

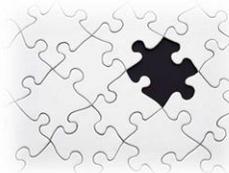
Nutritional strategies to optimise running performance

1. MACRONUTRIENTS VS MICORNUTRIENTS

MICRONUTRIENTS: Do we need more micronutrients?

Athletes eat more... thus more micronutrients... In theory!

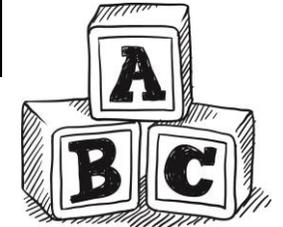
1. Vitamins and minerals {Eat like the rainbow}
2. Anti-oxidants {further research is needed to assess the efficacy and safety}
3. Iron (*Women more @ risk*) {Include animal and plant-based protein sources}
4. Vitamin D {Enough sun in SA}
5. Calcium {Chocolate milk recovery drink}
6. Omega 3 -Anti-inflammatory



Generally: Athletes should try to ensure adequate vitamins and minerals intake through a well balance diet. Athletes who restrict energy intake or have a limited variety of foods may be at risk of micronutrient deficiencies.

MACRONUTRIENTS

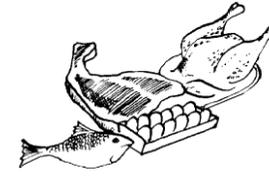
- Carbohydrates (CHO) - Refined vs complex (17kJ)
- Protein - HBV vs LBV (17kJ)
- Fat - MUFA/PUFA/SAT (38kJ)



2. WHEN? WHAT? HOW?

All macronutrients make up the total energy (kJ or kCal) that you consume per day. Athletes need to consume adequate energy; especially during periods of high-intensity and or long-duration training to maintain body weight, maintain health and to maximize training effects. Low energy intake can result in loss of muscle mass, menstrual dysfunction, loss of or failure to gain bone density, increased risk of fatigue, increased risk of injury, increased risk of illness and a prolonged recovery process.

	CHO	Protein	Fat	Fluids
Definition and function in the body	<p>CHO provides an important, but relatively short-lived supply of fuel for exercise that must be refilled each day from CHO in the food that we eat.</p> <p>Your eating plan needs to provide enough CHO to fuel their training program and to optimise recovery of muscle glycogen stores between workouts.</p>	<p>When you are training hard, your body needs extra protein to help with muscle gain, muscle repair and it can also help to fuel the body.</p> <p>It is also important to not eat too much protein as it can accelerate the progression of pre-existing kidney diseases, it is very expensive, it also leads to a high fat intake, increase the fluid requirements and it may displace other valuable foods.</p>	<p>The first priority when calculating is the CHO and protein.</p> <p>You shouldn't consume less than 20% of your total energy in the form of fat</p> <p>It is important to consume the healthy types of fat</p>	
				

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Examples	Bread Rice Pasta Couscous Fruit Poweraid Potatoes Sweet potatoes 	Eggs Milk Cheese Yoghurt Meat/chicken/fish Nuts Baked beans 	Margarine Peanut butter Oils Avocado	Water Poweraid Energade 32Gi Red Bull Milk																	
Pre-workout DO NOT TRY ANYTHING NEW BEFORE AN IMPORTANT RACE NEVER SKIP BREAKFAST	1g/kg 1 hour before event 2g/kg 2 hours before event - Low in fat - Low in fibre - Moderate to low in protein	X More research needed	During the day for ULTRA endurance athletes: 0.5g/kg - 1.5 g/kg	5-7 ml/kg (4 hours prior) 400 - 700ml during the 60 - 90 minute period before the start																	
During workout	<table border="1"> <thead> <tr> <th>Time</th> <th>Intake</th> <th>Type</th> </tr> </thead> <tbody> <tr> <td>< 30 min</td> <td>-</td> <td>-</td> </tr> <tr> <td>30 - 75 min</td> <td>Mouth rinse</td> <td>Any</td> </tr> <tr> <td>1-2 hours</td> <td>30g/hour</td> <td>Any</td> </tr> <tr> <td>2 - 3 hours</td> <td>60g/hour</td> <td>Multiple transportable CHO</td> </tr> <tr> <td>> 3 hours</td> <td>90g/hour</td> <td>Multiple transportable CHO</td> </tr> </tbody> </table>	Time		Intake	Type	< 30 min	-	-	30 - 75 min	Mouth rinse	Any	1-2 hours	30g/hour	Any	2 - 3 hours	60g/hour	Multiple transportable CHO	> 3 hours	90g/hour	Multiple transportable CHO	X More research needed
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After workout	1 - 1.2 g/kg Examples: Sandwich with 2 eggs and mayo, FutureLife Protein shake, Chocolate Milk, Baked beans on toast, Eggs (boiled), Milo ready to drink or baked potato with cottage cheese	10 - 20g Protein (Max 25g) 0.2 - 0.5g/kg		Alcohol NOT to be used to rehydrate 																	
Comments	Training the gut: Athletes who regularly consume CHO or have a high daily CHO intake may have an increased capacity to absorb it. The gut is adaptable and trainable			Check urine: - Colour and volume																	

3. Supplements

1. Only 3x things to help on race day: 1. CHO 2. Fluid 3. Caffeine (WADA list)

- One of the most common supplement used in endurance sports; for the ergogenic effect thereof.
- Caffeine was banned, since 2012 it was removed
- Strategy: 3mg/kg 60 minutes prior thereafter 1mg/kg every 2 hours
- Do not try on an important race
- Monitor for side-effects

