

NUTRITIONAL STRATEGIES FOR RUGBY DURING TRAINING/COMPETITIONS

The purpose of any training and nutritional program should be to prepare the players and teams for peak performance in competition. Not unlike other sports, rugby players need rugby specific periodised conditioning and nutritional programs. To move beyond inherited talent or genetic potential, conditioning coaches/players must focus amongst other things on the physiological and metabolic adaptations required for peak performance. Providing dietary and training stimulus to appropriately stress homeostasis is critical for required and necessary adaptations (physiological, metabolic and structural).

PVM's nutritional guidelines and supplements are formulated to assist top athletes with synchronising periodised training and nutritional programs in order to reach specific training phase related goals.

Our product usage chart:

PRODUCT USAGE CHART					
	Primary Usage	Secondary Usage	Use BEFORE Training	Use DURING Training	Use AFTER Training
FUSION	Maintenance	Recovery	●		●
OCTANE / OCTANE GEL	Energy - Endurance Events	Recovery	●	●	●
OCTANE XTR	Energy - Strength Training & High Intensity Sports	Recovery	●	●	●
RE-IGNITE	Recovery	Carbo-loading	●		●
FUSION MASS	Growth & strength	Maintenance	●		●
PROTEIN XTR	Growth & strength				●
REACTOR	Strength, Power & Recovery		●		●

BEFORE THE EVENT/ TRAINING

BALANCED MEAL

The goal of the pre-event meal is to ensure that you start training 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	<ul style="list-style-type: none"> - Ensure adequate calorie intake. - Adequate amounts of slow to intermediate releasing carbohydrates 2-3 hours before the events AND both slow/intermediate and fast releasing carbohydrates 30min before the event.
Stable blood glucose level	<ul style="list-style-type: none"> - Include slow and/ or intermediate carbohydrates. - Include moderate amounts of protein. - Include small amounts of fat.

Optimal hydration status	- 200-600ml water/ fluid.
Prevent gastro-intestinal discomfort	- Avoid large quantities of fat and fibre. - Avoid foods known to upset your stomach. - Avoid food that you are allergic or intolerant to. - Avoid gas-forming food such as e.g. legumes, cabbage, broccoli, cauliflower, Brussels sprouts, cucumber, onions and artificial sweeteners e.g. sorbitol and mannitol.

SAMPLE PRE-EVENT MEAL: (4 HOURS PRIOR TO)

1-1½ cup **PVM MEALIE MEAL MIX** + 200ml Fruit juice

OR

1.5-2 cups All Bran + 250ml milk + 1-2 tsp sugar/honey/syrup+ 200ml fruit juice

OR

3-6 slices brown bread **OR** 2-4 brown rolls (not whole-wheat)
+ 5 slices lean ham **OR** 2 lean thin 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** 200ml 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 (i.e. 80g/10 scoops) **FUSION DRINK MEAL REPLACER with milk or water**
+ 1 large fruit (e.g. apple/pear/peach) **OR** 200ml 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)

TOP-UP MEAL: (2 HOURS PRIOR TO MATCHES ONLY, NOT TRAINING)

Choose from:

- Muffins (preferably not bran)/ scones/ flapjacks/ pancakes/ white bread + Syrup/ Jam
OR Low fat cheese/ cottage cheese.
- Bananas/ Other fruit
- PVM Energy Bar
- Banana bread with butter
- Low GI brown/white bread (not whole-grain) with lean cold meat/beef pastrami + lettuce
- Wraps cut into small sections with fresh salad ingredients (avoid raw onion), grilled chicken strips and low fat yoghurt dressing
- Brown/white bread with smooth jam + low fat cheese (should be ready prepared)
- Bovril/Marmite sandwiches (brown/white bread)

SUPPLEMENTS: 5-10 min prior to warmup:

OCTANE XTR (take a few sips every now and again)

OR 1 **OCTANE GEL** (preferably chocolate get with caffeine prior to games) + 250 ml water

OR a combination of above (Keep in mind, no more than 30-60g carbohydrates per hour). One Octane XTR serving contains 42g carbohydrates, thus only 1x500ml serving per hour is recommended.

DURING THE EVENT/ TRAINING

Research has indicated that sports drinks containing 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	- Include slow and fast releasing carbohydrates. - Take 30-60g carbohydrates per hour.
Stable blood glucose levels	- Include slow and/ or intermediate releasing carbohydrates. - Include 1-2% protein per solution (peptides is easily absorbed, which ensures that this amount of protein could be added to OCTANE XTR).
Replenish fluid and electrolytes lost	- 400-900ml water/ fluid per hour. - Include the electrolytes sodium, potassium, chloride, calcium, phosphorus and magnesium. - Include 6-10% carbohydrates.
Prevent gastro-intestinal discomfort	- Ensure a hypo- or isotonic solution*. - Avoid excessive carbohydrate intake (no more than 30-60g/h).
Support the immune system	- Take vitamins and minerals. - Include anti-oxidants such as vitamins A,C and E. - Include glutamine. - Proteins also supports the immune system.
Increase concentration/ mental alertness	- Ensure optimal blood glucose levels. - Include choline.
Improve performance	- Include selected ergogenic aids for the specific sport.

