



IRFU (Ulster Branch) Senior Player Resource Pack

Performance Nutrition

Sum up!

Nutritional strategy - support your training, match play and immune health.

1. Carbohydrates - main fuel source however that does not give you a licence to overload - Match your energy needs to your training cost!
2. Timing and type of protein important – 1-2 hours after high intensity exercise for muscle adaptation & maintenance.
3. Dehydration limits training & performance - monitor hydration status via your urine colour or body weight measurements around training & match play.

Match strategy:

3-4 hours before – Slow release carbohydrates + fluids

45-30mins before – fast release carbohydrates (sports drink/sweets/equiv.)

During – small amount of fast release carbohydrates + fluids (sports drink/sweets/equiv.)

1-2 hours after – protein + carbohydrates + fluids

Alcohol will delay recovery from high intensity exercise and can compromise subsequent training/ match play. **Limit intake or 1 hour post-match embargo?**

Considering **supplements**? Ask yourself -

1. Do you consume a balanced varied diet? **Supplements can't and won't compensate for a poor diet.**
2. Is there evidence to back up the claim? If not why not?
3. Have you checked the supplement has been tested for prohibited substances?
4. Have you researched the manufacturer and the origin of the supplement?
5. Why are you taking it? Do you need it?
6. Are there dietary alternatives that will yield the same result?

Developed for IRFU (Ulster Branch) by Dairy Council for Northern Ireland Sports & Exercise Nutritionist. To be used as a guide for nutritional requirements around high intensity training and match play for senior rugby players, in conjunction with 2015 Performance Nutrition Workshops.



Introduction

Good nutritional practices around training and match play will help:

- Optimise training gains
- Maximise performance
- Support immune health during periods of regular high intensity training

Nutritional goals -

1. Sufficient energy to support training, optimise training gains and maximise performance.
2. Moderate protein for muscle adaptation and development.
3. Minimise effects of dehydration.

Energy needs

Your energy needs are a balance between what is needed for basic physiological function and the energy costs of your training and competition.

Weight gain – create small energy surplus (increase daily intake, ensure training is tailored to support lean muscle mass gains)

Weight Maintenance – intake and cost must be similar

Weight loss – create small energy deficit (decreased intake & increased cost of training)

Weight Gain

- +0.5kg/week
- +500kcal/day
- Increase overall energy intake - mix of carbohydrates and protein (over reliance on protein may be counterproductive if training volume increased as protein will be used for energy)
- Keep a record of your food intake to identify places where you could add in a snack/small meal
- Spread protein throughout day
- Liquid 'meals' e.g. milk based Smoothies



Weight Loss

- -0.5kg/week
- Create small deficit (500kcal/day max)
- Increase training
- Decrease portion sizes do not skip meals
- Do not eliminate carbs esp. on training days
- Include protein in every meal
- Bulk out meals with salad/veg
- Eliminate/limit alcohol intake
- Do not eliminate dairy products
- Don't skip meals!

Nutrient needs

Carbohydrates

- Carbohydrates are your main source of energy
- Requirements need to be matched to your training costs
- Insufficient carbohydrate intake can compromise training output, sporting performance and immune health
- Excessive carbohydrate intake can lead to weight gain
- A moderate approach is the best

Approximate amounts around training/match play:

Time	Carbohydrate target
Pre-match/exercise >60mins	1-4g/kg (1-4 hours pre-match)
During match	Small amount including mouth rinsing with sports drink
Recovery 24 hr+ between match/training	Normal carbohydrate needs – meal/snack within 1-2 hours post-exercise
Recovery <8 hours between matches	1-1.2 g/kg every hour for first 4 hr then resume daily fuel needs

(Source: Adapted from Australian Institute of Sport Factsheet Carbohydrates – http://www.ausport.gov.au/ais/nutrition/factsheets/basics/carbohydrate_how_much)

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The Nutrition Working Group of the International Olympic Committee recommend the following daily carbohydrate intake for specific training requirements:

Training Load		Carb Intake
Light	Light/skill based	3-5g/kg
Moderate	>1 hour/day	5-7g/kg
High	1-3 hours/day	6-10g/kg
Very High	4-5 hours/day	8-12g/kg

(Source: *Nutrition for Athletes*, R. Maughan and L. Burke, Nutrition Working Group of the International Olympic Committee, 2012)

Note: carbohydrate snack/meals are important around your training or matches lasting 60 mins or more but should be taken into account within your overall daily intake.

