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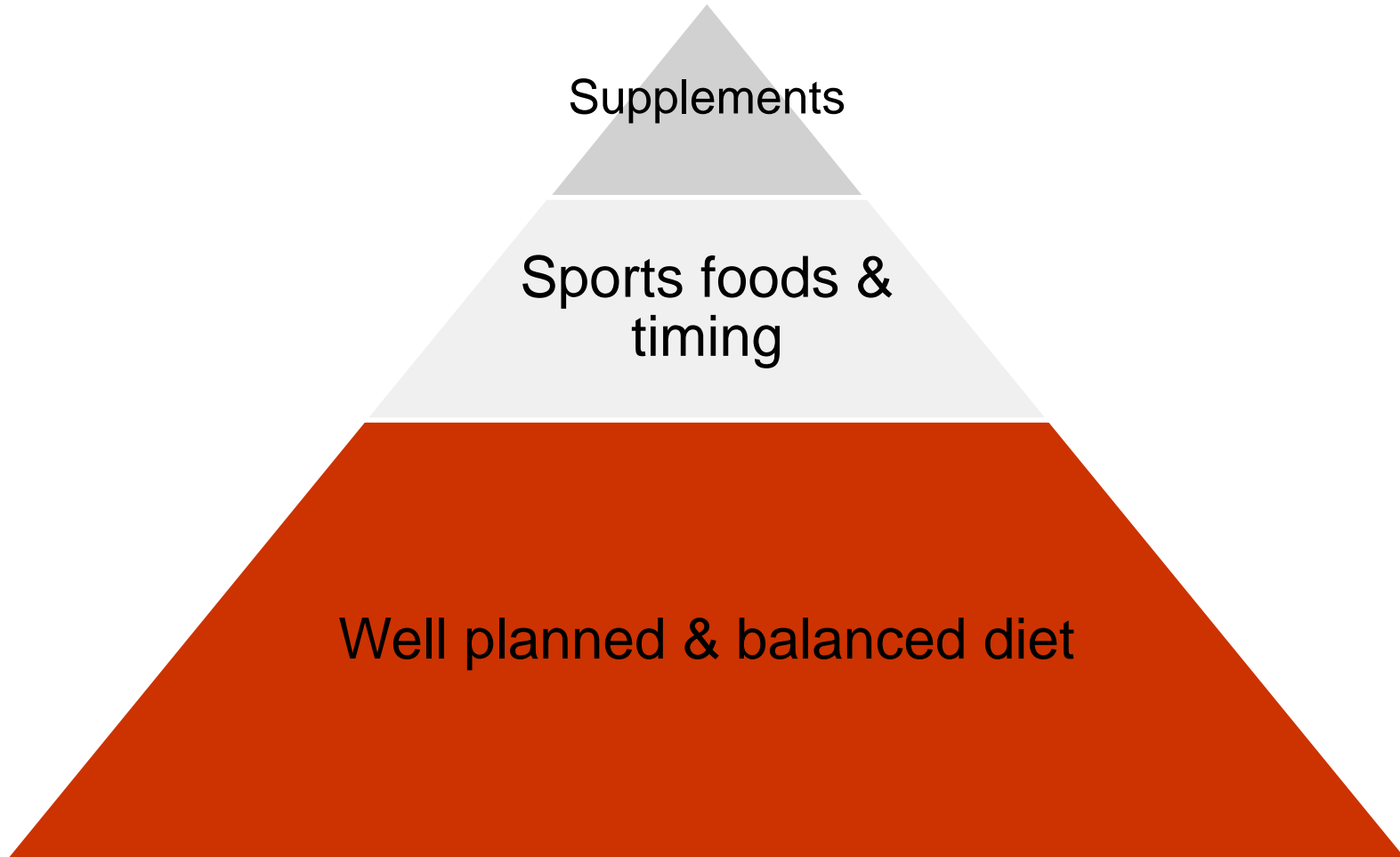


SPORTS NUTRITION FOR CURLING

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SPORTS NUTRITION PYRAMID



Credit to Greg Shaw, Senior AIS Sports Dietitian for concept



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THE BASICS





WELL PLANNED & BALANCED DIET

- Are you eating a well planned and balanced diet?
- Are you eating 7-8 serves of vegetables and fruit every day?
- What is a serve of vegetables?
- What is a serve of fruit?
- Do you have red meat or iron rich alternatives twice a week?
- Do you regularly eat oily fish and other omega 3 rich food sources?
- Do you get 2 serves of dairy every day?
- Do you drink water throughout the day?
- Are you getting 6-7 serves of wholegrains and cereals daily?



