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Practical Sports Nutrition: Food for Athletes and Sports People

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www.performancefood.co.uk

Athlete Lifestyle: developing Elite Athlete habits & behaviours

- Training and competition schedules
- School, university, work
- Rest and recovery
- Sleep
- **Nutrition** – eat like an elite athlete



Goals of Sports Nutrition

- Support training schedules and physiological adaptations
- Individual nutritional needs vary depending on the particular sport or activity and the level at which a person competes and trains
- Performance
- Maintain long-term health and longevity of sporting career
- The IOC Consensus statement on sports nutrition (2010)



Nutrition Performance Plan



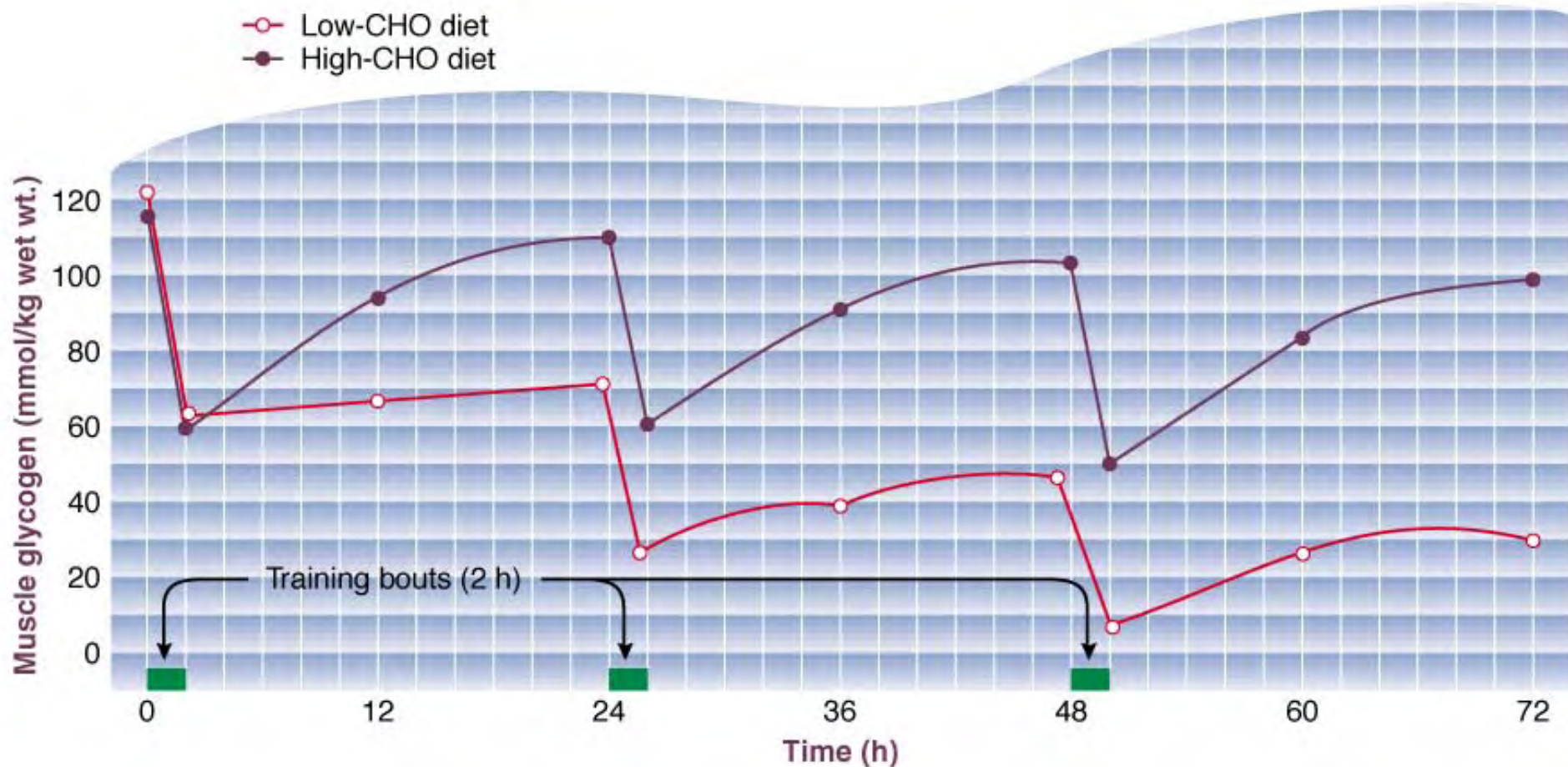
Performance Nutrition Goals

- Carbohydrate goals
- Protein goals
- Iron status
- Personal hydration strategy
- Body composition
- Immune health
- Bone & joint health
- Travel nutrition
- Competition day eating and drinking strategy
- Supplements & ergogenic aids



