

## Diabetes and COVID-19

### Key Messages

- ※ Coronavirus disease 2019 (COVID-19) has greater impact upon people with underlying non-communicable diseases (NCDs), including diabetes. If infected, patients with diabetes are more likely to become seriously ill or even die. Among COVID-19 patients, individuals with diabetes were about 2–3 times as likely to become seriously ill or die from COVID-19 compared with those without diabetes.
- ※ In Hong Kong, the Population Health Survey (PHS) 2014/15 of the Department of Health (DH) observed that the overall prevalence of diabetes among non-institutionalised persons aged 15–84 was 8.4% (10.5% for males; 6.4% for females).
- ※ Members of the public are encouraged to take ownership of their own health and lead a healthy lifestyle to prevent diabetes as well as develop a robust immune system to reduce the risk of severe COVID-19.
- ※ Diabetic patients can seek advice from their family doctor to learn as much as they can about the disease, be proficient in necessary self-care skills and take an active part in self-monitoring (such as monitoring blood glucose levels, blood pressure and body weight), as well as comply with medical treatment and dietary advice.
- ※ To halt the rise of diabetes, we can contribute by leading a healthy lifestyle. To keep the COVID-19 at bay, we all have a role to play. Together, we stay healthy and fight the virus!

## Diabetes and COVID-19

Coronavirus disease 2019 (COVID-19) has emerged as a disease of global public health concern. People of all ages can be infected by the novel coronavirus, with symptoms varying from person to person and ranging from none or mild to severe. Moreover, the disease has greater impact upon people with underlying non-communicable diseases (NCDs), including diabetes. If infected, patients with diabetes are more likely to become seriously ill or even die.<sup>1</sup>

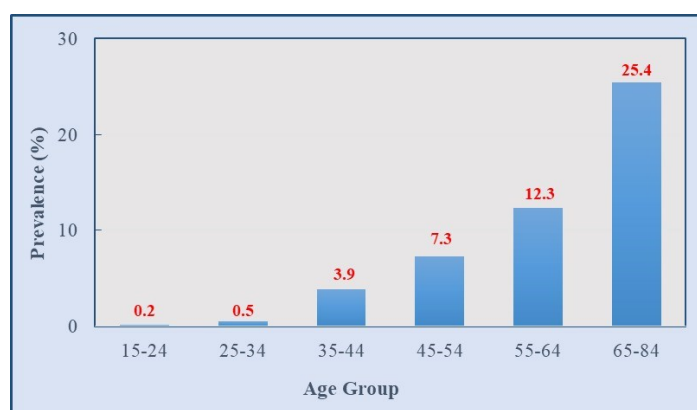
### Nexus of Diabetes and COVID-19

Diabetes and COVID-19 are closely connected and act synergistically on morbidity and mortality.<sup>2</sup> Possible mechanisms that the risk of COVID-19 and its complications increase in individuals with diabetes may include impaired immunity, dysregulated inflammatory responses, coagulopathy and thrombosis, tissue damages or organ injuries.<sup>1-3</sup> By damaging the cells responsible for regulating blood sugar level, COVID-19 can lead to worsening of insulin secretion and resistance in people with pre-existing diabetes.<sup>2</sup> Not only does COVID-19 have the ability to worsen metabolic control in patients with diabetes, it may also trigger new onset of diabetes.<sup>4</sup> Among COVID-19 patients, individuals with diabetes were about 2–3 times as likely to become seriously ill or die from COVID-19 compared with those without diabetes.<sup>5-7</sup> Poorer prognosis among people with diabetes is also likely consequences of comorbidities, in particular hypertension, cardiovascular diseases and renal diseases.<sup>1, 8</sup> Besides, COVID-19 and diabetes share a common set of prominent risk factors, including smoking and obesity. Studies showed that smoking could double the risk of severe COVID-19.<sup>9</sup> Among patients with COVID-19, patients with obesity were 74% more likely to be admitted to intensive care unit and 48% more likely to die compared with those who were not obese.<sup>10</sup>

### Burden of Diabetes in Hong Kong

In Hong Kong, diabetes is a significant public health issue. The Population Health Survey (PHS) 2014/15 of the Department of Health (DH) observed that the overall prevalence of diabetes among non-institutionalised persons aged 15–84 was 8.4% (10.5% for males; 6.4% for females). As shown in Figure 1, the prevalence of diabetes increased with age from 0.2% for persons aged 15–24 to 25.4% for those aged 65–84.<sup>11</sup> It is noteworthy that up to 54% of diabetic cases were previously undiagnosed but detected during health examination provided under the PHS 2014/15.<sup>11</sup> The full extent of populations who are at risk of worse outcomes of COVID-19 because of diabetes is probably under-estimated. As most diabetic patients may not have any symptoms at all, people with risk factors for diabetes (such as having a family history of diabetes, aged 45 or older, being overweight or obese, etc<sup>12</sup>) are recommended to discuss with their family doctor and consider to receive appropriate check-ups to avoid delay in diagnosis or treatment.

**Figure 1: Prevalence of diabetes (including those with no known history of diabetes and previously diagnosed diabetes) among non-institutionalised persons aged 15–84 by age group**



Source: Population Health Survey 2014/15, Department of Health.

