vaccine or those who received the Moderna vaccine and who are not immunosuppressed***.**

But the following are advised(under trial):

- Receive active cancer treatment for tumors or cancers of the blood.
- Received an organ transplant and are taking medicine to suppress the immune system.
- Received a stem cell transplant within the last two years, or are taking medicine to suppress the immune system.
- Were diagnosed with DiGeorge syndrome or Wiskott-Aldrich syndrome.
- Are diagnosed with HIV and has a high viral load or low CD4 count, or are not currently taking medication to treat HIV. If you have HIV but are not sure if you fit into this category, please contact your provider for further guidance.
- Are taking drugs like high-dose steroids or other medications that may cause severe suppression of the immune system. If you are not sure if your medications severely suppress the immune system, please contact your provider for further guidance

Vaccine types for boosters :

As of date , CDC recommends only Pfizer-BioNTech as booster to selected population only who have received previous 2 shots ,6 months back, are at special risks and whose innate immunity are low.

However research on Vaccines by Cadilla, Covishield and Covaxin are underway.

Summary - Criteria for booster

It has to be remembered that Booster shots are under research as of date also only certain companies have conducted the trials and that too in certain countries.
People however who may benefit from Booster are:

So as far as booster shots are concerned, type is not ripe, but in future may become common for all. As of date if at all booster shots are to be given the type of people chosen are of the people may be considered are:

- Employees and residents at increased risk for COVID-19 exposure and transmission
- People aged 18–64 years at increased risk for COVID-19 exposure and transmission because of occupational or institutional setting may get a booster shot of Pfizer-BioNTech vaccine based on their individual benefits and risks.
  Adults aged 18–64 years who work or reside in certain settings (e.g., health care, schools, correctional facilities, and homeless shelters) may be at increased risk of being exposed to COVID-19, which could be spreading where they work or reside. Since that risk can vary across settings and based on how much COVID-19 is spreading in a community, people aged 18–64 years who are at increased risk for COVID-19 exposure and transmission because of occupational or institutional setting may get a booster shot after considering their individual risks and benefits. This recommendation may change in the future as more data become available. Hence in short as of date booster may help:

- People who live in a long-term care facility

- Is age 18 or older and work in a location that puts them at high risk of exposure to COVID-19. This includes:
- Essential workers, such as healthcare workers, teachers, day-care
- staff, and first responders
- Caregivers of an immunocompromised individual
- Individuals who live in a congregate living setting, such as a
- homeless shelter, prison, or assisted living facility

Other eligible medical conditions include, but are not limited to:

The risk of severe illness from COVID-19 increases with age, and can also increase for adults of any age with underlying medical conditions.

- Cancer
- Cerebrovascular disease, such as stroke
- Obesity
- Chronic obstructive pulmonary disease
- Diabetes mellitus, type 1 and 2
- Heart condition, such as heart failure, coronary arteries disease, or cardiomyopathies
- Chronic kidney disease
- Pregnancy and recent pregnancy

Finally in India, with so vast a population, it's difficult for the Government to complete 2 shots of Covishield and Covaxin and too up to at least 70% population to develop herd immunity.

Only after this the government might think of boosters and that too a selective group who have been vaccinated 6 months back and are at high risk, as discussed earlier with dwindling off there immunity .

We are a poor country with gross financial constraints and vaccination here is a necessecity first to prevent disease communicability and then think of 3rd booster.