Carbohydrate to support training and recovery

- Maintaining adequate glycogen stores
- Recovery after training/competition
- Delay fatigue in competitions



Carbohydrate Goals: Quantity and Timing



Eating to Train and Eating to Recover

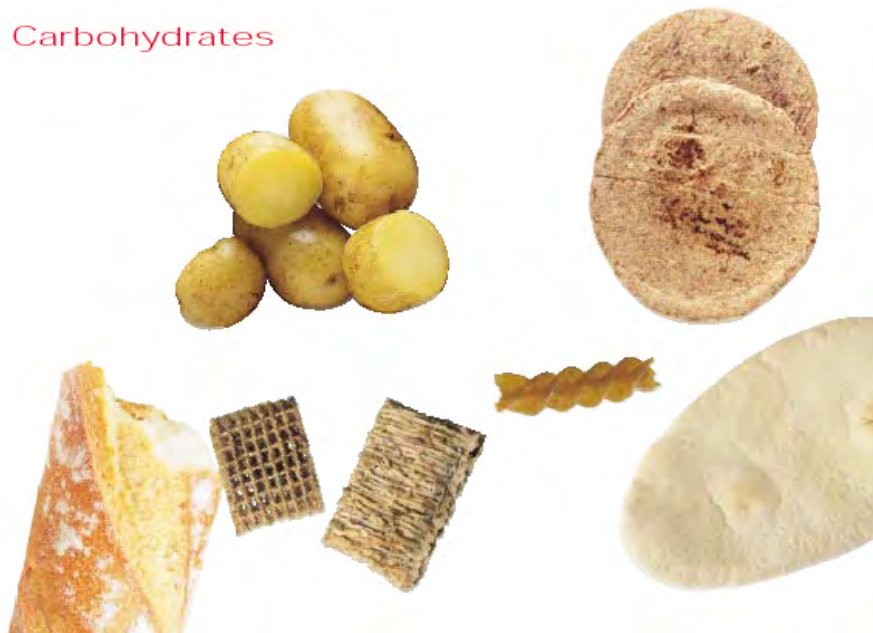
- Immediate recovery after exercise
 - 1-1.2 g/Kg per hour
- Daily recovery: moderate duration/low intensity training
 - 5-7 g/Kg per day
- Daily recovery: moderate to heavy endurance training
 - 7-12 g/Kg per day
- Daily recovery: extreme exercise programme (4-6 plus hours/day)
 - 10 -12 g/Kg per day

Eat to compete!

Fast Meals and snacks

Maintain **good energy** (muscle glycogen reserves) by including a **starchy carbohydrate** food at each meal

