

KEEP HYDRATED.

It is important to be well-hydrated when training for and running a marathon as dehydration can affect your running performance.

Dehydration leads to impaired muscle endurance and sub-optimal mental functioning, resulting in fatigue and poor coordination. You should correct any fluid deficit in between exercise sessions to achieve optimal gains from your training.

You are recommended to drink adequately before, during and after the marathon to prevent heat stroke which is common when running under the hot and humid climate in Singapore.

Determine your sweat loss

Using the following sweat loss calculation tool, you can develop a hydration plan to ensure you drink enough in preparation for the marathon.

- 1) Weigh yourself before your run in minimal clothing and after your run in the same clothing towel dried. (eg. 60kg – 58kg = 2kg)
- 2) Take note of the volume (ml) of fluids consumed during your run. (eg. 500ml from the drink bottle)
- 3) Measure the difference in your weight before and after going to the toilet after your run, if any, to account for urine losses. (eg. 59kg – 58kg = 1kg)
- 4) Sweat loss = **(1) + (2) - (3)**
 = (2kg x 1000) + 500ml - (1kg x 1000)
 = 2000 + 500 – 1000 = **1500ml**

Your hydration plan helps to:

- Identify how much you should drink to replace the sweat losses.
- Prevent dehydration in between your training sessions and during the marathon.
- Reduce the possibility of over-hydration. When a person drinks at a rate higher than the sweat loss, it can dilute the normal concentration of sodium in the blood leading to a life-threatening condition called hyponatraemia. Symptoms include lethargy, confusion, leading to seizures, coma or death. This is common in runners who gain more than 2 to 5kg from over-drinking or those who drink more than 3 litres during their runs.

Hydration tips

Before your run

- Do not rely on your thirst to drink before the run.
- Hydrate with about 300ml to 400ml or 5ml per kg body weight immediately before your run.

During your run

- Adopt a pattern of consuming small, frequent amounts of fluids during the run.
- An endurance runner may typically drink between 400ml to 1000ml per hour (100ml to 250ml every 15 minutes), but you should individualise this to your needs through practice and monitoring during training.

After your run

- Continue drinking at regular intervals over 2 to 4 hours after your run to fully re-hydrate. Consume about 1.5 times of sweat loss to restore fluid balance.

Drink the right fluids

Caffeine-containing fluids such as cola drinks, tea and coffee as well as alcoholic beverages are not considered as ideal rehydration choices as they increase urine losses.

Sports drinks may assist in meeting both fluids and carbohydrate needs for marathons. These palatable. Cool and flavoured drinks appeal to runners and are known to increase voluntary fluid intake. They are specially formulated with the right amount of carbohydrates and electrolytes to promote fluid intake and retention by the body.

Some thoughts should be given to choosing the right fluids. The following table details the different types of drinks for hydration for active sports.

Description	Amount contains 50g of CHO	Comments
Water	Nil	Water does not stimulate fluid intake to the same extent as sport drinks. Drinking to a plan is therefore crucial. Does not assist with fuel needs, but may be drunk in addition to sport drinks or solid food to make up total fluid needs.
Sports drinks (5-8% CHO and electrolytes)	600-1000ml	Best option for meeting fluid and CHO requirements simultaneously. Has a palatable flavour to encourage greater fluid intake. Provides small amounts of electrolytes. Sport drinks like 100PLUS hydrates 43 percent better than water.
Soft drink (11% CHO)	500ml	May be more slowly absorbed due to CHO content. Carbonated soft drinks may cause people to drink less or cause gastric discomfort during exercise due to the gas present. Negligible source of electrolytes.
Fruit juices (8-12% CHO)	500ml	May be more slowly absorbed due to CHO content. Negligible source of electrolytes. Possible risk of gastrointestinal upset if juice is high in fructose.
Energy dense drinks e.g. smoothies, milk-based drink (70-80% CHO)	200-300ml	Good option for an individual attempting to bulk up. Contain significant amount of protein. Suitable for fuel boost rather than for hydration purposes during exercise.

* Source: Performance Nutrition Unit, Singapore Sports Institute.

**Rehydrate,
Refresh,
Re-energise**

