NUTRITIONAL STRATEGIES FOR ATHLETICS – Track and Field

Athletics consist of a group of events or disciplines involving either running, walking, throwing or jumping of different lengths and distances. This and the fact that the time between heats and finals differ, make it difficult to provide a step-by-step plan. Our aim however, is to provide general guidelines for before, during and after events. You may need to make minor individual adjustments depending upon the situation.

BEFORE THE EVENT/ TRAINING

Most track and field athletic items predominantly make use of the anaerobic energy systems and involve short to medium duration, single or repeated bouts of high intensity spurts. Therefore, the guidelines on carbohydrate loading are not included, but are available on request for events with duration of 90 minutes and longer where carbohydrate loading may beneficial.

PRE-EVENT MEAL (2-3 hours before the event)

The goal of the pre-exercise meal is to ensure that training is started with adequate energy levels (both ATP and glycogen), without experiencing gastro-intestinal discomfort. There are a few scientifically based guidelines that the pre-event meal should preferably comply to. These are listed below.

GOALS	GUIDELINES
Adequate energy	- Ensure adequate calorie intake - Adequate intake of slow to intermediate releasing carbohydrates 2-3 hours before the event AND both slow/ intermediate and fast releasing carbohydrates 30 min before the event
Stable blood glucose level	- Include slow and/ or intermediate releasing carbohydrates - Include moderate amounts of protein - Include small amounts of fat
Optimal hydration status	- 200-600 ml water/ fluid
Prevention of gastro-intestinal discomfort*	- Avoid large quantities of fat and fibre - Avoid foods that you are allergic or intolerant to - Avoid foods known to upset your stomach - Avoid foods that cause flatulence e.g. legumes, cabbage, broccoli, cauliflower, brussels sprouts, cucumber, onions and artificial sweeteners e.g. sorbitol and mannitol

* Gastro-intestinal discomfort includes any gut-related symptoms that cause discomfort e.g. diarrhoea, nausea, vomiting, flatulence, etc.

SAMPLE PRE-EVENT MEAL (2-3 hours before the event):

1-1½ cup ***PVM MEALIE MEAL MIX*** + 200 ml fruit juice
OR
1-1½ cup muesli + 250 ml low fat yoghurt + 1-2 tsp sugar/honey/syrup+ 200 ml fruit juice

OR
1-1.5 cups Pronutro + low fat milk + + 200 ml fruit juice
OR
3-6 slices rye/wholegrain bread/seed loaf OR 2-4 brown rolls
+ 5 slices lean ham OR 2 hamburger patties OR ¾ cup grated cheese (preferably low fat e.g. Mozzarella, Edam, Ricotta)
+ ½ cup salad/veggies (optional)
+ 1 large fruit (e.g. apple) OR 200 ml fruit juice
+ 2 tsp margarine / butter (spread thinly) or oil (e.g. olive oil) for meal preparation

OR

If not able to eat (e.g. due to nerves or unavailability of food):
2 portions ***FUSION OR*** 1 portion ***FUSION MASS***
+ 1 ***PVM ENERGY BAR*** (optional)
+ 1 large fruit (e.g. apple/pear/peach) OR 200 ml fruit juice

To drink: Mineral water (plain/ flavoured) or plain water or diluted fruit juice (no sugar-containing carbonated drinks or large quantities of fruit juice, in order to prevent severe blood sugar fluctuation causing sluggishness/fatigue/poor concentration during competition)

SUPPLEMENTS (30-45 minutes before the event):

OCTANE XTR (take a few sips every now and again)
OR 1 ***OCTANE GEL*** + water
OR 1 ***PVM ENERGY BAR*** + water
OR a combination of above (Keep in mind, no more than 30-60 g carbohydrates per hour)

DURING TRAINING (see guidelines at the end of the document for intake during events)

Research has indicated that sports drinks containing carbohydrates, electrolytes and vitamins are significantly better absorbed than water. Water alone provides fluid replacement but not energy, electrolytes, vitamins and other nutrients essential for performance. Guidelines for choosing the optimal supplement are listed below.

GOALS	GUIDELINES
Sustained energy	- Contains both slow and fast releasing carbohydrates - Contains 30-60 g carbohydrates per hour
Stable blood glucose level	- Contains slow and/ or intermediate carbohydrates - Contains 1-2% protein per solution (peptides are easily absorbed, which ensures that this amount of protein could be added to ***OCTANE XTR)***
Replenishment of fluid and electrolytes lost	- 400-900 ml water/ fluid per hour - Contains the electrolytes sodium, potassium, chloride, calcium, phosphorus and magnesium - Contains 6-10% carbohydrates
Prevention of gastro-intestinal discomfort	- Ensure that a hypo- or isotonic solution is consumed - Avoid excess carbohydrate intake (no more than 30-60 g/h)
Support the immune system	- Contains vitamins and minerals - Contains glutamine (Could be part of protein or additionally added)
Increased concentration/ mental alertness	- Ensure optimal blood glucose levels are maintained - Consider the intake of choline
Improved performances	- Include selected ergogenic aids for the specific sport
Shortening of recovery time	- Contains carbohydrates which may decrease the extent to which glycogen resynthesis after training has to take place - Contains protein peptides which promote the uptake of nutrients
Promotion of muscle synthesis	- Both training and muscle synthesis requires energy. The intake of carbohydrates and protein during training contributes to the total energy requirements for muscle synthesis - Protein peptides increase synthesis

***** Hypo- or isotonic refers to osmolality. Osmolality can be defined as the number of particles dissolved in water. Optimal absorption of fluids within the body is best when the solution equals the osmolality of interstitial fluids. Hypertonic solutions attract water into the gastrointestinal tract and may cause diarrhoea.