Carbohydrates

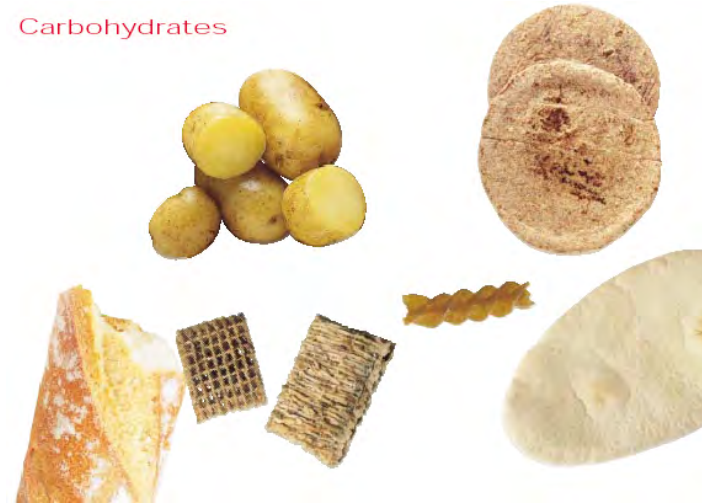


Fast Meals and snacks

Italian or bread pizzas
made an ideal fast
lunch or snack

2 slices provide
30gms protein
77gms carbs
9.8 gms fat

Carbohydrates



Snacks Providing ~ 50gm Carbohydrate Energy



50gm carbs for 40p



46gm carbs for 20p



50gm carbs for 36p



50gm carbs for 56p



50gm carbs for 80p



50gm carbs for 10p

Carbohydrate goals: Quality and timing

- ❑ Low GI carbohydrate foods with meals on a day to day basis can support body fat reduction, e.g. porridge, butternut squash, sweet potato, basmati rice, pasta, bean salads
- ❑ High GI carbs e.g. jacket potato, bread, ripe bananas, for more rapid refuelling between sessions
- ❑ High GI compact carbs for glycogen loading pre-competition and rapid refuelling between events



Energy Supplements

- Sports bars and gels provide a compact fuel source during prolonged training
- Convenient, portable and the research evidence for their use is well supported
- However, they may often be used to replace whole foods which provide nutrients other than carbohydrate and tend to be more expensive



Fluid Choices: Comparison of Drinks

per Litre

Drink per Litre	Calories	Carbs (g)	Electrolytes	Comment
Sugar Free Squash	0	0	0	Low cal choice No electrolytes
Ordinary squash	200	50	0	Provides carbs No electrolytes
Fruit juice	400	100	0	Not suitable for rehydration
Sports drink	180 -220	60 - 80	Yes	Best choice for rapid rehydration
Energy Drinks	730	179	0	Not suitable for rehydration. Useful for refuelling





HOW MUCH DO I NEED TO DRINK?

Hydration Monitoring

- Pre and post exercise weighing
- Assess fluid requirements under different conditions
- Match sweat losses with appropriate amount and type of fluid
 - Consume 1.5Litres fluid for every 1Kg body mass lost



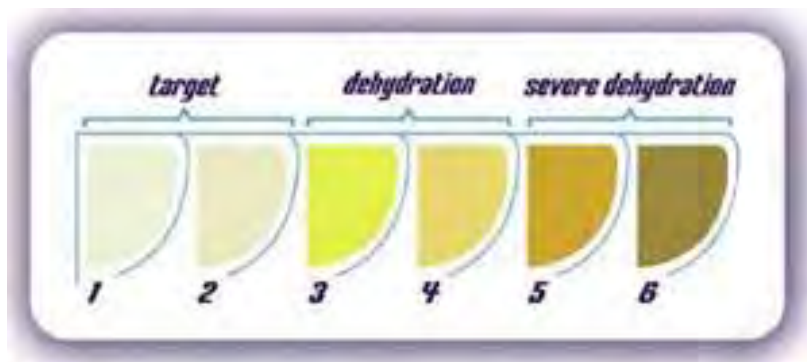
Am I drinking enough?

NO!

If you have lost more than 2% of body mass during exercise, and your urine colour is 4 or more throughout the day

YES!

If your weight loss during exercise is minimal and urine colour is 3 or less throughout the day



Protein Goals

- The IOC Consensus statement on sports nutrition (2010) recommends an adequate intake of foods or snacks that contain high-quality proteins throughout the day for muscle growth and repair.
- Usually this can easily be achieved from everyday foods

Meal	Food	Kcal	Protein	Carbs	Fat
Breakfast	Cereal + milk (skimmed) 2 x toast	380	16.0	66.0	6.0
Lunch	Baked beans on 2 x toast	450	28.0	90.0	5.0
Dinner	Chicken (200gm) in sweet & sour sauce + rice + veg	600	70.0	100	6.0
After Training	1 Pint of skimmed milk + milkshake flavouring	364	17.7	74.0	1.8
TOTAL		1794	132	330	18.8

