

Non-Communicable Diseases Watch

July 2021



NCDs and Vaccination Against COVID-19

Key Messages

- ※ People of all ages can be infected with the novel coronavirus. However, individuals with underlying chronic non-communicable diseases (NCDs) are particularly vulnerable to severe and fatal coronavirus disease 2019 (COVID-19) infection.
- ※ Vaccines are a crucial tool in reducing disease, disability and death. Studies showed high effectiveness of COVID-19 vaccines in reducing the risk of infection and preventing symptomatic illness for fully vaccinated people. Unless there is contraindication, members of the public should get vaccinated against COVID-19 to protect oneself, family and friends as well as the community.
- ※ The vast majority of population are suitable for COVID-19 vaccination. Experts recommend that any elderly who have received influenza vaccines before can safely receive COVID-19 vaccines. Elderly and individuals with chronic diseases are vulnerable to COVID-19 infection with increased mortality. Therefore, unless with contraindications, people with stable clinical conditions should receive COVID-19 vaccines as soon as possible for their personal protection. For more information about COVID-19 Vaccination Programme, including vaccination venues and making an online booking for the vaccination, please visit www.covidvaccine.gov.hk/en.
- ※ In the wake of COVID-19 pandemic, healthy living is equally important for overall health with a robust immune system. While observing the necessary precautions (such as maintaining good personal hygiene, wearing masks in public places, and reducing social contact), members of the public are urged to lead a healthy lifestyle that includes eating a balanced diet, being physically active, no smoking and refrain from alcohol consumption.
- ※ Together, we keep healthy and fight the virus!

NCDs and Vaccinated Against COVID-19

The coronavirus disease 2019 (COVID-19) pandemic continues to present challenges worldwide. While people of all ages can be infected with the novel coronavirus, individuals with underlying chronic non-communicable diseases (NCDs) are particularly vulnerable to severe and fatal COVID-19 infection (Table 1). Among COVID-19 patients, the most prevalent comorbid chronic NCDs were hypertension, diabetes, cardiovascular diseases and chronic respiratory diseases.¹ In the United States, an estimated 64% of COVID-19 hospitalisations were attributed to four conditions: diabetes, obesity, hypertension and heart failure.² A meta-analysis of patients with COVID-19 in Mainland China also found that the incidences of hypertension, diabetes and cardio-cerebrovascular diseases were 2- to 3-fold higher in intensive care unit (ICU)/severe cases than in their non-ICU/severe counterparts.³ Therefore, unless contraindicated, the World Health Organization (WHO)

recommends individuals with pre-existing chronic NCDs to receive COVID-19 vaccination for protection.⁴

Vaccines: A Cornerstone of Public Health

Vaccines are a crucial tool in reducing disease, disability and death. They work by training and preparing the body's natural defenses – the immune system – to recognise and fight against the bacteria and viruses they target. After vaccination, if the body is later exposed to those disease-causing microorganisms, the body is immediately ready to destroy them and prevent illness.⁴ Each year, vaccines save millions of lives and prevent infectious diseases ranging from acute (e.g. influenza, tetanus and measles) to chronic diseases (e.g. chronic hepatitis B) as well as some virus-related cancers (e.g. liver and cervical cancer).⁵

Table 1: NCDs and risk of severe or fatal COVID-19

Disease	Observations
Hypertension	In patients with COVID-19, those with hypertension were about 2–3 times as likely to become seriously ill and up to 3.5 times as likely to die from COVID-19 compared with those without hypertension. ^{6, 7}
Heart disease	In patients with COVID-19, those with coronary heart disease were 3.2 times, 2.3 times and 3.8 times as likely to have severe/critical COVID-19 illness, be admitted to ICU and die compared with those without coronary heart disease respectively. ⁸
Diabetes	In patients with COVID-19, those with diabetes were about 2 times as likely to have severe/critical COVID-19 illness and about 3 times as likely to die in hospital compared with those without diabetes. ^{6, 9, 10}
Cancer	Compared with COVID-19 patients without cancer, those with cancer were 76% more likely to experience severe course of illness. ¹¹ A meta-analysis of patients with COVID-19 in China observed that those with cancer were also about 3 times as likely to die from COVID-19. ¹²
Chronic respiratory diseases	In patients with COVID-19, those with chronic obstructive pulmonary disease were 4.2 times and 2.5 times as likely to be hospitalised and die from COVID-19 compared with those without chronic obstructive pulmonary disease respectively. ¹³

