

Hydration: Keeping your Cool

The concept of hydration is simple but it is one of the easiest things for athletes, even at the elite level, to get wrong. Small amounts of dehydration can have really major effects. Sweat losses totalling just 2% of body weight (1.5 kg in a 75kg athlete) can cause fatigue and reduced skill and are pretty common at both training and competition, especially in the heat.

Not all drinks have the same effect on hydration so it's important to think about *what* you drink as well as how much.

5 Good Reasons to focus on hydration

1. Fight fatigue

During exercise the body delivers more oxygen to working muscles via the circulation by increasing heart rate and the volume of blood pumped per heart beat. When you are dehydrated, blood volume and oxygen delivery to the muscles decrease and fatigue sets in.

Sports drinks can further delay fatigue by providing readily available energy. A recent study showed that athletes given a glucose drink before and during resistance training were able to perform an increased number of repetitions for the same weight than those given a placebo. There are many studies showing the benefits of sports drink for endurance performance.

2. Keep cool

Fluid is needed to provide blood flow to the skin and to produce sweat in response to the increased body temperature that results from exercise. Dehydration can cause a rise in core body temperature which is detrimental to performance and at extreme levels can be fatal.

3. Stay fuelled

A recent study has shown that by being dehydrated, an athlete could use up to 16% more muscle glycogen (the muscles main energy source) than they would if they were able to drink enough during their exercise session!

4. Fuel your brain

Hypoglycaemia (low blood sugar) during exercise can reduce your ability to concentrate and be devastating to both skill and technique. You may feel excessively tired, shaky and may even faint. Sports drink has a dual role both keeping you hydrated and providing fuel.

5. Stay healthy

Upper respiratory tract infections like cold and flu appear to be more common in people who are training heavily. Hormones such as adrenaline and cortisol suppress the immune system but consuming adequate carbohydrate during exercise appears to keep these hormone levels in check. Sports drink is usually the easiest way to do this.

Not all drinks are created equal

During Exercise

During exercise the best beverage choices are sports drink or water. Sports drink has the added benefits of

- providing fuel in a way that is well tolerated during exercise,
- having a flavour that is appealing during exercise
- providing electrolytes which help your body "hold on" to the fluid you drink and keeping you thirsty.

Sports drinks have about half as much sugar as juice, cordial or soft drink but can still provide too much energy for some athletes when consumed in large amounts. Athletes with lower energy needs can stick to water during light sessions or when the weather is cool but should still consider sports drink during back to back, long or intense exercise sessions or during very hot weather.

During the day

Once you are off the water, remember to sip at your drink through out the day. Many athletes make the mistake of gulping down a litre or so when they first finish training and then forget about it during the remainder of the day. This style of drinking tends to be less effective at combating dehydration than consuming small volumes more often.

What drinks are suitable really depends on your energy needs and taste preferences. For those with high energy needs flavoured drinks such as juice, cordial or sports drink can encourage better fluid intake and add to carbohydrate intake for the day. For those with lower energy requirements water is the best choice or for more flavour try diet cordial or diet soft drinks.

Caffeinated drinks have had a bad wrap in the past but more recent thinking suggests that for regular tea/coffee/cola drinkers the diuretic effect is reduced so these can be included.

How much should I drink?

Surprisingly this is a difficult question. Many factors affect sweat rates including individual differences, weather conditions (temperature and humidity), exercise duration and intensity. It is possible to over-drink and this can be just as risky as dehydration. Your goal should always be to roughly match your fluid intake with your losses.

Hydration status can be measured using urine or blood measures but this is not practical for every training session. The simplest techniques for monitoring your hydration day to day include pre and post training weights and/or urine colour and volume. Acute weight change can be a guide to fluid loss eg 1 kg lost during a session is roughly 1 litre of fluid and you will need to drink at least that much to make it up. Urine colour is also fairly effective though some vitamins can give you a false positive for dehydration! Aim to produce a lightly coloured urine relatively often during the day and you should be on the right track.