

NUTRITION FOR ROWING

Rowing events are held over 2000 metres and typically take 5.5 to 7 minutes depending on the class. Rowing involves lightweight and heavyweight competition. In the lightweight division, male athletes are not permitted to exceed 72.5kg with a crew average of 70kg. For lightweight females, the maximum individual weight is 59kg with a crew average of 57kg. Rowing places great demands on both the aerobic and anaerobic energy systems and requires great power and strength. Nutrition plays a key role in both training and competition phases.

Training

Rowing requires a unique mix of technique, power and endurance of both the aerobic and anaerobic energy systems. This requires long hours of intense training even though events only last 5-7 minutes. Elite rowers train upwards of 11 months of the year with the training stimulus varying markedly depending on the phase of season. A typical rowing session covers upwards of 20 km with 1-2 sessions being held on the water each day, depending on conditions. In addition, rowers undertake gym sessions 3-4 times per week to develop strength and muscular endurance. Additional aerobic cross-training is also regularly scheduled. Road cycling is particularly common, as are rowing ergometer sessions, especially when weather conditions are not inviting on-water. Altogether, rowers often undertake two or more sessions a day, hence ensuring optimal fuelling & recovery are a high priority throughout a training week.

Competition

Regattas may last from two days to a week. Competitors must progress through heats and semi-finals to earn a berth in the finals. Competitors who fail to qualify for semifinals directly from the heats contest a repechage to earn a place in the semi-final. At major regattas rowers will generally only contest one event per day with the regatta lasting roughly one week. In Club regattas rowers may race up to three times in one day. Light training is undertaken on any rest days. Lightweight rowers must weigh-in 1-2 hours prior to the first of their races on each day they race.

Physical Characteristics

The technical requirements of rowing favour athletes who are tall with long levers, while the force generating requirements encourage very muscular athletes with low body fat levels. Because of this, elite heavyweight rowers tend to be much taller than both the general population and sub-elite rowers. While elite lightweight rowers may be similar in height to the general public, they are more muscular and carry very low body fat levels to assist in achieving body mass limits. Heavyweight rowers are typically ~ 10 cm taller & 15-20 kg heavier than their lightweight counterparts.

Common Nutrition Issues

Training Nutrition

Heavyweight rowers have high energy and carbohydrate requirements to support training loads and meet body mass and strength goals. All rowers need to work hard to recover between training sessions. A high-energy, high-carbohydrate, nutrient-dense diet is essential throughout the season. Some rowers (particularly male heavyweights) struggle with the sheer volume of food they need to consume, especially when training, work and study commitments can encroach into typical snack times. The use of compact, energy-dense foods (cereal bars, flavoured yoghurt, fruit loaf & bread with thick spreads of peanut paste, jam or honey) or drinks (sports drinks, juice, flavoured milk, liquid meals) are often necessary between meals to keep the volume of food manageable and are also valuable as pre-training snacks prior to early morning training sessions. Rowers need to pay particular attention to recovery after training and organise themselves to have high-carbohydrate snacks on hand immediately after training sessions are completed. See the Recovery Nutrition fact sheet for further information. Lightweight rowers are faced with similar nutritional priorities but these often need to be met while also promoting weight loss, a challenging situation that is best met with the support of a sports dietitian.

Iron Status

Rowers can be at risk of poor iron status. In particular, females and adolescent males can struggle to meet their iron needs. Regular checks of iron status are recommended. Rowers should include sources of iron such as lean red meat, chicken, iron-fortified cereals, wholegrain cereals, legumes and green vegetables in the diet on a regular basis.

Advice from a sports dietitian should be sought if low iron status develops.

Fluid Needs

Long training sessions on the water lead to significant sweat losses, particularly when undertaken twice a day. The table below shows sweat losses and fluid intakes recorded on AIS rowers in different environmental conditions. Despite having drink bottles available, athletes failed to consume enough fluid to keep up with their sweat losses, particularly in hot weather. Note, even in cold weather, considerable sweat losses were seen.

Season	Men		Women	
	Sweat losses (mL/hr) (range)	Fluid intake (mL/hr) (range)	Sweat losses (mL/hr) (range)	Fluid intake (mL/hr) (range)
Hot conditions (32°C)	1980 (990-2105)	960 (410-1490)	1390 (740-2335)	780 (290-1390)
Cool conditions (10°C)	1165 (430-2000)	582 (215-1265)	780 (360-1550)	405 (145-660)

Rowers should establish their individual fluid losses by weighing before and after training sessions, aiming to keep any weight loss to < 1 kg. Regular breaks between pieces should ensure ample opportunity to ingest sufficient fluid during training, the choice of fluid depending on individual nutritional goals. For the many athletes, use of sports drinks during long / hard sessions will be beneficial, providing both fluid and carbohydrate to support the training session.

While some lightweight rowers may need to adjust their hydration status in the last day before competition to achieve specified body mass limits, this should only be undertaken with the guidance of an experienced sports scientist. In training, both heavyweight & lightweight rowers should aim to remain well hydrated throughout the training week.

Competition Nutrition

During competition, energy needs of most rowers will be reduced compared to when they're training, however nerves and having several races over a day can disrupt normal eating patterns. There is both a risk of over-eating and under-eating on these occasions, so rowers should plan their intake ahead of each regatta day to ensure they remain on track with their nutrition goals. See competition nutrition fact sheet for more information.

As most regatta courses are often some distance from shops, athletes should be encouraged to take their own supply of foods and fluids to get through the day. Suitable choices include cereal bars, liquid meal supplements, sports bars, fruit bars, fresh & dried fruit, sandwiches, yoghurt, juice, low fat flavoured milk and powdered sports drinks. High sweat rates during racing and exposure to the hot summer heat throughout the day at the regatta site means fluid intake remains a priority. Athletes should be encouraged to keep a drink bottle by their side throughout the day, acting as a constant reminder to drink while also ensuring ready access to fluid.

This fact sheet is based on National team athletes and is therefore specific to these athletes. Written by AIS Sports Nutrition, last updated December 2013. © Australian Sports Commission.