DIFFERENT FUELS=DIFFERENT STORAGE



Fat > triglycerides > stored under the skin and around the organs

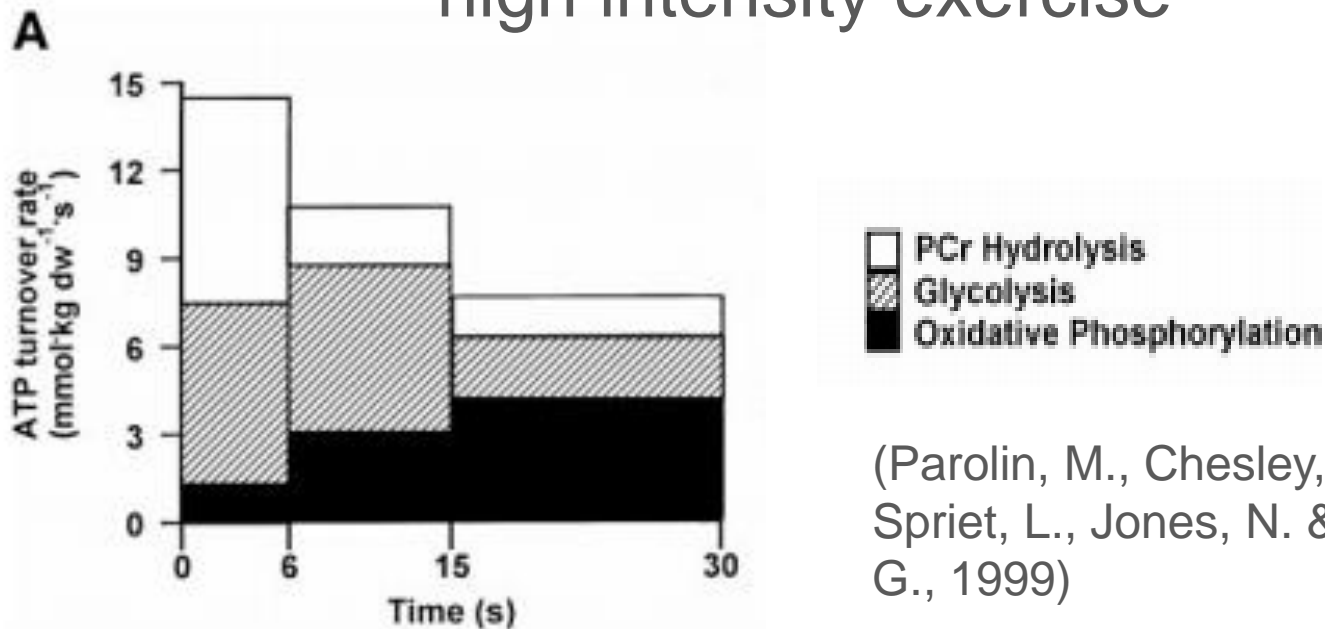
Carbohydrate > glucose > stored in the working muscles and liver, limited supply

Protein > amino acids > excess is converted and stored or excreted



FUEL SOURCES & INTENSITIES

Carbohydrate is the body's preferred fuel source for high intensity exercise



(Parolin, M., Chesley, A., Matsos, M., Spriet, L., Jones, N. & Heigenhauser, G., 1999)



CARBOHYDRATE

- Storage is limited
- Preferred fuel source for high intensity
- Important for cognition
- Carbohydrate needs change

Activity	Carbohydrate
Low intensity or Skill based activity	3-5g/kg BW
Moderate Intensity (~1 hour)	5-7g/kg BW
High (1-3hours)	6-10g/kg BW
Very high intensity (4-5hours/day)	10-12g/kg BW



SLOWLY DIGESTED

Also known as low Glycaemic Index (GI) carbohydrates release glucose slowly into the blood.

