

# REST HUB

## Environment Ready

### Hydration

Remaining well hydrated (euhydrated) is important for the maintenance of exercise performance.

Dehydration may start to impact performance when fluid deficits are as low as 2% of body mass (BM), effects may include:

- > Increased cardiovascular and heat strain during exercise.
- > Increased perceptions of effort or fatigue.
- > A reduction in mental function, motor control, decision making, or concentration.
- > Gut function impairment, increasing the risk of intestinal discomfort during exercise.
- > Reduced muscular strength and endurance capacity.

### Fluid guidelines

#### Daily hydration strategies

- > Periodically monitor athlete hydration status to create an awareness of fluid intake practices, and their ability to adjust fluid intake to compensate for fluid losses.
- > Encourage athletes to be conscious of fluid needs across the day, not just during exercise. Failing to drink enough fluid across the day can result in athletes presenting to training dehydrated, potentially impairing performance regardless of fluid consumed during training.
- > Encourage athletes to drink at meals or snacks. This takes advantage of the salts naturally contained in food, promoting better retention of ingested fluids.
- > When fluid losses are high and rapid rehydration is required, enabling access to sodium rich foods or electrolyte supplements promotes more aggressive rehydration, by reducing urinary losses.
- > If travelling with athletes, ensure drinks are made available at mealtimes.
- > Improve access to fluid over the day by including planning drink breaks, carrying personal drink bottles, and encouraging athletes to sip fluid periodically rather than drinking large volumes at one time.
- > Assist athletes in selecting palatable fluids that help achieve overall nutrition goals.

#### Fluid needs during exercise

- > Recognise the importance of fluid replacement during exercise and create a supportive environment by ensuring fluids are readily accessible during training and appropriate break times allocated.
- > Develop event-specific and individualised fluid plans that address the fluid losses associated with a sport, maximizing available opportunities to maintain optimal hydration status.
- > In preparation for competition, allow athletes to practice and refine fluid replacement strategies during training.
- > Undertaking fluid balance trials with athletes provides insight into individual sweat losses. As sweat losses will vary with exercise intensity and environmental conditions, periodic trials should be considered across the year to enable athletes to better understand their individual needs. Fluid balance trials require athletes to weigh-in before and after exercise, appropriate education should be provided in advance of scheduled sessions. Some athletes may be weight sensitive, such trials may be best facilitated by their sports dietitian. Fluid balance trials should not be considered compulsory.
- > Any weight change throughout a training session merely reflects a mismatch between fluid intake and losses. This can be used to assist post-exercise fluid intake recommendations, especially when recovery times between sessions are brief. Athletes are encouraged to consume 150% of any weight loss at the end of exercise. This accounts for ongoing fluid losses during the recovery period.

## Monitoring tools

A range of monitoring tools can be used to assess daily hydration status, including presenting hydration status, sweat losses during exercise, and post-exercise fluid needs.

### Urine specific gravity (USG)

Determined via a refractometer or urinary dipstick.

Measurement on waking provides an indication of hydration status.

Can be undertaken over consecutive mornings to gauge typical hydration practices or used in isolation to assess hydration status on a single day.

### Fluid balance testing

Fluid balance testing is a more accurate measurement of sweat losses during exercise.

Requires athletes to weigh-in, and record drink bottle weight, pre- and post-exercise.

### Urine volume & colour

Waking urine is usually the most reliable indicator of hydration.

Dark colour or small output are usually indicative of dehydration.

Continued episodes of dark/small volume urine over the day confirm dehydration.

Drinking large volumes to address dehydration without actively replacing sodium is likely to lead to the production of dilute urine.



For individualised hydration guidance, athletes are encouraged to consult an accredited sports dietitian (<https://www.sportsdietitians.com.au/find-an-accredited-sports-dietitian/>).

### Recommended Reading

Belval L, Hosokawa Y, Casa D, et al. Practical hydration solutions for sports. *Nutrients*. 2019 Jul 9;11(7):1550. doi: 10.3390/nu11071550.

<https://www.gssiweb.org/toolbox/fluidLoss/calculator>

<https://www.sportsdietitians.com.au/factsheets/fuelling-recovery/why-is-hydration-important-the-effect-of-dehydration-on-performance/>