Comrades ultra marathon
Practical nutrition advice for preparation and Race day

Introduction

A well chosen, sports specific eating plan helps provide all levels of endurance runners with the confidence that they will be well prepared and will be consistent in their approach to achieving high level performance in training and on race day.

To perform well in training in preparation for ultra endurance events such as Comrades ultra marathon, it is important that runners' energy, carbohydrate and protein needs are matched to their size and physique[1]. Runner's daily energy needs must also be added to the training demands of the sport which includes any cross training activity such as gym work they may do outside running to physically prepare for the ultra distance event.

There is no simple formula to predict endurance athletes' daily energy and nutrient needs as these daily intakes should be periodised according to the frequency and intensity of training sessions and need to include planned races in the lead up to Comrades.[1,2]

Quality and quantity of meals and snacks for recovery

It is important to ensure that liquids, snacks and meals are rich in nutritious carbohydrates. The right quality and quantity of food helps promote recovery between training sessions especially runners training twice a day. Consuming adequate carbohydrates with a small amount of protein after training sessions or races is an important opportunity to replace muscle and liver glycogen (storage form of carbohydrate).[3,4,5,6] Regular fatigue, poor recovery, illness and injuries accompanied by unwanted weight loss can be common amongst endurance runners who fail to adequately meet daily energy, carbohydrate and other nutrient requirements.[1,8]

Active weight loss is also not advisable during peak training months as the body requires adequate carbohydrate, protein and other essential nutrients for optimal recovery. [1,2,6,8]

Timing of meals and snacks around training to maximise benefits

Easily digestible carbohydrate rich foods or fluids should be consumed before and after training in order to ensure maximum benefits from training sessions. Once again this is especially important when endurance runners are training twice a day.[9,10] Runners should consume approximately 50g of carbohydrate (about 0.25-0.5g per kg body weight) 1-2 hours before training. A small amount of protein (4-5g per 50g of carbohydrate) can be added to carbohydrate rich snack foods beverages after training to help maintain net muscle balance and promote muscle glycogen replacement. [4, 5, 6]

Runners should always choose foods they are familiar with and tolerate well.

Suitable recovery foods and fluids providing 50-60g of carbohydrate

Recovery snacks and fluids
600-800ml (7-9% carbohydrate) sports drink or cordial
• 1 small bowl of breakfast cereal + low fat or skim milk
• 175ml tub of yoghurt + jam sandwich
• 250-300ml low fat flavoured milk + healthy snack / cereal bar
• Sandwich + sliced grilled chicken + piece of fruit
• Roll + peanut butter + piece of fruit
• 1 cup fruit salad with 1 tub of yoghurt
• 500ml carbohydrate rich liquid meal supplement + banana
• 1-2 sports bars

Snacks containing about 8-10g of protein.

Fluid and fuel requirements during training and on race day

Fluid and electrolyte intake during the race should be individualised according to individual sweat losses, personal experience as well as the environmental the temperature on race day. Runners should have practiced their fluid intake strategy over their long runs prior to race day.
After each training session, runners should always make a conscious effort to replace fluid losses to ensure that they are euhydrated before the next training session [11]

A drink to thirst strategy or approximately 500-750mls of fluid per hour over the race (more if the weather is hot) is usually sufficient to minimise dehydration and maintain optimal performance. Dehydration should be limited to 2% body weight (i.e.1 kg for 50 kg runner, 1.5 kg for a 75 kg runner and 2 kg for a 100 kg runner). To help prevent symptoms associated with hyponatraemia, it is recommended that slower runners avoid over hydrating with water or any other type of fluid.[11]

Exogenous carbohydrate is required during ultra endurance races such as comrades to maintain performance and help delay the onset of fatigue.[3] Runners may choose from many options including glucose polymer powders, sports drinks, sports gels, spots bars, soft jelly sweets, potatoes or other similar choices according to their preference and individual tolerance.

A guideline for runners is to consume a small amount of carbohydrate **± 25g** of carbohydrate every **25-30minutes** to ensure blood glucose levels remain within the normal range, as well as to promote consistent running performance and help delay the onset of fatigue. A small amount of protein (2g per 50g of carbohydrate) may be of value as part of the runners total days race fuel to help “minimise muscle break down especially if they plan to be running for most of the allocated race time

25-30g of different carbohydrate sources suitable for during the race

Product	Serving needed to provide 25g of carbohydrate
• Sports gels	• 1 35g-45g sachet provides 25g carbohydrate
• Sports drink • (6-9% carbohydrate – electrolyte drink)	• 300- 400ml • ± ½ x 750ml drinking bottle
• 20g glucose polymer powder	• 20g powder + 250ml water
• Soda and cola drinks	• 1 cup / 250ml (11% carbohydrate)
• Sports Bars	• 1 bar – check your favourite bar for its carbohydrate content
• Bananas	• 1 medium
• Pure fruit bars	• 1 bar (30-35g bar)
• Cereal / granola bars	• 1 bars (30-35g bar) – be careful with fibre
• Rolls / sandwiches – no crusts • Filling: Shaved ham, chicken, grated cheese, • jam, honey, syrup, marmite	• 1 medium roll • 1 sandwich
• Jelly sweets	• 30g (divide a 75g packet into 3 portions)

References

1. Manore M, Thomson J. 2003, *Clinical Sports Nutrition* 3rd Ed p 113-134. Mc Graw Hill Australia.
2. Applegate, E. 1991. Nutritional considerations for Ultra endurance performance. *IJSM* no.1 pp118-126
3. Burke, L. 2003, *Clinical Sports Nutrition* 3rd Ed p 355-384. Mc Graw Hill Australia.
4. Van Loon, L. 2007. Application of Protein or Protein Hydrolysates to Improve Post-exercise Recovery. *IJSNEM* no.17 spp104-spp117
5. Costill D, Sherman W, Fink W, Maresh C, Witten M, Miller J. The role of dietary carbohydrate in muscle glycogen resynthesis after strenuous running. *Am. J. Clin. Nutr.* 34:1831-1836, 1981.
6. Ivy, J.L., A.L. Katz, C.L. Cutler, W.M. Sherman, and E.F. Coyle. Muscle glycogen synthesis after exercise: effect of time of carbohydrate ingestion. *J Appl. Physiol.* 64: 1480-1485, 1988.
7. Millard-Stafford M, Warren G, Thomas M, Doyle J, Snow T, Hitchcock T.2005. Recovery from Run Training: Efficacy of a Carbohydrate-Protein Beverage? *IJSNEM* no.15 pp610-pp624
8. Oliver S, Laing, Stewart J, Wilson S, Bilzon J, Walsh N. 2007. Endurance Running Performance after 48 h of Restricted Fluid and/or Energy Intake. *MSSE* vol 39 no2 pp316- pp322
9. Burke L. 2003, *Clinical Sports Nutrition* 3rd Ed p 415-453. Mc Graw Hill Australia.
10. Maffucci D, McMurray R. 2000. Towards optimizing the timing of the pre-exercise meal. *IJSNEM* no.10 pp103-pp113
11. Sawka M, Burke L Eichner R, Maughan R, Montain S, Stachenfeld N, 2007. Position Stand: Exercise and fluid replacement. *MSSE* Vol 31pp390-pp377