Provides ~ 1.6gm protein per Kg for an 80Kg athlete

Protein Goals: vary protein sources over the week

- Lean red meat 1-2 x a week as a rich source of iron
- Chicken and turkey are healthy low fat options. Turkey is also a rich source of *Beta alanine* - a natural intra-cellular buffer which is helpful when doing high intensity training sessions
 - recipes using turkey mince
 - strips of turkey breast in stir frys.
- Oily fish 1 – 2 x week to provide omega 3 fatty acids e.g. salmon, tuna, tinned sardines or mackerel
- Nuts are a very useful source of important essential antioxidants
 - Walnuts are a great source of Vit E
 - Brazil nuts for selenium



Include Iron Rich Foods to Maintain Good Iron Status

Important to maintain good ferritin stores to support the physiological demands of training in particular at altitude

- Increase intake of iron rich foods, in particular haem iron sources:-
 - Steak, or lean red meat 2-3 times/week
 - Liver onions and gravy 2 x month
 - Eggs – scrambled, poached, omelette/frittata
- Other useful non-haem sources include:
 - Dark green vegetables, spinach, broccoli, frozen peas
- Iron supplementation (ferrous sulphate taken with Vit C) may also be necessary



Eat to Compete!

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Fast Meals and snacks

Maintain good iron status by eating lean red meat at least 1x week, and including eggs, green veggies and fortified breakfast cereals in your diet



Performance Food Pizza
Omelette

Performance Food Lean Burgers

38gm protein

65gm carbs

Less than 5% fat

Excellent source of iron

Altitude Training at Font Remau

“My diet has been strict, mainly protein (lots of steak) and pasta with vegetables of course! I've always preferred my steak to be on the rare side, however there's a restaurant nearby where their idea of a 'medium-rare' steak is to barely cook it....I mean the steak is practically still bleeding when it's served. At one point I thought it was going to get up and walk off my plate! Still, being an athlete the rarer the better for me”

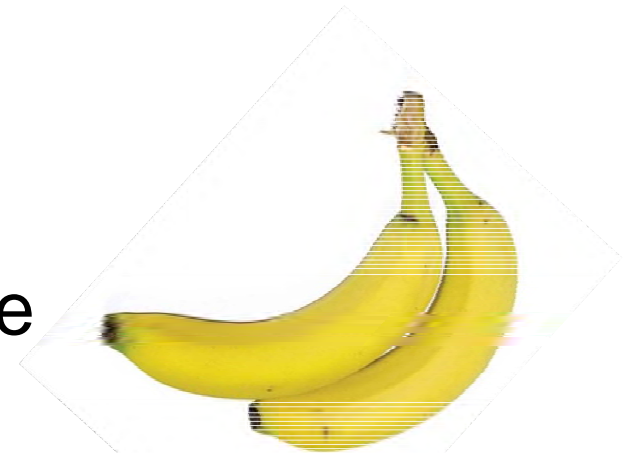


Mo Farah Team GB 1500m, 3000m, 5000m

Mo Farah's Blog 22nd July 2010

Timing of Protein and Carbohydrate Intake Matters for Recovery and Protein Synthesis

- 10-20gms of protein – **with carbohydrate** (1gm per Kg body mass) within 1 hour after exercise



The Role of Milk in a Sports Diet

- Protein source
 - Casein
 - Whey
- Rehydration
 - Fluid & electrolytes
 - Potential role for protein (plasma osmolality)
- Recovery
 - Protein & carbs



Performance Food top tip for recovery after training



- 1 pint semi-skimmed milk for protein and carbs
- Use milk shake flavour for extra carbs
- Include a banana for the ideal combination!



Performance Food Protein Recovery Shake



- 1 pint semi-skimmed milk
- Add 50gms skimmed milk powder to double the protein
- Use milk shake flavour for extra carbs
- Provides 99gms carbs, and 20-35gms protein for around 80p

Bone & Joint Health

- Healthy bones need a good supply of calcium & vit D.
- Vitamin D deficiency is resurfacing as a key concern amongst those with a reduced intake of foods rich in vitamin D and reduced sun exposure
- Elite athletes with chronic low energy intakes and low circulating vitamin D levels may be more prone to stress fractures and problems related to sub-optimal bone density
- Milk and dairy foods are a useful source of calcium
- **Key Dietary Sources of Vitamin D**
 - Oily fish
 - Fortified margarines
 - Eggs
 - Fish oil supplements
 - Vitamin D supplement providing 5-10 μ g Vitamin D3