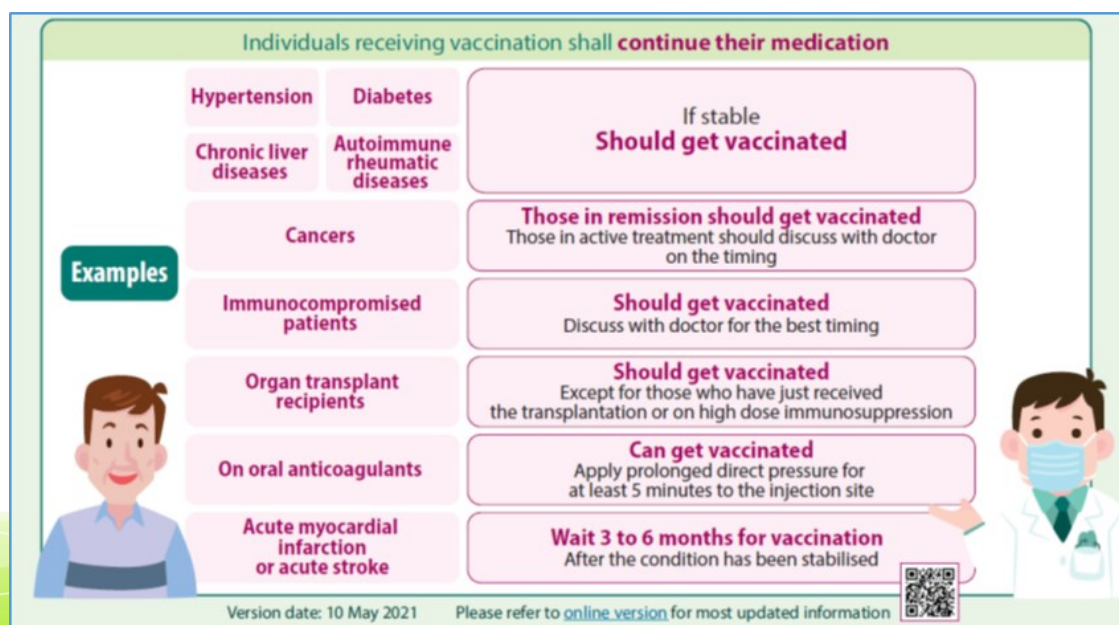
With great efforts, scientists have come up with several COVID-19 vaccines which meet the necessary criteria for safety and efficacy in preventing people from being infected, getting seriously ill or dying from the disease, including Comirnaty (BioNTech) vaccine and CoronaVac (Sinovac) that have been approved for emergency use by the WHO⁴ and the Hong Kong SAR Government.^{14, 15} To mitigate the effects of COVID-19 pandemic and protect population against the infection, one of the efforts of different health authorities is to encourage the public to receive Covid-19 vaccination, particularly those considered vulnerable. As COVID-19 vaccines are newly developed, it is understandable that some people may show vaccine hesitancy.¹⁶ In general, the benefits of receiving COVID-19 vaccines outweigh the risks for the vast majority of people.¹⁷ Studies showed high effectiveness of COVID-19 vaccines in reducing the risk of infection and preventing symptomatic illness for fully vaccinated people.^{18, 19} Among individuals with specific prevalent chronic illnesses, study of 1.4 million patients in Israel showed that the vaccine (BioNTech) was 93–96% effective against symptomatic infection for overweight and obese patients, 86% for patients with

diabetes, 80% for both patients with heart disease and chronic kidney disease.^{18, 20} Using the number of COVID-19 patients requiring mechanical ventilation as a proxy for severe disease, the vaccine was also effective in protecting against severe cases of COVID-19.²¹ As of 25 June 2021, more than 2.62 billion COVID-19 vaccine doses have been administered worldwide.²²