## Prevention and Control of Diabetes in the Wake of the COVID-19 pandemic

The close association between diabetes and COVID-19 severity indicates that NCD prevention and control ought to be an integral part of the public health response to COVID-19.<sup>13</sup> In 2018, the Government launched “Towards 2025: Strategy and Action Plan to Prevent and Control Non-communicable Diseases in Hong Kong” (SAP) with a list of committed actions and 9 local NCD targets to be achieved by 2025, including halting the rise in diabetes.<sup>14</sup> To know more about the

SAP, please visit the Change for Health website [www.change4health.gov.hk/en/saptowards2025](http://www.change4health.gov.hk/en/saptowards2025).

Even in the fight against COVID-19 pandemic, NCD prevention and control remains a priority for action. DH appeals to members of the public to take ownership of their own health and lead a healthy lifestyle (Box 1) to prevent diabetes as well as develop a robust immune system to reduce the risk of severe COVID-19.

### Box 1: Health Tips for prevention and control of diabetes

**Maintain an optimal body weight and waist circumference.** Chinese adults should aim to maintain a body mass index (BMI) between 18.5 and 22.9. Irrespective of BMI, men should keep their waist circumference below 90 cm (~35.5 inches) and women should keep theirs below 80 cm (~31.5 inches)

**Eat a balanced diet.** Include the five basic food groups, i.e. grains; fruit; vegetables; meat, fish, egg and alternatives; milk and alternatives. Limit fats, salt and sugars intake. Drink enough water. For diabetes-friendly recipes, please visit the website at [www.fhb.gov.hk/pho/english/resource/diabetes-friendly\\_recipes.html](http://www.fhb.gov.hk/pho/english/resource/diabetes-friendly_recipes.html).

**Be physically active.** Regular exercise improves insulin sensitivity and enhances glucose uptake by the muscles, which in turn helps regulate blood glucose level and reduce the risk of diabetes. Physical activity can also boost immune system and defend the body from infections including respiratory infections. Adults should engage in at least 150 minutes of moderate-intensity physical activity, or at least 75 minutes of vigorous-intensity physical activity, or an equivalent amount per week. Children and adolescents aged 5–17 should do at least 60 minutes of moderate- to vigorous-intensity physical activity daily. For all children, adolescents and adults, do muscle-strengthening activities two or more days per week. While at home, doing home-based exercises and household chores could be alternatives for maintaining an active lifestyle. Diabetic patients can seek advice from their family doctor regarding participation in physical activity.

**Do not smoke.** Smoking is a risk factor for insulin resistance and diabetes. Smokers and members of the public can visit [www.livetobaccofree.hk](http://www.livetobaccofree.hk) or call the Quitline 1833 183 for information on quitting and for smoking cessation services.

**Avoid alcohol consumption.** Alcohol can affect carbohydrate metabolism and raise blood glucose level. Besides, alcohol is extremely calorific with 7 kilocalories per gram. These additional calories contribute to increased body fat and weight gain. More important, alcohol weakens the immune system, undermining the body’s ability to fight off infectious diseases, including COVID-19. Drinkers are encouraged to reduce drinking and diabetes patient should not drink at all.

For people with diabetes, self-care is the cornerstone of optimal diabetes management. Diabetic patients can seek advice from their family doctor to learn as much as they can about the disease, be proficient in necessary self-care skills and take an active part in self-monitoring (such as monitoring blood glucose levels, blood pressure and body weight), as well as comply with medical treatment and dietary advice. They may also engage themselves with diabetes self-management education programmes with family doctor or other health care providers. For more information, please visit [www.fhb.gov.hk/pho/english/resource/files/e\\_diabetes\\_care\\_patient.pdf](http://www.fhb.gov.hk/pho/english/resource/files/e_diabetes_care_patient.pdf) for the Hong Kong Reference Framework for Diabetes Care [Patient Version]. In the wake of the COVID-19 pandemic, diabetic patients are urged to be extra cautious and strictly follow protective measures recommended by the Government (such as maintaining good personal hygiene, reducing social contact and wearing masks in public places).

To halt the rise of diabetes, we can contribute by leading a healthy lifestyle. For more information about diabetes, please visit the thematic webpage: [www.chp.gov.hk/en/features/103647.html](http://www.chp.gov.hk/en/features/103647.html). To keep the COVID-19 at bay, we all have a role to play. For more information about COVID-19, please visit the thematic webpage: [www.coronavirus.gov.hk/eng/index.html](http://www.coronavirus.gov.hk/eng/index.html). Together, we stay healthy and fight the virus!

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**World Diabetes Day** was established in 1991 by International Diabetes Federation (IDF) and the World Health Organization in response to the escalating health threat posed by diabetes. Every year, World Diabetes Day campaign focuses on a dedicated theme. The theme for 2020 is **The Nurse and Diabetes**, aiming to raise awareness around the crucial role that nurses play in supporting people living with diabetes.

### Nurses: Make the Difference for Diabetes



Nurses play a key role in:

- ♦ Diagnosing diabetes early to ensure prompt treatment.
- ♦ Providing self-management training and psychological support for people with diabetes to help prevent complications.
- ♦ Tackling the risk factors for type 2 diabetes to help prevent the condition.

To know more about World Diabetes Day 2020 and relevant activities, please visit [www.worlddiabetesday.org](http://www.worlddiabetesday.org), follow #WorldDiabetesDay or #NursesMakeTheDifference.

**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](mailto:so_dp3@dh.gov.hk).

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