* 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 happens when the solution are equal in terms of osmolality in what naturally occurs in the body. Hypertonic solutions attract water into the gastrointestinal tract (stomach) and may cause diarrhoea.

PVM RECOMMENDATION

There are various factors that influence hydration in athletes and this makes it impossible to prescribe fluid guidelines that will meet all athletes' needs. The general recommendation is to drink according to thirst. You may need to determine the amount you are able to tolerate and to plan your intake accordingly.

It is however recommended to drink at least 350ml **Octane XTR ENERGY DRINK** during half time. 350-500ml will be sufficient to supply enough energy for the 2nd half of the game.

If you rather prefer water only, consume 1-2 Octane Gels + 250ml water for each gel during half time.

AFTER THE EVENT/ TRAINING

The intake of carbohydrates and protein within the first few minutes after training/events is crucial for the recovery of glycogen stores and the repair of muscle tissue. This initial period after exercise is called the window period during which the speed of nutrient uptake is fast.

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

PVM RECOMMENDATION

WITHIN 30 MINUTES AFTER EXERCISE/EVENTS

RECOMMENDED:

Training/Playing \geq 90 minutes: 75 g **REIGNITE RECOVERY DRINK** in 600ml water.

Training/Playing $<$ 90 minutes: 50 g **REIGNITE RECOVERY DRINK** in 400ml water.

ALTERNATIVELY:

2 portions **FUSION DRINK**

OR 1 portion **FUSION DRINK** + 1 **PVM ENERGY BAR**

1-2h AFTER TRAINING/EVENTS

Balanced meal: This meal is important for optimal replenishment, but even more so if you are going to exercise again the following day or if an event is more than one day. It should contain both carbohydrates and protein. Also remember to replace fluids lost during exercise.

SAMPLE MENU: Post-event meal

1-1.5 cups cooked rice (preferably parboiled/Basmati) **OR** 1-1.5 cups pasta (preferably durum wheat type)

OR 1-2 large potatoes, slightly cooled

+ at least 200g fish / chicken / lean mince / steak

+ 1½ cup mixed veggies **OR** 2 cups salad

+ 1 cup fresh fruit salad **OR** 200ml fruit juice

Alternatively: If you do not feel like eating:

: 1 Portion **Fusion Mass Meal replacement with milk** + 1 large Fruit

Protein supplements are best consumed before bedtime because the release of growth hormone is highest at night during sleep and in the early morning hours. Growth hormones play a role in the lean muscle synthesis along with proteins. Protein provides the fuel, while growth hormones facilitate the process. Protein at night thus fuels protein synthesis 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.

On hard/intense training days and competition days: 1 Portion (50g) Protein XTR pure protein supplement before BEDTIME

INTAKE OF ALCOHOL

Alcohol should not be consumed just prior to or during a match/serious training session (including the night before) as it may cause dehydration, poor fuel stores and impaired skills during play. Rehydrate and refuel with carbohydrates before you drink alcohol after exercise. It should be consumed no sooner than 2 hours after match because it acts as a diuretic and may indirectly interfere with your ability or interest to achieve the recommended amounts of carbohydrate required for optimal glycogen restoration. The injured rugby player, especially with soft tissue injuries or bruises, should refrain from alcohol intake for at least 24 hours after an event, as it may cause extra swelling and bleeding, delaying recovery, and in some cases even exacerbating the extent of the damage.

USE OF CREATINE

Do not use creatine to increase lean muscle mass. Creatine does not increase lean muscle mass. The main benefit of creatine is to assist training during maximal strength phases. Creatine causes water retention which makes muscle appear bigger, creating a false impression of actual muscle size. Only during hypertrophy training can one substantially increase the muscle size/ weight. Creatine is not primarily recommended during hypertrophy training because the anaerobic energy system is not the dominant energy system used during this training phase and it will hamper monitoring protocols to gauge the success

of the training regime. Creating containing products such as **PVM Reactor** is best suited to **use as a pre-workout during explosive gym training with the aim to improve strength and power output.**

Please note that this is only approximate guidelines. For a more individualised diet plan or any other nutritional enquiries, please contact our Registered Dietitian for assistance.

IDEAL SUPPLEMENT STACK

TIME	SUPPLEMENT
5-10 minutes before field training and before warm up for a game	<div style="border: 1px solid black; padding: 5px; display: inline-block;">OCTANE XTR</div> 
During field training and at half time during games	<div style="border: 1px solid black; padding: 5px; display: inline-block;">OCTANE XTR</div> 
Before and during explosive <u>gym</u> training	<div style="border: 1px solid black; padding: 5px; display: inline-block;">REACTOR</div> 
Directly after training/games (within 0-60min)	<div style="border: 1px solid black; padding: 5px; display: inline-block;">REIGNITE</div> 
Before bedtime on hard/intense training days and game days	<div style="border: 1px solid black; padding: 5px; display: inline-block;">PROTEIN XTR</div> 