Concise Guide for COVID-19 Vaccination

The vast majority of population are suitable for COVID-19 vaccination. Experts recommend that any elderly who have received influenza vaccines before can safely receive COVID-19 vaccines.²³ Elderly and individuals with chronic diseases are vulnerable to COVID-19 infection with increased mortality. Therefore, unless with contraindications, people with stable clinical conditions should receive COVID-19 vaccines as soon as possible for their personal protection (Figure 1). They are encouraged to consult doctors about COVID-19 vaccination and the best timing for vaccination.^{24, 25}

Figure 1: Examples of COVID-19 vaccination for individuals with chronic diseases²⁵



Like any vaccine, COVID-19 vaccines can cause side effects. In general, common side effects like fever, soreness, redness, or swelling at the injection site which are usually mild and temporary. Some may experience more severe, but generally rare, adverse effects. To reduce the pain and discomfort at the injection site, you may apply a clean, cool, wet washcloth over the area and gently exercise your arm. To reduce discomfort from mild fever, drink plenty of fluids. If side effects do not seem to be going away in a few days or are worrying you, contact your doctor or other healthcare professionals (e.g. pharmacists, nurses and Chinese medicine practitioners) and make sure you tell them about your vaccination details and show them your vaccination record if available. Healthcare professionals would offer advice, manage your condition and make proper assessment for reporting to the Department of Health (DH) any adverse event following vaccination that is deemed medically significant.²⁶ For more information about COVID-19 Vaccination Programme, please visit www.covidvaccine.gov.hk/en.

Coping with COVID-19 by Leading a Healthy Lifestyle

In the wake of COVID-19 pandemic, healthy living is equally important for overall health with a robust immune system. Of note, alcohol consumption could weaken the immune system and impair mucociliary clearance in the airway, making the drinkers more susceptible to infections including pneumonia.²⁷ In patients with COVID-19, studies showed that current smokers were approximately twice as likely to experience severe or critical COVID-19 as former or never-smokers.²⁸ Compared with those who were consistently meeting physical activity guidelines (i.e. having engaged in

at least two and a half hours of moderate-to-vigorous physical activity per week), people who were consistently inactive were about 2.3 times, 1.7 times and 2.5 times as likely to be hospitalised, admitted to ICD and die from COVID-19 respectively.²⁹ Moreover, those with the most unfavourable lifestyle had about 4 times the risk for COVID-19 hospitalisation compared to persons with the most optimal lifestyle.³⁰ Thus, members of the public are urged to lead a healthy lifestyle that includes eating a balanced diet, being physically active, no smoking and refraining from alcohol consumption. For more information about healthy living, please visit the Change for Health website of DH at www.change4health.gov.hk.

To keep the COVID-19 at bay and return our lives to normal, we all have a responsibility and role to play. DH appeals to members of the public to take ownership of their own health. Apart from leading a healthy life, please observe the necessary precautions (such as maintaining good personal hygiene, wearing masks in public places, and reducing social contact) and get vaccinated against COVID-19 to protect oneself, family and friends as well as the community. Together, we keep healthy, get vaccinated and fight the virus!

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Can I Have COVID-19 Vaccination?

Individuals with chronic NCDs are vulnerable to COVID-19 infection with increased severity and mortality. Therefore, unless with contraindications, they are encouraged to receive COVID-19 vaccination for protection. In general, there are 3 important considerations whether to receive vaccination, including medical condition, the best time for vaccination, and allergic history.

Medical condition	The best timing for vaccination	Allergic history
If stable, proceed 	If recovered, in remission, or disease is already under control, proceed 	Be cautious for the 3 conditions below  • Suspected allergic reaction to prior COVID-19 vaccination; • History of anaphylaxis; • Severe immediate (within 1 hour) allergic reaction to multiple food or more than 1 class of drugs Should consult your doctor

Individuals receiving vaccination shall **continue their medication**

Version date: 18 May 2021 Please refer to [online version](#) for most updated information 

For more details about the COVID-19 Vaccination Programme, including vaccination venues and making an online booking for the vaccination, please visit the designated website at www.covidvaccine.gov.hk/en.

Non-Communicable Diseases (NCD) WATCH is dedicated to promote public's awareness of and disseminate health information about non-communicable diseases and related issues, and the importance of their prevention and control. It is also an indication of our commitments in responsive risk communication and to address the growing non-communicable disease threats to the health of our community. The Editorial Board welcomes your views and comments. Please send all comments and/or questions to so_dp3@dh.gov.hk.

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