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HONG KONG RED CROSS

COVID-19 Vaccines



Three different COVID-19 vaccines will be available in Hong Kong soon. While it normally takes several years to develop a vaccine, scientists across the world have worked collaboratively and rapidly to achieve the same amount of work in a few months in order to make a safe and effective vaccine available as soon as possible. This issue of "Health Express" will introduce herd immunity and the three vaccines in detail.

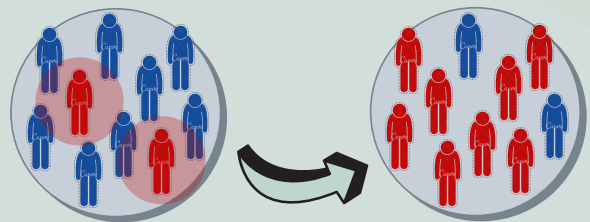


Vaccination and Herd immunity

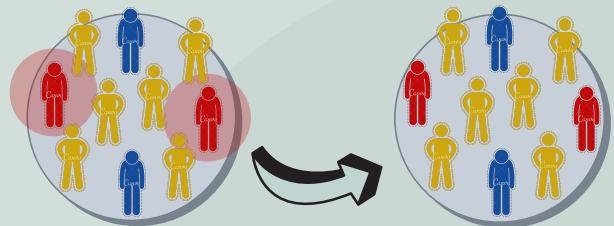
Vaccination is one of the best ways to prevent infectious diseases. Vaccines train our immune systems to create antibodies that fight disease. **Vaccinated people are protected from getting the disease and passing on the pathogen.**

Thus, those who could not receive the vaccines safely due to allergies could also be protected. Herd immunity could be achieved when a large portion of the people in the community is immune either through vaccination or immunity developed through previous infection.

No one is immunized. Disease spreads through the population:



Most of the population gets immunized. The spread of the disease is contained:



=Not immunized, but still healthy



=Not immunized, sick, and contagious



=Immunized and healthy

To achieve herd immunity against COVID-19, a substantial proportion of a population would need to be vaccinated. The percentage of people who need to be immune in order to achieve herd immunity varies with each disease. For example, herd immunity against measles requires about 95% of a population to be vaccinated. The remaining 5% will be protected by the fact that measles will not spread among those who are vaccinated. For COVID-19, the threshold is about 60-70%. **The higher the proportion of the population being vaccinated, the greater the protection from herd immunity.** Vaccination is a long-term strategy to stop the spread of COVID-19 at the moment. We shall all maintain proper personal hygiene to protect ourselves before there are enough people to achieve herd immunity.

Provider: Sinovac Biotech

Vaccine Type: Inactivated Vaccines

Examples: Poliomyelitis/Measles/Influenza/Chicken pox vaccines

Effectiveness: Unknown

Storage: 2-8°C

Pros: First-generation vaccines with mature technology used, easy to store

Cons: Lower efficacy in stimulation of the production of antibodies



Provider: AstraZeneca-Oxford

Vaccine Type: Viral vector vaccine

Examples: Hepatitis B/Pertussis vaccines

Effectiveness: ~70%

Storage: 2-8°C

Pros: Second-generation vaccines with relatively mature technology used, easy to store, efficient in stimulation of the production of antibodies

Cons: Involve genetically modified viruses (GMOs) which require a high level of technology



Provider: BioNTech-Fosun

Vaccine Type: Genetic Vaccines

Examples: N/A

Effectiveness: 95%

Storage: -70°C

Pros: Efficient in stimulation of the production of antibodies, efficient in mass production

Cons: Third-generation vaccines with new technology used, require low-temperature storage

