

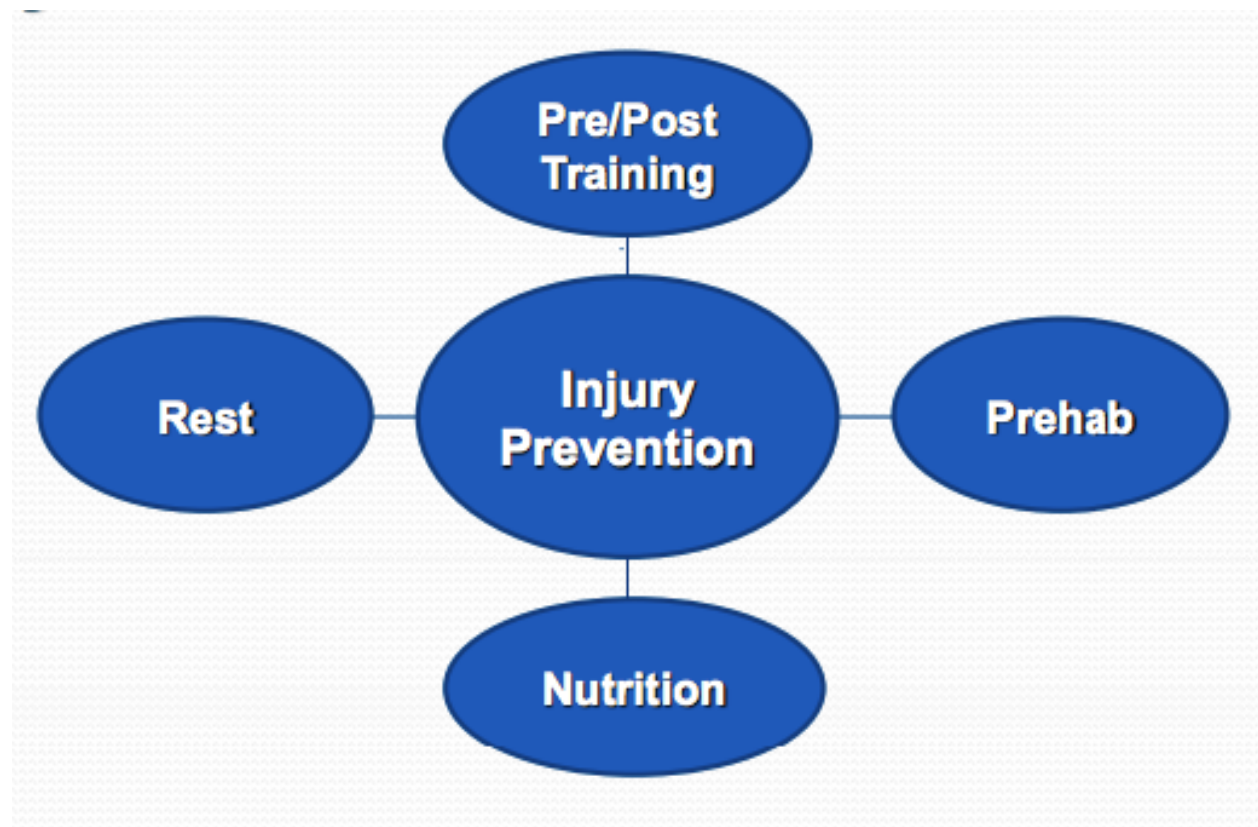


Sport Science and Medical Plan

Introduction

Sport science & medicine studies how the healthy body works during exercise to promote performance and the prevention, treatment and rehabilitation of injuries before returning to play protocol. Detailed in this document is our sport science and medical plan:

Injury Prevention



To minimize the risk of injury, the following actions must be taken:

- Appropriate warm-ups and cool downs.
- Pre-habilitation rather than rehabilitation.
- Become more aware of nutritional aspects of recovery.
- Respect time for recovery between matches.
- Plan your week to include days off, or to perhaps include active recovery days.

Warm Ups

- Raise core temperature of body
- Raise HR
- Increase Blood flow to major muscle groups, Quads, Hamstrings, Gastrocs.
- Prepare body and mind for match ahead.
- Should start from slow, large movements, working up to faster, more explosive movements.
- Dynamic stretching and functional movements desirable.
- Fluid intake should continue throughout the warm up.