- Provide other nutrients
- Important for long term health

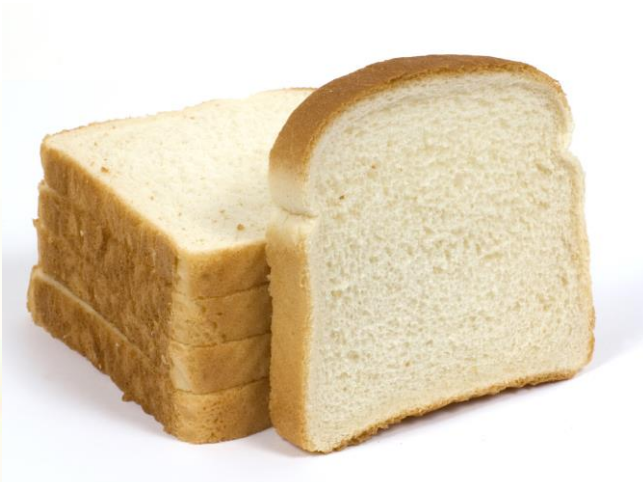




RAPIDLY DIGESTED

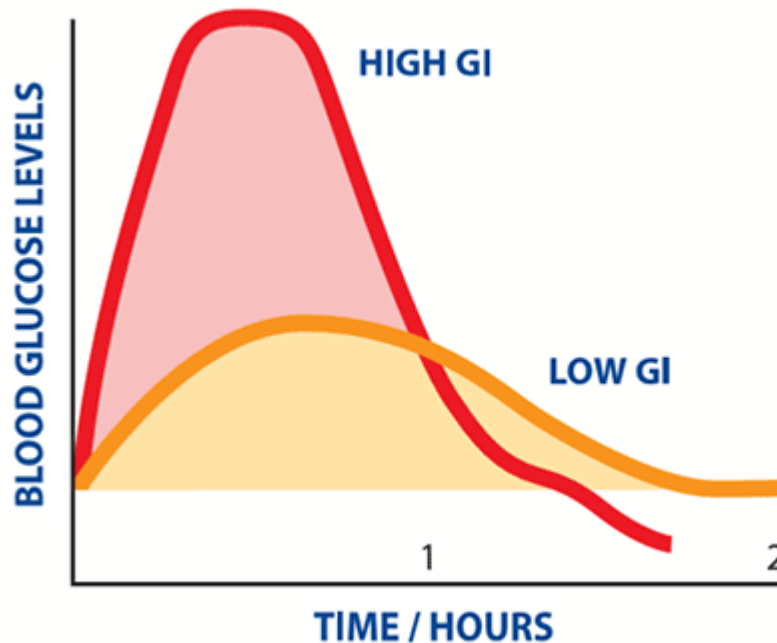
Also known as ‘sugary’ or high GI carbohydrates release glucose into the blood very quickly.

- Provide a fast source of CHO for exercise
- Lower nutrient quantity (‘treat’ outside exercise)





HIGH VERSUS LOW GI: BOTH PLAY A ROLE





PROTEIN

- Important for muscle repair and strength increases
- Especially important if still growing
- More is not necessarily better
- Easy to get enough through real food
- Timing and spread is important

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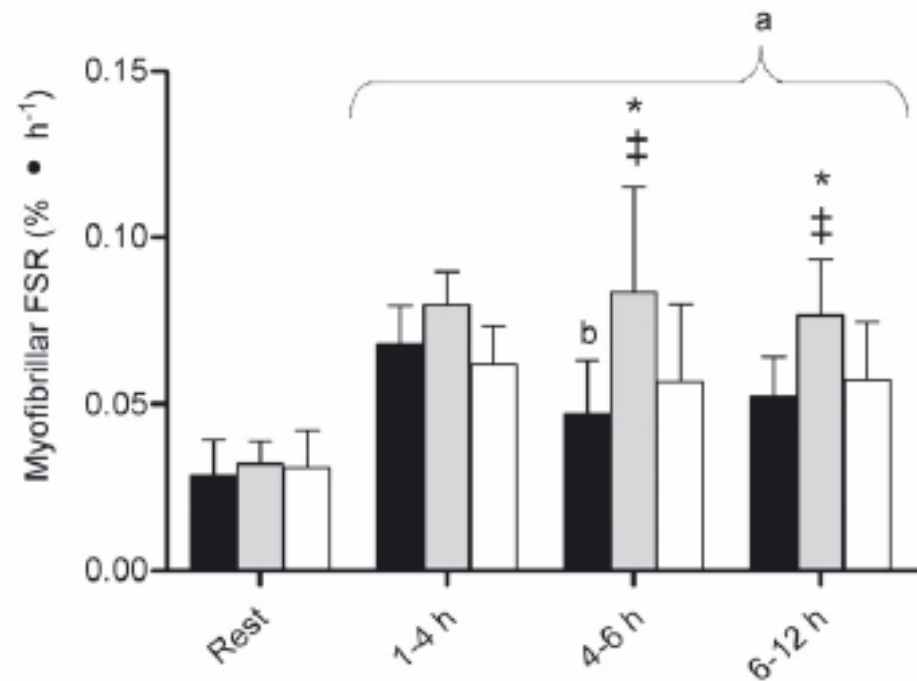
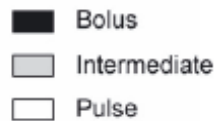
PROTEIN TIMING AND SPREAD