Immune Health

- Hard training resulting in high levels of stress hormones may compromise the immune system and increase the risk of illness and infection in athletes
- The best evidence supports the use of a high carbohydrate diet, which lowers stress hormone levels, and promotes recovery between training.
- Emerging research suggests a beneficial effect for probiotic drinks and prebiotic supplements and foods in improving intestinal tract health, enhancing the immune system
- Use 2 weeks prior to travelling



Performance Foods for Athletes

- Anthocyanins are powerful antioxidants found in **purple** fruit & veg
- Can help protect the body against stress of hard training

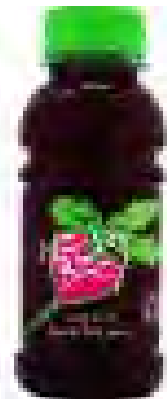
Recover quicker with cherries & berries!



Performance Foods for Athletes

- Beat fatigue with **beetroot!**
- Nitrates in beetroot can delay fatigue

Power up your training by eating beetroot or beetroot juice



Food for Athletes & Sports People

- **Milk** and cereal as good as expensive sports drinks in boosting performance, claim scientists (Telegraph May 2009)
- Chocolate-flavoured **milk** speeds up recovery as well as expensive sports drinks: Football players would be better off drinking chocolate milkshake after a game than expensive recovery drinks, claim scientists (Telegraph June 2009)



Combine cereal, milk, nuts & berries to create an ideal performance breakfast!

Competition Day Food



- Always take a supply of your own foods & drinks
- If you feel nervous and cannot eat, experiment using sports drinks and flavoured milk drinks

Fuelling your Training and Races

performancefood  **Example Weekly Nutrition Plan for XC Runners**

Meal	Day1	Day2	Day3	Day4	Day5	Day6 REST DAY	Day7 RACE DAY
Breakfast	Cereal e.g. Weetabix, shredded wheat or porridge with added dates, raisins or chopped banana for extra energy Semi-skimmed milk Toast or bagels with jam or honey for extra fuel if required					Fruit Juice or Fresh Fruit Cereal e.g. Weetabix, shredded wheat or porridge with added dates, raisins, Semi-skimmed milk Toast and honey	
Mid-am snack	Fruit & Nut mix Cereal bar Fruit e.g. Orange or banana					Ribena drink Scotch pancakes Jaffa cakes Sweets for extra fuel	
Lunch	Chicken + salad sandwiches/pittas Scotch pancakes Yoghurt	Jacket potato & beans & cheese Fruit & yoghurt	Cheese and salad sandwiches Mullerice Fruit	Tuna + pasta bake with sweet corn Fruit & yoghurt	Baked beans on toast Fruit & Yoghurt	Italian bread pizza slices Mullerice	Sports drink RACE Milkshake and fruit for recovery
Pre-training Snacks/drinks (1-2 hours pre-training)	for extra fuel before training use a Ribena drink, Malt Loaf /Scotch Pancakes or banana. Alternatively a bowl of cereal and milk is ideal Sports drink e.g. Go-Electrolyte, Lucozade Body Fuel, Powerade or diluted squash during training					Fresh Fruit Tuna sandwiches and jaffa cakes or scotch pancakes	
Post –Training recovery (within 30 minutes)	Water or Sports Drink Milk or flavoured milk drink Fresh Fruit						
Evening Meal Ideas	Pasta Bolognese Broccoli	Sweet and sour chicken with rice and vegetables	Chilli con carne + Rice or Jacket potato	Lean burgers in a granary bun with salad Angel delight	Salmon Broccoli and new potatoes	Chicken or tuna pasta	Roast dinner with vegetables and potatoes
Dessert ideas	Fruit salad + ice cream	Fruit berries and yoghurt	Hot chocolate with marshmallows		Banana custard		Fruit crumble and custard

Suggested weekly balance

Lean red meat 3 x week (try including liver and onions 1 x month)

Oily fish 2 x week



Thank you

- IFST for the inviting me to present today
- Conference organisers for being such excellent hosts

FOR MORE INFO...

Fact sheets

Booklets

Meal and snack ideas

Membership benefits



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