

Physical Activity: A Major Strategy for Stroke Prevention

Key Messages

- ※ Stroke is a major cause of disability and death. In Hong Kong, stroke was the fourth commonest cause of death with 3 126 registered deaths in 2021.
- ※ Adherence to active lifestyle reduces stroke risk. Epidemiological studies find a protective effect on stroke risk with sufficient amount of physical activities, whether it is simply walking at a faster pace, bicycling or leisure pursuits. Compared to low active individuals, moderately and highly active individuals had 20% and 27% lower risk of stroke incidence or mortality respectively.
- ※ For health, adults are urged to do at least 150–300 minutes of moderate-intensity aerobic physical activity, or an equivalent amount and intensity of physical activity throughout the week. In order to meet the daily or weekly goal, individuals can go for a variety of physical activities and do the aerobic exercises in shorter bouts (such as 10, 15 or 20 minutes) a few times a day.
- ※ Walking as a way of conducting physical activity would also protect against various chronic diseases and reduce the risk of stroke. Adults are recommended to gradually increase their step goal to ‘10 000 Steps a Day’ based on an individual’s own physical conditions, abilities, pace and circumstances.
- ※ For increasing population’s participation in physical activity, the Department of Health will continue organising health promotional campaigns using a variety of strategies to raise public awareness about the benefits of physical activity, and working closely with relevant stakeholders as well as community partners to integrate physical activity into daily living.

Physical Activity: A Major Strategy for Stroke Prevention

Stroke happens either when the blood supply to part of the brain is cut off by a blood clot or plaque or when a brain artery ruptures leading to a haemorrhage. Sufferers may suddenly experience numbness or weakness in the face, arm or leg (especially on one side of the body), occurrence of awry mouth or drooling, slurring of speech, difficulties in swallowing, trouble seeing on one or both eyes, or even coma and death. As a major cause of disability and death, the Global Burden of Disease Study estimated that there were about 101 million prevalent cases of stroke, more than 12 million incident cases of stroke, and 6.55 million deaths from stroke across the world in 2019¹. In Hong Kong, stroke was the fourth commonest cause of death with 3 126 registered deaths and a crude death rate of 42.1 per 100 000 population in 2021².

In fact, many strokes could be prevented. As an international case-control study with 26 919 participants from 32 countries indicated, over 90% of strokes worldwide were collectively attributed to 10 potentially modifiable risk factors including physical inactivity, unhealthy eating, smoking, alcohol consumption, abdominal obesity, hypertension, diabetes, blood lipid disorder, cardiac causes as well as psychological stress³. In view of the fact that adherence to a healthy lifestyle reduces stroke risk⁴, this article addresses the role of physical activity in preventing stroke.

Epidemiological Evidence of Physical Activity and Stroke Risk Reduction

Physical activity refers to all bodily movement including during leisure time (such as sports, exercising, and leisure walk), for transport to get to and from places (such as on foot and by cycling), as part of a persons' work (such as walking, loading or lifting objects and other manual tasks) or home activities (such as carrying out household chores and gardening)⁵. Depending on the amounts of physical effort and energy individuals put in, intensity of physical activity can generally be classified into low, moderate, and vigorous. Whether it is simply walking at a faster pace or bicycling^{6, 7}, leisure pursuits⁶⁻⁸, having a manual labour job^{6, 9} or performing tasks around the home yard⁶, epidemiological studies find a protective effect on stroke risk with sufficient amount of physical activities. Compared to low active individuals, moderately and highly active individuals had 20% and 27% lower risk of stroke incidence or mortality respectively¹⁰. In addition, a study also showed that walking pace is inversely associated with the risk of stroke. Individuals in the fastest walking-pace category (with a median of 5.6 kilometers per hour) would have a 44% lower risk of stroke when compared to those in the slowest walking-pace category (with a median of 1.6 kilometers per hour)¹¹.