Be aware of your training intensity and duration. A carbohydrate rich snack after a light/skill based training session is not necessary as you won't have drained your muscle carbohydrate stores.

Examples of approximately 50g of carbohydrate

Potatoes	350g (3 medium potatoes)
Sweet potatoes	350g
Pancakes	150g (2 medium pancakes)
Bread	100g (4x slices white/ 3 thick wholegrain)
Pitta bread	100g (2 pitta pockets)
Boiled rice	180g (boil in the bag rice usually 125g)
Pasta/noodles boiled	200g
Baked Beans	440g (large can)
Lasagne	400g serving
Banana	2 medium-large
Raisins	70g (snack box = 28g)
Milk	1 litre
Flavoured milk	560ml
Reduced fat yogurt/natural yogurt	800g (approx. 4 individual pots)
Flavoured low fat yogurt	350g (approx. 2 individual pots)

(Source: *Adapted from Australian Institute of Sport Nutrition Factsheet – Carbohydrates – taken from Peak Performance: training and nutritional strategies for sport J. Hawley and L. Burke. Sydney: Allen & Unwin*)

For more examples visit -

http://www.ausport.gov.au/ais/nutrition/factsheets/basics/carbohydrate_how_much

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Protein

Function – muscle development and adaptation

- Increased protein needs when in regular high intensity training
- Spread intake throughout day
- No need to go overboard
- Increased need does not justify supplementation
- Type of protein and timing are most important!
- Consume within 1-2 hours post-exercise (particularly important if next training session is within 8 hours)

Note: Recommendations for the amount of protein to consume post-exercise for optimal muscle development and recovery ranges from 15g – 30g. This will depend on a number of factors including the size of the player, the type of training undertaken and training goal.

Muscle recovery and development continues for 24 hours post-exercise so use your common sense when considering your post-exercise snack.

Sources of approximately 10g Protein

Baked Beans (reduced sugar & salt)*	220g
Wholemeal bread*	2 thick slices
Nuts	60g
Eggs	2 (small)
Reduced fat humus*	100g
Peanut Butter	2 heaped tablespoons
Milk	300ml
Chickpeas*	130g
Tuna in brine	50g
Reduced fat cottage cheese	100g
Porridge with milk*	35g & 220ml respectively
Fillet of salmon	60g
Chicken Breast	1/3 small fillet
Sirloin Steak	1/3 steak
Tuna in brine	¾ small can

* *Good source of carbohydrate*

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Hydration

Exercise-induced dehydration is normal in high intensity exercise however you must limit it where possible as it will limit your training and performance.

Effects:

Health	Performance
Headaches	Decreased speed
Nausea	Decreased strength
Dizziness	Decreased endurance capacity
Constipation	Reduced accuracy
Fatigue	Reduced decision making ability
	Reduced concentration
	Reduced blood flow
	Faster use of energy stores

Monitor your own hydration:

1. Measure body weight pre and post training to assess losses (1kg=1L)

Weight Before – Weight After = Weight/Fluid loss

Weighing rules:

1. Weigh yourself with as little clothing as possible (especially important after!)
2. Empty your bladder before weighing
3. Weigh 3 times to ensure reading is accurate (if possible!)



2. Urine Colour (aim is 1 or 2 on urine colour chart below)

1	Hydrated
2	
3	Dehydrated
4	
5	
6	Severely Dehydrated
7	
8	

Hydration Strategy:

- Approximately 2.5 L/day
- **Start hydrated** (400-600mls 4 hours before exercise)
- **Stay hydrated** (150-250mls every 15-20 minutes of exercise)
- **Rehydrate** (1500mls for every 1kg over 4-6 hours post exercise)

Fluid Options?

