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## Exercise - the low-down on hydration

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### Summary

- It's important to replace fluids lost through sweat when exercising.
  - The best fluid is water.
  - When dehydrated, your mind and body cannot function at their best.
  - Your body will show symptoms when it is dehydrated – such as darker urine, and lack of sweat when exercising.
  - If you are an athlete, seek advice about fluid replacement from a health professional.
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Fluids keep your body hydrated; without them your body won't function at its best.

If you don't drink enough fluid:

- Your body temperature and heart rate may rise. That's because when the total amount of water in your body is below normal level (hypohydration) your body can't properly regulate heat.
- You may feel more fatigued than usual.
- You may not be able to think clearly – your motor control, decision-making abilities and concentration may be impaired.
- Your body's functions may slow down – this includes gastric emptying, so you may feel uncomfortable in your stomach.
- Your performance in sport or exercise may not be as good as it could be. The impact is even worse when you're active and dehydrated in hot conditions.

The simple solution is, of course, to drink enough fluids when you exercise. Make fluid replacement a priority when you're physically active.

Drinking enough fluids will help to maintain your concentration and performance, increase your endurance, and

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prevent excessive elevations in heart rate and body temperature. It's all about sufficient hydration.

### What hydration means

The amount of water you need depends on a range of factors, such as climatic conditions, your health, your clothing, your exercise intensity and duration. So, being well hydrated will differ per person and situation.

As a guide, you probably need more fluid if:

- you **sweat heavily**
- you have certain medical conditions, such as **diabetes** or **heart disease**
- you have **cystic fibrosis**, which means you have a high concentration of sodium in your sweat
- you are using a medication that can act as a diuretic, causing your body to lose more fluid
- you have a bigger body size
- you are fit (because fitter people tend to sweat more and earlier in their exercise)
- you are doing vigorous exercise
- you are active in hot or humid conditions.

Thirst isn't the best indicator that you need to drink. In fact, if you feel thirsty, you are probably already dehydrated.

A good test of dehydration is the colour of your urine. If it's pale and clear it means you're well hydrated. The darker it is, the more fluid you need to drink.

Another sign of dehydration is a lack of sweat during vigorous activity, when you expect to sweat. No sweating is a sign that you're both dehydrated and probably suffering **heat exhaustion**.

### What dehydration means

Dehydration occurs when your body's water content is too low. Here are some body signals that indicate you haven't had enough fluid:

- **headaches**
- fatigue
- mood changes
- slow reaction times
- dry nasal passages
- dry or cracked lips
- dark coloured urine
- **muscle cramps**
- weakness
- confusion
- hallucinations.

If you experience any of these symptoms, you may need to increase your fluid intake.

If you don't rehydrate, your physical and mental performance is likely to be affected. A loss of fluid equal to two per cent of body mass (for example a 1.4 kg loss in a 70 kg person) is enough to cause a detectable decrease in performance. A loss of fluid equal to more than two per cent means you risk nausea, vomiting, diarrhoea and other gastro-intestinal problems.

It's not possible to train your body to handle dehydration, so don't delay fluid replacement to 'get used to dehydration'. When you need water, you need it.

### Sweat and dehydration

When you exercise, your body sweats as it tries to return to its optimal temperature. As sweat evaporates from your skin, it removes heat from the body, but you also lose body fluid.

So, you need to drink fluid during exercise to replace the fluids you lose when you sweat. That way, you'll reduce

the risk of heat stress, maintain normal body function, and maintain performance levels. The general rule is: if you're sweating, you need to be drinking fluids.

It is possible to drink too much during exercise. Over-hydration, in rare but severe cases, can lead to death. To avoid over- or under-hydration, it can be useful to know your sweat rate. That way, you can work out exactly how much you should be drinking. Or, talk to your GP or an [accredited sports dietitian](#) for a fluids plan.

To work out your sweat rate:

- Empty your bladder.
- Weigh yourself in minimal clothing, as close to the start of exercise as possible (this is your **initial weight**).
- Record the ambient temperature.
- Do your exercise session.
- Record the volume of any fluid you consume during your exercise session (**fluid**).
- Estimate (or measure!) urine losses during your exercise session (**urine**).
- Weigh yourself again at the end of your session, in the same clothing as before - be sure to towel off any excess sweat from your body first (this is your **final weight**).
- Your weight change during exercise, plus any fluids consumed, minus any urine losses, reflects your total fluid loss for that session. To work this out:
  - Subtract your final weight from your initial weight.
  - Add the weight of fluid (in kg) that you consumed while exercising.
  - Subtract the weight of fluid (in kg) you lost through urination.
  - To make this into an hourly rate, divide it by the number of hours you spent exercising.

Sweat rate (L/hr) = [initial weight (kg) – final weight (kg) + fluid (kg\*) – urine (kg)] / time (hrs)  
(\*One litre of water or urine is equivalent to one kilogram.)

Remember, this is your sweat rate when exercising at a particular ambient temperature. Your sweat rate will change with the temperature, so it can be useful to measure your sweat rate at different times of the year.

### What to drink when exercising

Water is the best drink to satisfy thirst and replace fluid lost during exercise. Drink water before you start exercising, too.

Water boasts a huge list of benefits. It's natural, free, readily available, contains no kilojoules, and contains fluoride, which is good for your teeth.

### About sports drinks

Some athletes use sports drinks that contain electrolytes and carbohydrates, which have concentrations that allow the body to refuel during exercise. Sports drinks may be useful if your activity is moderate to vigorous in intensity for more than 60 minutes (see the [Australian Dietary Guidelines](#)). However, sports drinks can be high in sugar, so consume them only if necessary.

Remember that fruit and vegetables contain a high proportion of water, so a fruit snack (such as oranges) can help your fluid replacement.

### What not to drink when exercising

Some fluids are not recommended when exercising:

- Avoid cordial, soft drink or juice. These are usually high in carbohydrates and low in sodium.
- Avoid caffeine, which can be a diuretic (which means it makes you pass more urine, and so lose more fluid).

### How much to drink after exercising

To adequately rehydrate after your exercise session, aim to drink one and a half times the fluid you lost while exercising. Don't do this all in one go. Spread it over the next two to six hours.

You need to drink more fluid than you lost while exercising because you continue to lose fluid through sweating and urination for some time after you have finished your session.

### Where to get help

- Your **GP (doctor)**
- **Accredited sports dietitian**
- **Australian Sports Commission**
- **Kidney Health Australia** Tel. **1800 454 363**

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