Cool Downs

- Returns heart back to resting HR, reduce risk of post exercise heart attacks, eliminates production of stress hormones and returns BP to normal. (Stevenson, 2011)
- Removal of waste products via lymph nodes.
- Reduces DOMS.
- Should include activities like cycling, swimming
- Should last about 15-30 minutes.
- Activities should be performed at 30-60% of VO2 max
- Cold water immersion should be used directly after intense exercise.
- A time period of 5-20 minutes is beneficial to anaerobic recovery and muscle soreness.
- However further evidence is required to establish the best compromise of temperature and duration.

Injury prevention is made up of several key factors that all cross each other at some point. Research has proven that prehabilitation minimises the risk of Injury. Appropriate warm up and cool down strategies are highly Important pre and post training and matches. Accessing the best means of recovery via nutrition and recovery methods allows for quicker replenishment of fuels used by working muscles and allows body to adapt to physiologically.

Nurtitional Recovery

We encourage our players to have a well-balanced meal according to the different activities they perform each day. In example, on match days, day 1 would be heavy exercises and therefore, we recommend our players to match it with heavy meals too that are rich in protein and nutrients to help them recover. Other benefits:

- Helps our muscles recover from sustained periods of exercise.
- Players should be encouraged to replenish during half time and especially full time.
- Re-hydration levels should match those of pre match hydration.
- Pre and post match meals for home and away matches.
- Energy expenditure and carbohydrate requirements on match days tend to be higher than training days. (Burke 2010)
- Circumstances when teams travel, limit the choice of menu options and eating venues, however good sources of carbohydrates and proteins (post match) must be available. (Burke 2012)

Below is a nutritional table we show and explain to our players so they understand what they are putting in their bodies to aid and its purpose.

Food type	Utilised for
Carbohydrates	Fuel of muscles
Proteins	Repair of muscle fibres
Nutrients	For repair and growth and general living.

Note: Simple and Complex carbohydrates should be absorbed during pre-match. Simple carbohydrates provide a fast release of sugar, complex carbohydrates provide slow release.

Ideas for Pre/Post Match Meals:

Foods	Meals
Carbohydrates	Pasta, Breads, Sugars
Proteins	Fish, Meat, Poultry, Eggs, Milk
Nutrients	Fresh fruit, Fresh veg

Pre match meals should be taken 3 1/2 hours prior to game.