Followed recovery from a
resistance exercise for 12hour
period

Bolus= 40g every 6hours

Intermediate= 20g every 4 hours

Pulse= 10g every 1.5hours



(Areta, J., Burke, L., Ross, M., Camera, D., West, D., Broad, L., Jeacocke, N., Moore, D., Stellingwerff, T., Phillips, S., Hawley, J. & Coffey, V., 2013)



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LEAN PROTEIN





FAT

- Small amounts required on a regular basis
- As a general rule healthy fats are found in plants
- High intake of fat may affect fueling for performance or ideal body composition





MACRONUTRIENTS

Carbohydrate = 4cal/g



Protein = 4cal/g



Fat = 9cal/g



Alcohol = 7cal/g



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NUTRIENT DENSE

Low calorie content and high nutrient value





ENERGY DENSE

**High calorie content
and low nutrient value**





ENERGY BALANCE

Energy In

- From the food and drink we consume



Energy Out

- Basal Metabolic Rate (BMR)
- Physical activity
- Thematic effect of food



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COMPARISON



OR





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BUILDING A MEAL





DEHYDRATION

Fluid losses greater than 2% of total body water is enough to potentially starting showing the signs of dehydration:

Impaired
Cognition

Muscle
Fatigue

Reduced
Muscle
Endurance

Increased
Perception
of Effort



OPTIMIZING HYDRATION FOR COMPETITION

In the 24hours prior

- Sip from a drink bottle between meals
- Have fluids with your meals
- Fluid balance testing in training
- Monitor your hydration



Versus





SPORTS DRINK

- Contains carbohydrate 6-7% concentration, electrolytes and fluid
- May provide benefit in small amounts or mouth rinse during competition
- Or between competition games



Water is the best choice for everyday hydration and for training sessions under an hour and lower intensity.



EATING FOR COMPETITION

- 2 to 4 hours prior to a game

Carbohydrate containing meal that is:

Low in fat

A familiar food

Liquids are often better tolerated if nervous



- 60-90mins prior

Caffeine (if using and over 18years of age)



- 60mins prior

Readily digestible carbohydrate 'top up' or mouth rinse





MOUTH RINSE

One particular study has demonstrated a benefit of rinsing the mouth with a 6% carbohydrate containing solution for 5seconds prior to repeated sprints of 24seconds (Beaven et al. 2013).

Possible application:

Second half or later part of a game.



Take a mouthful of sports drink and rinse in mouth for at least 5 seconds before spitting or consuming.



REFUELING BETWEEN GAMES

30-60mins between

Small and easily digestible ex. Sports drink



60mins-2hours between

Slightly larger, still easily digestible, +fluids



>2hours between

Have a meal containing carbohydrate (lower fat choices)
+fluids





RECOVERY

Timing = Within **30-60mins** of finishing

Key components

- Carbohydrate
- Protein
- Fluid
- Vitamins & minerals





RECOVERY

- Especially important post **key** training sessions and during multiple days of competition
- Recovery will change depending on your goals
- Proactive versus passive recovery
- Your next meal versus an additional snack



