

## Strategies of Body Fluid Replacement

The average temperature of summer in Hong Kong is over 30°C. Exercising in such sultry weather, athletes often succumb to dehydration. Excessive dehydration will result in increased body temperature and thus increased pressure on the heart. Research in sports science revealed that dehydration at a rate of 2% of the body weight or above (e.g. 2% of a body weight at 70 kg is 1.4 kg) will hinder athletes' performance and cognitive functions (e.g. concentration). As such, replacement of body fluids during exercise is essential to the health of athletes.

### Fluid replacement before exercise

Drink about 300 to 450 mL of water before exercise. This can ensure adequate fluids in athletes.

### Fluid replacement during exercise

Athletes are advised to replace body fluids at a rate of around 400-800 mL per hour. The more the body weight is, or the more intense the physical activity is, the higher rate of fluid replacement should be. Carbohydrate-electrolyte drinks can maintain a balanced concentration of body fluids, and thus maximise your sports performance.

### Fluid replacement after exercise

If a normal meal follows an exercise session, then a balanced meal together with one to two glasses of water can help a person replace the water and salts lost during exercise. Athletes may also consider a more aggressive strategy of replacing fluids at the rate of 1.5 litres for each kilogram of body weight lost (e.g. 3 litres of fluids to be replaced for a body weight loss of 2 kg). This method is suitable for those who are unable to have a meal right after exercise, or those who have to undergo rapid fluid replacement, a condition that arises from the need to train repeatedly within a single day.

The recommendations above are general by nature. The rate of perspiration during exercise is governed by both environmental and personal factors, such as age, gender, intensity of exercise, air temperature, relative humidity, athletes' tolerance to dehydration, etc. Thus, athletes should notice their body conditions all the time and receive timely fluid replacement to avoid sunstroke in the midst of summer. Then you will be able to exercise for a longer time, and get stronger and fitter.