Rehydration fluid should contain electrolytes (sodium, potassium etc.) that are lost via sweat.

Water

Not ideal for rehydration post high intensity, long duration exercise as it is low in the electrolytes lost via sweat. Bottled water will be higher in these electrolytes than tap water.

Sports drinks

These should only be used before/during/after high intensity exercise lasting 60 minutes or more. They are high in sugar, approximately 1 heaped teaspoon of sugar per 100ml, which can help delay the onset of fatigue during high intensity exercise.



Diluted squash

Source of carbohydrates (depending on variety – no added sugar variety will have little/no carbohydrate) and electrolytes to help with energy provision and hydration before/during/after exercise. Adding heaped teaspoons of sugar and a pinch of salt to make your own 'sports drink'.

Milk

Milk is a natural source of some of the electrolytes (sodium & potassium) lost via sweat, it contains small amount of carbohydrate and is high in protein. This will help with post-exercise rehydration, replenishing muscle carbohydrate stores and muscle recovery and development.

Nutritional Strategy

1. Early morning session

- Never train on an empty stomach!!
- Something small:
 - Glass of fruit juice (250ml can supply approx. 22g sugar)
 - Yogurt, sliced fruit, small handful muesli
 - Medium slice seeded/brown bread with jam or peanut butter
 - Cereal bar
 - Small bowl of cereal with milk

2. Away matches

- Plan ahead!!
- Bring your own snacks & drinks bottles
- Carbohydrate rich snack before bed - 2 slices of brown wholegrain bread/small bowl cereal with milk/yogurt
- Sleep strugglers:
 - Walk/swim 3 hours before bed
 - Keep your room cool

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- Don't nap for longer than an hour – make sure it is before 5pm

Top Tip!!! Call ahead to hotel and ask if they can leave out a toaster and bread/yogurts/cereal for players to have when they arrive if you are going to arrive after the restaurant closes!

Portable food ideas –

- Breakfast cereal
- Cereal bars
- Rice cakes/crackers
- Dried fruit & nuts (check for allergy within team)
- Meal replacement bars
- Carton of milk

3. Match day

- Carbohydrate rich food and snacks
- When?
 - Evening before (small snack before bed)
 - Pre-match snack (1-4g/kg carbs in the 4 hours pre match)
- Hydrate (400-600mls over 4 hours pre match)

PRACTICE!!! See how much fluid and carbohydrate works for you!

4. During the match

- Strategy = Top up fuel + Top up fluid
- How?
 - Sports drink - 6-14g sugar/100ml – check the label
 - Sports gel - 25g per sachet
 - Dilute squash with added sugar - heaped teaspoon = 5g approx.
 - Dilute squash/water with a jaffa cake - approx. 6g sugar per cake – similar to 100ml of sports drink

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- Water + jelly babies – approx. 5g sugar per sweet

5. Recovery

- **Aim:** Refuel, muscle repair, rehydrate!
- **What?** Protein, **carbohydrate** and fluid!
- 1-2 hour window!
- 15-30g protein, 1g/kg/hour carbs first 4 hours if less than 8 hours between matches/sessions

Recovery considerations:

- Duration of exercise?
- Intensity of exercise?
- Goals of the session
- Time of day?
- Can your next meal be your recovery?
- Time-frame between sessions? Less than 8 hours?