RECOVERY EXAMPLES

- Dairy-based smoothie
- A beef/chicken/tofu and salad wrap
- A can of tuna and whole wheat crackers
- 1/2 Cup of cottage cheese & rice crackers
- Chicken and sweet corn soup
- A tall glass of milk and a piece of fruit





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TRAVEL NUTRITION





TRAVEL NUTRITION

Some of the Challenges

- Disruption to normal training and meal patterns
- Increased or decreased opportunity to eat
- Boredom eating
- Limited access to fresh foods or safe storage
- Relying on takeaway outlets roadside stops
- Increased fluid losses
- Increased cost



IMMUNE SYSTEM

- Optimizing immune system before you go
- Practicing good food and hand hygiene
- Eating the rainbow when possible
- Paying attention to recovery*
- Staying on top of your hydration





SNACKS FOR THE ROAD

- Vegetable crudités & hummus or tzatziki
- Boiled eggs
- Fresh fruit
- Babybel cheeses or cottage cheese
- Raw unsalted nuts
- Canned and flavoured tuna
- Tub of fruit or plain yogurt





PREPARING FOOD ON THE ROAD

Equipment

- Microwave
- Minibar fridge
- Sandwich press
- Mini blender
- Plastic chopping boards
- Kettle
- Toaster
- Knives





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MEAL IDEAS FOR THE ROAD



French toast

Bircher muesli

Rice and rice noodle salads

Thai beef salad

Wraps & quesadillas*

Omelettes/scrambled eggs using sandwich press

Grilled fish/chicken with microwaved vegetables

Salads with canned legumes such as chickpeas, lentils,
kidney and black beans

Pre-prepared freezer meals such as risottos, casseroles,
pasta dishes etc.



RECIPE LINKS

- <http://www.healthyfood.co.nz/recipes/2010/november/sweet-chilli-chicken-and-noodle-salad>
- <http://www.healthyfood.co.nz/recipes/2015/january/yummy-summery-fish-tacos>
- <http://www.healthyfood.co.nz/recipes/2014/november/asian-slaw-with-chickpeas-and-edamame-beans>
- <http://www.healthyfood.co.nz/recipes/2010/april/herbed-chicken-salad>
- <http://www.healthyfood.co.nz/recipes/2010/september/quick-tuna-and-rice-salad>
- <http://www.healthyfood.co.nz/recipes/2009/february/salmon-and-pea-couscous>
- <http://www.healthyfood.co.nz/recipes/2006/may/lentil-vege-and-tuna-salad>



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EATING OUT

What to look for.....

Words such as grilled, steamed, poached, baked, boiled

Always look to include some nutrient dense but low energy vegetables

With salads always ask for dressing or sauces on the side

Avoid cheese or cream based dressings

Watch portion sizes (split in half in necessary)

Build a meal first

Enjoy water, or low energy fluids with your meals





MAKING BETTER CHOICES

Italian: pastas with tomato based sauces (minimal cheese) or this crust pizzas with lots of vegetables, lean meat, chicken or tofu and minimal cheese

Japanese: sashimi, steamed vegetables, plain rice, edamame

Indian: Tandoori chicken, vegetable based curries (no cream), plain rice, steamed vegetables, plain rice

Mexican: Bean and vegetable salads with grilled chicken (go easy on the avocado and cheese)

Thai: vegetable and lean meat, chicken or tofu stir fries served with noodles or plain rice

Greek: grilled fish or chicken with fresh salad and pita bread

Salad or sandwich bars: i.e. Freshiis



Review Quiz

1. Topping up with which fuel source may help maintain concentration during long periods of competition?
2. Optimal timing of your recovery snack or meal?
3. What should your recovery include?



TAKE HOME MESSAGES

- Take ownership of your nutrition
- Be prepared and get the basics right first
- Optimize hydration prior to competition
- Practice your competition nutrition in training



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QUESTIONS?



Thank you,

Rebecca Hall

Australian Accredited Sports Dietitian



References

- Areta, J., Burke, L., Ross, M., Camera, D., West, D., Broad, L., Jeacocke, N., Moore, D., Stellingwerff, T., Phillips, S., Hawley, J. & Coffey, V. (2013). Timing and distribution of protein ingestion during prolonged recovery from resistance exercise alters myofibrillar protein synthesis. *The Journal of Physiology*, 591(9), 2319-2331 doi: 10.1113/jphysiol.2012.244897
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