

Amateur Swimming Association



Competition Nutrition



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Learning Outcomes

Understanding how to apply individual requirements before, during and after competition

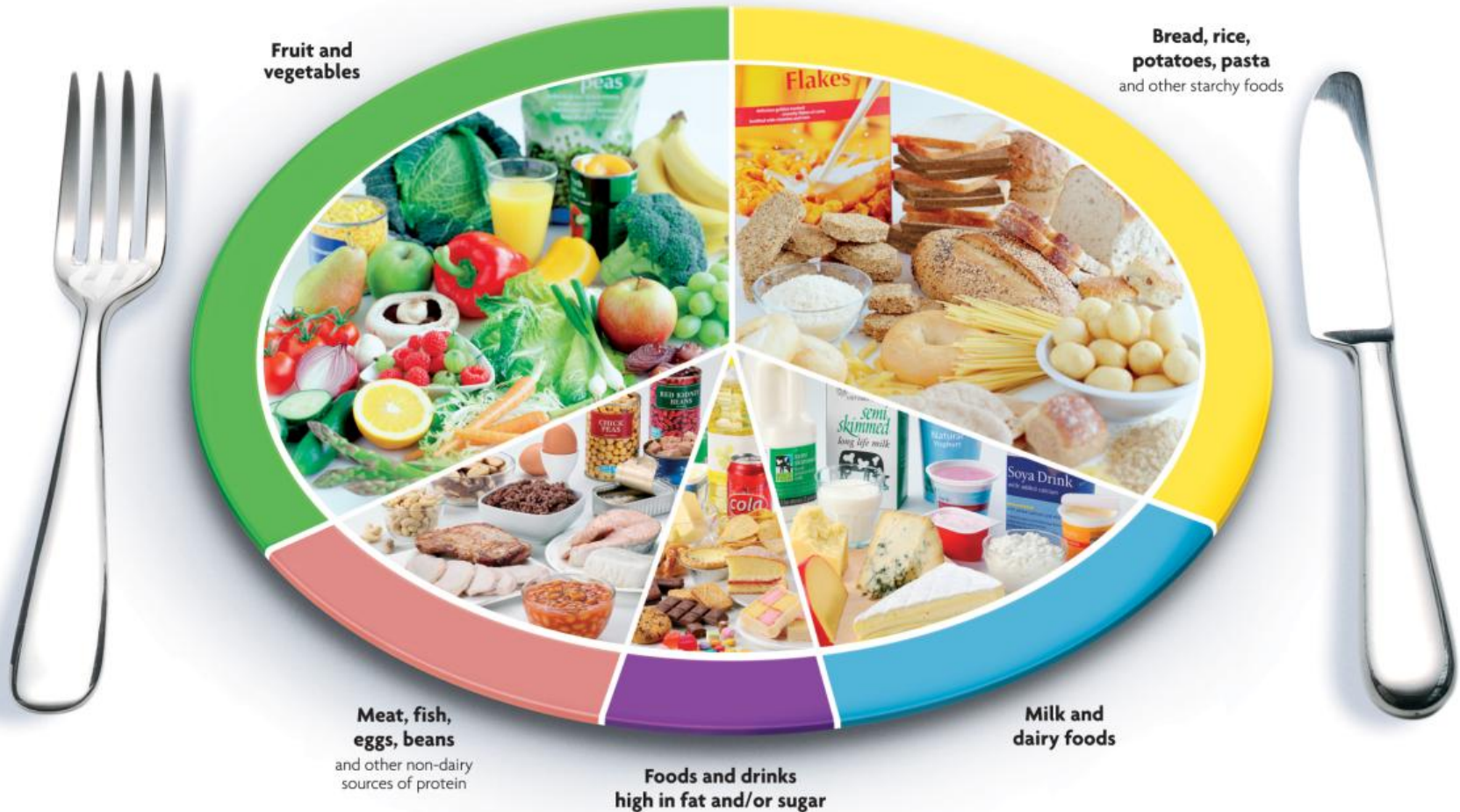
Identify nutritional aspects of recovery and identify strategies to achieve this

Identify suitable snacks

Personal action planning

The eatwell plate

Use the eatwell plate to help you get the balance right. It shows how much of what you eat should come from each food group.