Dietary examples 15-20g Protein/50-75g Carb:

- | | |
|--|---|
| • 500-750ml low fat flavoured milk | • 2 medium pieces of fruit/1 large banana |
| • Thick brown bread sandwich with salad and lean meat | • 1 bagel 1 teaspoon of peanut butter/jam/honey |
| • 400g flavoured yogurt | • 2 medium pancakes |
| • Large (300g) baked potato low fat cheese and baked beans | • 300mls of drinking yogurt |
| • Small tin baked beans & 2 slices of brown bread toasted | • 60g breakfast cereal & 150mls milk |
| | • 500ml milk & medium banana & muesli bar |

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Alcohol

UK Upper limits of intake:

Adult male - 3-4 units (24-32g)

Adult female – 2-3 units (16-24g)

Things to remember:

- Source of energy (7kcal/g)
- May increase short term appetite
- Some alcoholic beverages contain added sugar which will increase energy content
- Consumption of strong alcoholic drinks can lead to dehydration
- Likely to increase recovery time by disrupting/displacing post-exercise recovery strategies
- Increased injury recovery due to increased swelling and bleeding

Supplements

Remember: Under IRFU policy, supplement (protein, creatine, caffeine etc.) usage U18 is not and should not be recommended for the young rugby player by anyone working with them.

Players will benefit more from good eating and drinking practices around their training and match play.

Considerations before taking supplements:

1. Your health and general diet?

Supplements can't and won't compensate for a poor diet.

2. Scientific Evidence?

Can the supplement company back up claims with clear scientific evidence? If so they will be all too happy to relay it to you.

Claims that seem too good to be true they usually are.

3. Doping

Provincial and All Ireland League players are all eligible for dope testing.

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World Anti-Doping Agency (WADA) and the International Rugby Board (IRB) enforce **strict liability**.

You are solely responsible for any banned substance **you use, attempt to use, or is found in your system**, regardless of how it got there and whether there was an intention to cheat or not.

This includes medications! Remember to check them using one of the following;

www.globaldro.com – medication checker (UK/USA/Canada)

Download Irish Sports Council medication checker app (IRE)

Asthma? Must prove clinical need for your inhaler - Dr Michael Webb is the designated doctor in Northern Ireland - webbm@doctors.org.uk

Changes under 2015 WADA Code:

- The minimum sanction for deliberate cheating is now 4 years for the first offence
- There is less leniency for carelessness – likely to receive a 2-year ban for inadvertent doping
- To get any reduction in sanction from 2 years, athletes must have substantial proof that they were not at fault or intending to cheat
- Evasion of, failure or refusal to provide a sample for dope testing will result in a 4 year ban from all sport.
- If you help to cover up, are involved in, or support someone else to avoid being detected for an Anti-Doping Rule Violation, you may be banned

For further information:

www.wada-ama.org – World Anti-Doping Agency

www.irishsportsCouncil.ie/Anti-Doping - Irish Sports Council

www.irbkeeprugbyclean.com – International Rugby Board Anti-Doping

www.ukad.org.uk – UK Anti-Doping

4. Source

Supplements are often costly, especially when used often. This can lead to temptation to look for cheaper brands or opt for offers. **Be careful!!**

Research the manufacturer of the supplement and know the origin of the product. Products marketed under the same brand in different countries do not necessarily have the same ingredients.

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Check for the Informed Sport Logo – these products have undergone rigorous testing at a world class sport anti-doping laboratory and have been found clear of all substances on the WADA prohibited substances list.

www.informed-sport.com – list of certified manufactures and products



5. Dietary Alternatives

Are there dietary alternatives to the supplement? (check nutrient section)

If so opting for the dietary alternative may prove to be more beneficial in terms of your health. Putting food first will ensure you are consuming a variety of nutrients necessary to support your health which in turn will help support your training and performance.

They make require more effort and planning however in the long run will be worth it.

Fast food is convenient but it doesn't mean it is right.

Weigh up the advantages and disadvantages and make an informed choice!

Pro	Con
Potential Performance Benefit	Can be expensive
Convenient	Potential Contamination/Doping
Fast Nutrient Delivery	Health Risks – contaminated substances
Useful when travelling	Cant/won't compensate for poor diet
Useful when appetite is suppressed	Single nutrient delivery

Questions?

Contact Stephanie Ingram at sportsnutrition@dairycouncil.co.uk