Mechanisms of Physical Activity on Stroke Risk Reduction

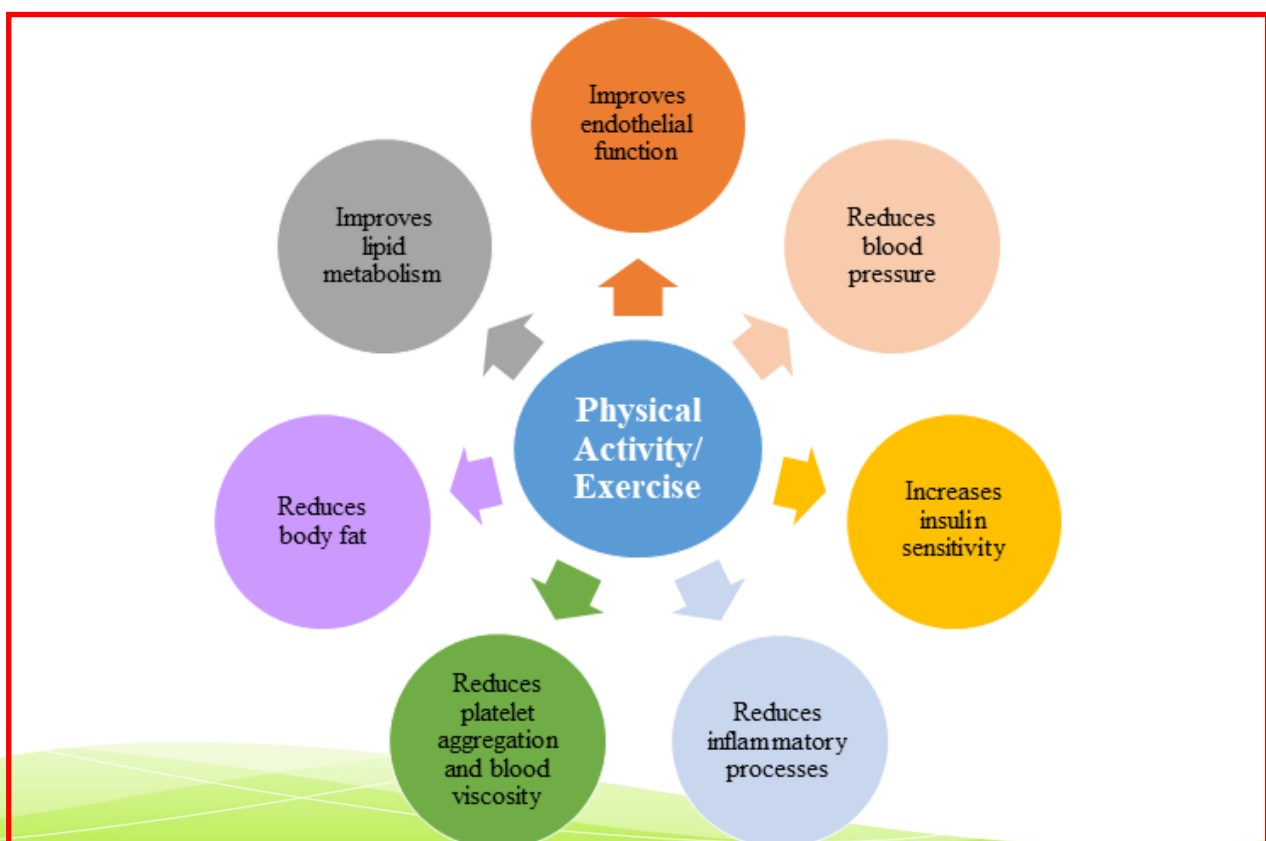
As shown in Figure 1, physical activity or exercise directly or indirectly improves vascular functions and stroke risk factors. Consequently, it helps prevent obesity, hypertension, diabetes and dyslipidaemia, all of which are implicated in the development of stroke¹²⁻¹⁴. Besides, physical activity triggers the release of a number of brain chemicals (such as endorphins and serotonin) that help reduce symptoms of anxiety and depression^{15, 16}. Among people with alcohol use disorders and smokers, studies showed that aerobic exercise could reduce alcohol and cigarette cravings^{17, 18}.