PVM RECOMMENDATION

There are various factors that influence hydration in athletes, making it impossible to prescribe fluid guidelines that will meet the needs of all athletes. **The general recommendation is to drink according to thirst.** You will have to determine the amount you are able to tolerate and to plan your intake accordingly.

It is recommended to start with ± 500ml ***Octane XTR*** OR 2 ***Octane gels*** with ± 500 ml additional water per hour. You may also add a ***PVM Energy bar*** or make use of a combination of different supplements. If carbohydrate requirements are met with sports drinks and sports gels, additional water may be taken according to thirst. Take care not to consume too much carbohydrates in the form of sports drinks, sport gels or sport bars during training. Most people can tolerate 30-60g carbohydrates per hour, without experiencing gastro-intestinal discomfort.

AFTER THE EVENT/TRAINING

The intake of carbohydrates and protein as quick as possible after training is crucial for the recovery of glycogen stores and the repair of muscle tissue. This initial period after training is called the window period during which the speed of nutrient uptake is fast. Guidelines for choosing the optimal supplement are listed below.

GOALS	GUIDELINES
Glycogen resynthesis/ replenishment	- Contains fast releasing carbohydrates for immediate recovery. The addition of slower releasing carbohydrates will prevent blood glucose fluctuations.
Protein synthesis/ building	- Contains 10-20 g protein
Fluid and electrolyte replacement	- Includes water/ fluid. One litre of water is required to replace 1 kg of body weight lost during training. - Contains the electrolytes sodium, potassium, chloride, calcium, phosphorus and magnesium - Contains 6-10% carbohydrates
Immune system support	- Contains vitamins and minerals, especially anti-oxidants (Vitamin A, C and E) - Contains 5 g glutamine per serving - Contains some protein that also supports the immune system

PVM RECOMMENDATION
It is recommended to consume the following as quick as possible after training: **- Training ≥ 90 minutes:** 75g ***REIGNITE*** in 600 ml water. **- Training < 90 minutes:** 50g ***REIGNITE*** in 400 ml water. **Alternatively:** - 2 portions ***FUSION*** **OR** 1 portion ***FUSION MASS*** **If a supplement is not available or required, the following food intake is recommended:** 2 Slices brown or white bread/ 1-2 hamburger rolls + 50g cheese/ 1-2 hamburger patties + water **OR** Balanced post-training meal (see example below)

Balanced meal 2-3 hours after the event:
This meal is important for optimal replenishment, even more so if you are going to training/ compete for consecutive days. It should contain both carbohydrates and protein. Remember to replace fluids lost during training (1-1.5 litre for 1 kg water lost during training).

SAMPLE MENU: POST-EVENT MEAL
1-1.5 cups cooked rice (preferably parboiled/Basmati) OR 1 cup pasta (preferably durum wheat type) OR 1 large potato, slightly cooled + 200 g fish / chicken / lean mince / steak at least + 1½ cup mixed veggies OR 2 cups salad + 1 cup fresh fruit salad OR 200 ml fruit juice

Protein supplements are best consumed before bedtime because the release of growth hormones is highest at night during sleep and in the early morning hours. Growth hormones play a role in lean muscle synthesis along with proteins. Protein provides the fuel, while growth hormones facilitate the process. Protein thus fuels protein synthesis process during sleep. Protein supplements are only recommended when protein needs are not met through the diet or occasionally after strenuous training. In such cases, 1 portion ***Protein XTR*** may be consumed 30 minutes before bedtime.

WHEN COMPETING IN MORE THAN ONE EVENT THROUGHOUT THE DAY

Athletes often find it difficult to determine what to eat and drink when they compete in more than one event per day. It is recommended that athletes stick to their habitual food and supplement intake, but that the timing thereof is

adjusted, based on competition times. The aforementioned “Pre-event Meal” refers to the meal prior to competition, whilst the “Post- event Meal” refers to food and supplement intake after the last event of the day.

EXAMPLE: 3 EVENTS DURING THE DAY

8:00	Balanced pre-event meal (see guidelines and example above)
9:00	± 500 ml ***OCTANE XTR*** – take a few sips every now and again (or refer to guidelines above)
10:00	***First event***
	After the event take a few sips ***OCTANE XTR*** every now and again until the next competition event. Max. intake is 500 ml/ hour
11:30	***Second event***
12:00	Balanced pre-event meal **within 30min after event**
15:00	Take a few sips ***OCTANE XTR*** every now and again. Max. intake is 500 ml/ hour. OR 1 ***PVM Energy Bar*** / Muffin + 200 ml fruit juice
16:00	***Third event*** *(last event)*
	50g ***REIGNITE*** directly after last event
18:30	Balanced post-event meal (see guidelines and example above)

Please note that this is only approximate guidelines. For a more individualised diet plan (taking age, length, body structure, gender, dietary preferences, training, etc. into account) or any other nutritional enquiries, please contact our Registered Dietitian for assistance.