

NUTRITION

About Distance Running

Distance running entails road races and cross-country runs of varying distances including 10km, 15km, half marathon (21.1km) and the full marathon (42.2km).

Many recreational runners train weekly distances of 50-100km for fitness and event preparation when training for races throughout the year. Elite distance runners follow a highly periodised program and can cover more than 150km in a week, depending on which event/s they are targeting and their current training phase. At the elite level, training usually involves

two different training sessions a day adopting a hard-easy principle. For example, slow, longer runs or recovery/easy runs help build aerobic endurance. In contrast, intense continuous runs and interval/threshold sessions aim to improve anaerobic capacity and speed. Water running and weight training are included for injury rehabilitation.

Elite runners may compete in weekly or fortnightly events over a season of road races (summer) or cross-country runs (winter). These are sometimes treated as hard training sessions used to prepare and peak for a few key races. Marathon runners typically only compete at this distance once or twice a year.

During most distance running events, particularly the half and full marathon, there is a high reliance on the aerobic energy system; however, anaerobic efforts are also required for surges, hills or a sprint finish.

Dietary strategies can positively influence the factors which would otherwise limit an athlete's performance such as fluid balance, availability of carbohydrate for fuel and lactate accumulation from anaerobic efforts. Increasing and/or supplementing muscle fuel stores before and during a race will assist in longer races (half marathon or further) due to depletion of stored carbohydrate (glycogen). Elite runners typically have a small and compact physique with low muscularity, particularly in the upper body, and low body fat levels. Genetics and high volume training often contribute to the low body fat levels of elite runners. These traits help to produce an economical running style and can aid with body temperature regulation.



NUTRITION

Training diet for marathon runners

Demanding endurance training plans, involving daily or twice-daily sessions require sufficient fuel and recovery strategies to prevent fatigue and optimise training adaptations. Although low body fat stores are pursued by some distance runners in an attempt to benefit performance, severe energy and nutrient restriction can lead to fatigue, nutritional deficiencies, hormonal imbalances, bone injuries and disordered eating.

Requirements for carbohydrate, protein, vitamins and minerals and fluids vary depending on training phase. An individual's carbohydrate intake should reflect their daily training load; increasing total carbohydrate and energy intake during high-volume days and decreasing intake when volume and intensity are reduced (e.g. easy, recovery days). Nutrient dense carbohydrate rich foods (such as wholegrain breads and cereals, starchy vegetables, fruit, dairy) should be prioritised to meet fuel demands, however there may also be a need to include additional carbohydrate rich foods/drinks (e.g. sports drinks, energy gels) around training to improve performance during heavy training loads. Strategic intake of carbohydrate rich foods/drinks soon after training will aid rapid muscle glycogen repletion, particularly if training twice on the same day. Including protein rich foods throughout the day assists to build new muscle protein and red blood cells as part of the repair and adaptation process.

Gastrointestinal upset during hard runs is common. Many runners often prefer to run on an empty stomach, with the pre-training food/drink eaten well in advance of the session. Low fibre foods or liquid meal supplements before hard training sessions may also help reduce concerns.

Hydration needs

Distance runners should aim to drink enough fluid each day to replace losses. Fluid needs are influenced by factors that drive fluid losses such as temperature, sweat rate, exercise intensity, duration and altitude. It is not necessary or practical to replace all fluid losses during a session/race, but rather aim to replace ~150% of the fluid volume lost over the ~4-6 hours following the session.

Eating before a run

The main factors causing fatigue during competition are fuel (carbohydrate) depletion and dehydration. Storage of adequate muscle fuel (glycogen) is required to ensure runners can complete their events at desired intensity.



NUTRITION

For longer distances (half marathon and further), carbohydrate loading over the 24-48 hours before the event can help to increase glycogen stores, improving fuel availability during the event. Consuming low fibre foods, reducing high protein or high fat foods and using compact liquid carbohydrate foods over the last 12-24 hours before the event can help to reduce the risk of stomach upset during the race.

The pre-event meal is a vital opportunity for a final top up of glycogen stores and to optimise hydration levels. For an early morning race, where time is scarce, a light, low fibre carbohydrate-rich snack can be eaten 1-2 hours before the race.

Some suitable pre-event light snack ideas include:

Up & Go (sports energy drink) + muesli bar

Peanut butter on toast

Crumpets with banana + honey

Creamed rice

A later race time might allow for a larger meal 3-4 hours before the start of the event, followed by a small snack or carbohydrate containing fluid closer to the race start. These meals should be practised in training before a long run.

Some suitable examples include:



Porridge and fruit

Rice or pasta dish

Sandwich or roll with lean salad filling

Banana smoothie

Eating and drinking during competition

As the race distance increases there is an increased need for additional fuel (carbohydrate) during the event. For half marathon or longer events, having 30-60g of carbohydrate per hour is recommended to prevent muscle fatigue and to maintain pace and cognition. These should be easy to digest carbohydrate-rich options with minimal fat, fibre and protein as these slow down digestion. Sports foods such as gels, energy chews, sports bars and sports drinks are suitable choices and easy to carry on the run course. Consuming a standard 6% carbohydrate sports drink at aid stations located throughout an event will help to meet carbohydrate and fluid needs simultaneously.

Some runners vary their carbohydrate food/drink choice at different stages of the event, and many use cola drinks in the later stages of the race for the additional benefit of caffeine to aid performance. Experimenting during long training sessions that simulate race day or during lead up events will help determine the ideal plan for an individual.

NUTRITION

Recovery

High-intensity training sessions, races or long runs deplete glycogen stores so consuming a carbohydrate-rich meal/snack soon after finishing will help to maximise recovery. In addition, the recovery meal or snack should include ~20-25g of high quality protein to aid with muscle repair. Including healthy fats will also help to reduce inflammation. Fluids (predominantly water) should also be included to rehydrate and replace sweat losses. Nutrient-rich wholefood choices should be prioritised and athletes with a low energy budget should aim to time their training sessions around meal times so that they can use main meals to promote recovery after training.

Some recovery food suggestions include:

Tuna, avocado and salad sandwich

Poached eggs on toast with side of veggies

**Yogurt with muesli with nuts and
fresh fruit**



OTHER NUTRITION TIPS

Practise Test fueling and fluid strategies during training to ensure you are comfortable with eating food and fluid whilst running and from aid stations.

Monitor iron levels Distance runners (particularly females) are at risk of low iron levels due to increased losses (red blood cell damage, sweat, gastrointestinal bleeding, menstruation)

and/or low intake of iron rich foods. As low iron levels can cause fatigue and impair performance, iron status should be checked by a GP and further support given by an Accredited Sports Dietitian.

Some iron rich food suggestions include:



**Lean Meat (liver, beef, chicken, sardines, eggs,
kangaroo, salmon)**

Legumes such as lentils, beans and chickpeas

Pumpkin seeds and sunflower seeds

Nuts especially cashews and almonds

Dark green leafy vegetables (such as spinach)

Wholegrain cereals such as oats & brown rice

Dried apricots

For more tips and tricks on sport and nutrition visit: <https://www.sportsdietitians.com.au/factsheets/food-for-your-sport/food-for-your-sport-distance-running/>