Be Physically Active to Reduce Stroke Risk

For substantial health benefits, members of the public are recommended to undertake regular physical activity. For adults, they should⁵:

- do at least 150–300 minutes of moderate-intensity aerobic physical activity (such as brisk walking, biking on level ground, social dance, hydro fitness exercise, scrubbing bathroom or bathtub, etc.) throughout the week; or
- do at least 75–150 minutes of vigorous-intensity aerobic physical activity (such as jogging, participating in soccer game, fast swimming, aerobic dancing, playing with children at a fast pace, etc.) throughout the week; or
- do an equivalent combination of moderate- and vigorous-intensity activity throughout the week.

Figure 1: Effects of Physical Activity/Exercise on Vascular Functions and Stroke



In order to meet the daily or weekly goal, individuals can go for a variety of physical activities and do the aerobic exercises in shorter bouts (such as 10, 15 or 20 minutes) a few times a day. In addition, individuals should limit the amount of time spent being sedentary and replace sedentary time with physical activity of any intensity (including light intensity)⁵. Of note, having adequate daily walking would protect against various chronic diseases and reduce the risk of stroke. By walking 9 000–10 000 steps per day, studies found that mortality risk would reduce 41–56%^{19,20}. For health, adults are recommended to gradually increase their step goal to ‘10 000 Steps a Day’ based on an individual’s own physical conditions, abilities, pace and circumstances. Any amount of walking is better than none, even if the goal cannot be reached yet.

Apart from leading an active lifestyle, members of the public should also reduce salt intake and eat a balanced diet, avoid smoking, refrain from alcohol drinking, as well as maintain an optimal body weight and waist circumference to guard against stroke. For increasing population’s participation in physical activity, DH will continue organising health promotional campaigns using a variety of strategies to raise public awareness about the benefits of physical activity, and working closely with relevant stakeholders as well as community partners to integrate physical activity into daily living. To know more about physical activity, please visit the DH’s Change for Health website: www.change4health.gov.hk.

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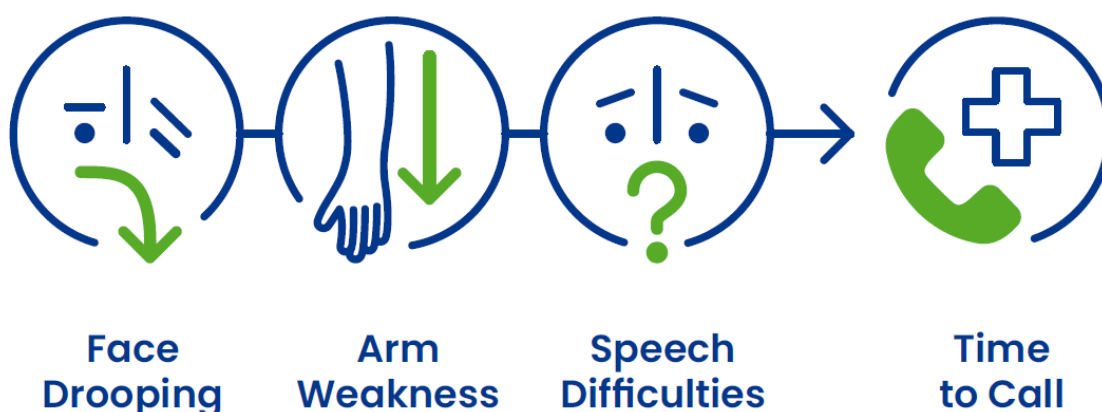
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World Stroke Day

October 29

Initiated by the World Stroke Organization, World Stroke Day aims to raise awareness of stroke and the huge burden it places on the health of people worldwide, and to highlight the ways in which stroke can be prevented.

This year the campaign will be focused on raising awareness of the signs of stroke and the need for timely access to stroke treatment (FAST).



To know more about the World Stroke Day, please visit www.world-stroke.org/world-stroke-day-campaign/world-stroke-day.

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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