Sports Nutrition

for swimmers

Dane Baker
Sports Dietitian
Today’s Presentation

• Role of nutrition
• The four R’s of recovery
• Carbohydrates
• Protein
• Immune system
• Hydration
• Questions
“Life in swimming revolves around recovery from numerous sessions across the week and also the day.

► Need to focus on recovery nutrition day to day rather than just when you compete!
“Diet is the key, if you don't have your diet right, you don't get the energy to train properly for the sessions and you're not recovering yourself well, so I think it's been a learning curve and figuring out what best form I can be in”.
The four R’s of Recovery

**Refuel**
- Carbohydrates

**Repair**
- Protein

**Rehydrate**
- Fluid

**Rest**
- Sleep

- Repair
- Refuel
- Rehydrate
- Rest

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**Carbohydrates**
- Refuel

**Protein**
- Repair

**Fluid**
- Rehydrate

**Sleep**
- Rest
Carbohydrate, Protein or fat??

Carb: Weet-Bix, Xtra, Fat
Protein: Tuna, Chicken, Fat, Carb
Fat: Butter, Oil, Protein, Carb
Protein + Carb: Carb + Protein, Protein, Carb
Carb + Protein: Carb + Protein, Carb, Protein
Carbohydrates are the main fuel for your muscles during exercise.

- You only have a limited store of carbohydrate in the body.
- The harder you train - the more carbohydrate your muscles burn up.
Glycogen

45min swim?

E

F

加油
Glycogen

45min swim
30% less fuel

90 min swim?
Glycogen

90min swim
60% less fuel

Multiple swims with poor diet & recovery?
Glycogen

Multiple swims with poor diet & recovery
90% less fuel
Running on Empty

Fatigue & Tiredness

Reduced Skills
- Stroke
- Turns
- Starts

Hard to Concentrate

Reduced Concentration
- Listening to coach
- Working on stroke/turns

More chance of getting sick

Poor concentration At school!

Loss of muscle
Fuel for growth!

Growing needs more fuel

Missing meals & snacks – not enough fuel

Measure height at home

0-5yrs

5-10yrs

10-15yrs

15-18yrs

18yrs+
When do we need carbohydrate?

1. **Pre Exercise**
   - Fuel up!

2. **During Exercise**
   - (Game or intense training)
   - Keep muscles fuelled up!

3. **Recovery**
   - To replace fuel burnt up during exercise
   - Help recover for next session.
Fuel during a swim

30 - 60g Carbohydrate per hour

400-750ml Sports Drink
Sports Drink - Fuel

Provide Fluid & Carbohydrate

Easily digested, similar to water

Suitable:
- Before exercise
- During exercise
- After exercise

Can be good when time is limited between races, or when appetite is low.

Find a flavour / brand that you tolerate well, can take time to improve tolerance to sports drink during exercise!
Protein

Protein?

Re-build & Repair Muscles
Why we need protein

• Your body is made up of proteins
  — Muscle
  — Skin
  — Organs (kidneys, heart, lungs etc)

• These are broken down each day and need to be rebuilt

• Protein needs to be rebuilt after exercise.
Protein timing

“Optimal muscle building window”

Rate of muscle building

Protein feeding + exercise

Exercise alone

Time post – exercise (hours)

0

24

48

Phillips & Tarnopolsky; From Lab to kitchen 2010
Protein Supplements?

• Provide convenient, high quality source of protein suitable for recovery of resistance training

• Is not magic bullet that can undo poor nutrition habits.

• For developing athletes doing resistance training, 500ml flavoured milk drink will provide adequate recovery

• Not complete recovery – still need carbohydrates
What 2 nutrients then do we need in recovery?

- Mainly Carbohydrate
  - To refuel!

- Some Protein
  - To rebuild

Carbohydrates
Carbohydrate & Protein snacks

Good recovery options

500ml flavoured milk
Fruit Smoothie
250ml flavoured milk + Banana
Fruit salad + low fat yoghurt
1 x sandwich lean meat + salad fillings
Breakfast Cereal + milk
Up & Go + Muesli bar
Small tin baked beans + 2 x toast
2 x crumpet / English muffins + glass of milk
Meal Replacement
Creamed Rice
Eating Regularly

- Pre training snack
- Morning snack
- Breakfast / Recovery snack
- Morning swim
- Afternoon swim
- Snack / Breakfast
- Recovery snack
- Lunch
Eating Regularly

- AM swim
- PM swim
- Snack / Breakfast
- Optional evening snack
- Morning snack
- Lunch
- Pre training snack
- Dinner
- Breakfast / Snack
- Recovery snack
Staying healthy

Intense swim

- Stay hydrated & Drink sports drink for intense sessions

- Have options in recovery

- Eating a balanced diet – Enough fruit & vegetables
Body Compositions – why?

• Specifically for athletes (*measure muscle mass & body fat*)
• Measurements are always individual!
• Regular measurements find ranges where they:

  ✓ *Perform & train well*
  ✓ *Can maintain good health*
Body weight challenges in puberty

**Hormone Changes!**
Female body tries to store fat, male loses fat and increases muscle.

**We can stop growing!**
So our body needs less fuel but our appetite can stay the same.

**Break or Taper**
Poor eating habits when training less is a main reason for weight gain.

**CAUTION PEER PRESSURE**
From friends
Treat / fast food
Alcohol
Achieving ideal body composition

When I'm in the hard training, eating well and have a good balance in my life, I feel like everything ticks along quite nicely."

- Good eating habits early helped when injured / break
- Smart with choices!
- Listened to the right people
- Good Balance Enjoy in Moderation!!
- Good choices: taper & competition!

Life long approach – not overnight!

Stephanie Rice (age 12)

Stephanie Rice (age 20) 2008 Olympics
Hydration
Consequences of Dehydration

- Reduced work capacity
  *Sprinting and long distance!*

- Increase perception of effort
  *Everything seems harder!*

- Increased body temperature
  *Fatigue will occur faster*

- Reduced ability to concentrate
  *Stroke, turns, starts!*

All factors lead to reduced performance!
Dehydration – Effect on Performance

2% Weight loss: 60kg = 1.2kg
Dehydration

- Headache
- Light headed
- Fatigue
- Cranky
- Muscle cramps
- Reduced concentration
- Poor co ordination
- Reduced mental skills
Urine Colour
Staying Hydrated

Always have a drink bottle with you at school / uni / work

Drink 1 bottle in morning and 1 in afternoon

Drink more in summer when hot!

Drink sports drink in hard trainings
- Also good during meets!

Check colour of pee – if its dark drink a bottle!
Summary

Refuel

Carbohydrates

Repair

Protein

Rehydrate

Fluid

Rest

Sleep
Questions?