3pm kick off = 11.30am pre match

7.45pm kick off = 4.15pm pre match

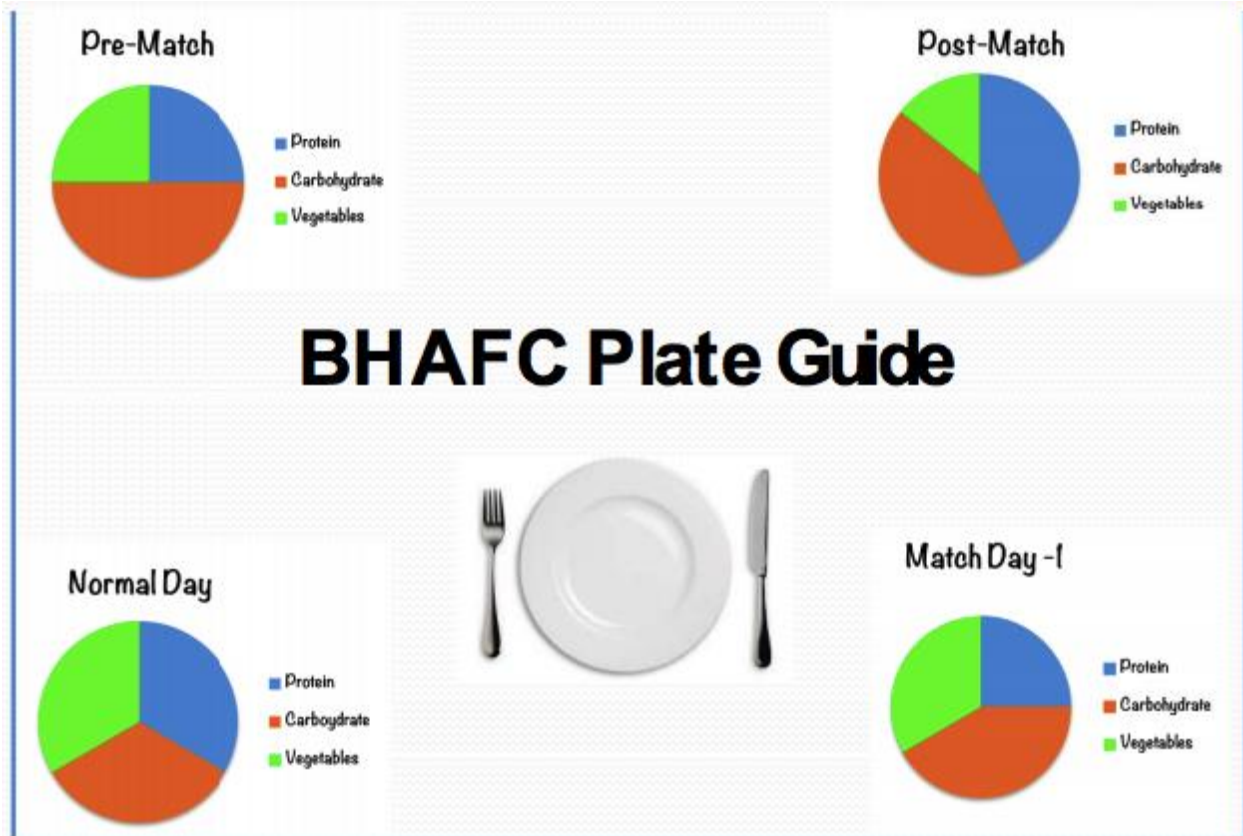
Post match protein bars available in dressing room before players have post-match meal.

Food Type Information

Carbohydrates		Proteins		Vegetables	
Pasta	Cereals	Chicken	Milk	Peas	Cabbage
Potatoes	Cous Cous	Beef	Lamb	Sweet corn	Sprouts
Bread	Quinoa	Fish	Yoghurts	Broccoli	Swede
Rice	Sweet Potatoes	Turkey	Cheese	Carrots	Aubergine
Noodles		Eggs	Nuts & Seeds	Spinach	Courgette
		Duck	Pork	Cauliflower	Kale
				Runner beans	Broad beans
				Asparagus	



Meal Guide



Active Recovery

The participation of low intensity exercise the day after a match.

Includes exercises like, foam rollers, static stretching routine, low intensity CV programme, swimming, soft tissue treatments.

Active recovery reduces blood lactate levels quicker than normal rest. (Mercier J, 1998)

Active recovery improved psychological effects by promoting relaxation. (Mashiko et al, 2004)

Low intensity exercise increased blood flow, which in turn Improved removal of lactate acid. (Micklewright D, 2003)

Pre-habilitation

- A form of strength / balance training which aims to prevent injuries.
- Aims to strengthen muscles around the joints

- Can be utilised throughout the training week, targeting
- Lower and upper limbs, as well as core stability.
- Most effective time is in the morning prior to training.

Pre-habilitation Sessions

- 2 mornings per week. Depending on your schedule
- Both sessions include core stability exercises
- Other sessions targeting upper and lower body muscles.
- Lower limb exercises and strengthening early in the week.
- Upper body later in the week.
- Duration before training 45 minutes.

Pre-habilitation Exercises

Upper limb	Lower limb	Core stability
Shoulder rotation External/Internal Rotator Cuff	Leg press Quadriceps	Side touch downs Internal/External obliques
Bench Press Pec major/minor	Squats Lower back/hamstrings	Plank Rectus abdominus
Bent over row Rhomboids	Leg Curl Hamstrings	Jack Balls Abdominals/Hip flexors
Shoulder press Trapezius	Calf raises Gastrocnemius	Supermans Erector spinae
Pull ups Latissimus dorsi	Lunges Glutes/hipflexors and extensors	Bridge Glutes/abdominals