Activity 1

- What are your nutritional dilemmas and concerns?
- Consider the factors that affect food intake and choice at competition

Nutritional Dilemmas



•Post competition fatigue



•Timing of food and fluid intake



•Quantity

Be organised

Manage time

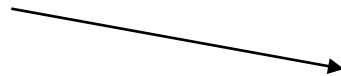
Prepare food before competition

•Poor access to suitable foods

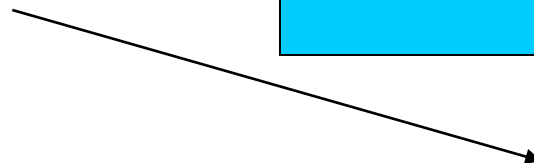


Carry carbohydrate
rich snacks

•Travelling



•Appetite Suppression



Snack and top up later with a meal
when more suitable foods
are available

Bite size pieces of food

What are an athletes key nutritional strategies?

- In preparation for
- Participation in
- Recovery from

Key nutrients to consider in all cases are Carbohydrate & Fluid



Recovery Nutrition...

Recovery includes a complex range of processes:

- restoration of muscle and liver with expended fuel
- replacement of fluid and electrolytes lost in sweat
- immune system response to handle the damage and challenges caused by the competition bout
- manufacture of new muscle protein, red blood cells and other cellular components as part of the repair and adaptation process.

Why Fluid?

- Maintain hydration
- Maintain concentration
- Reduce body temperature
- Enables optimum performance
- Prevent dehydration
- Reduce risk of injury



Fluid

- Makes up 50-60% of your total body weight
- Stored but only in limited amounts
- Survival!
- Transport - Nutrients, waste products, internal secretions and food.
- Temperature regulation
- Digestion
- Dehydration & Fatigue



body weight lost as sweat	Physiological effect
2%	Impaired performance
4%	Capacity for muscular work declines
5%	Heat exhaustion
7%	Hallucinations
10%	Circulatory collapse and heat stroke

2% of body weight approximates to 1.4 L of fluid for a 70 kg man

Fluid

How do we know when we are dehydrated?



Thirsty



Body temperature



Headache



Don't need the toilet



Short of breath



Lack of energy

Fluid

How can we prevent dehydration?



Drink at least 2 litres per day



Freeze water so it is cold all day

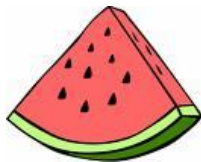


Dilute cordial in water



Always carry water

Watermelon, grapes, orange, lettuce, cucumber, ice lolly



Daily Fluid Requirements for Health

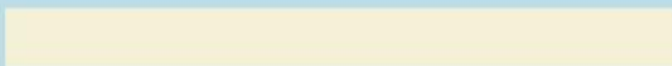
- 2 litres / day
- 30-35ml / kg
- 1ml / kcal



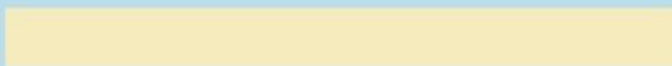
Fluid Requirements

Body Weight	Fluid (ml)
40	1200 – 1400
45	1350 – 1575
50	1500 – 1750
55	1650 – 1925
60	1800 – 2100
65	1950 – 2275
70	2100 – 2450
75	2250 – 2625
80	2400 – 2800

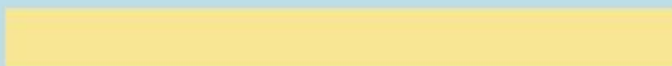
1



2



3



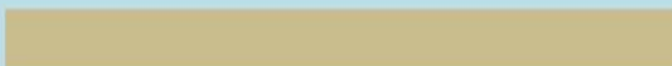
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5



6



7



8



target

dehydration

severe
dehydration

Your target is to make sure that your urine is the same colour as numbers 1, 2, or 3. Colours 4 and 5 suggest dehydration and 6, 7 and 8 severe dehydration

Urine chart

Why use a sports drink?

- WATER
dehydration avoided
- ENERGY
fatigue delayed
- SALTS
replenishment



= maximum muscle performance for a longer time

Sports Drink Guidelines

< 1 Hour
team sports, cycling

80-130% $\text{VO}_{2\text{max}}$

replace fluid

2-4% CHO

1-3 Hours
soccer, marathon

55-90% $\text{VO}_{2\text{max}}$

**carbohydrate
& fluid**

4-8% CHO &
low NaCl

>3 Hours
triathlon

30-70% $\text{VO}_{2\text{max}}$

**carbohydrate, fluid
& minerals**

4-8% CHO &
moderate NaCl

Refuelling...

Muscle can restore its fuel (glycogen) levels by about 5% /hr provided enough CHO is eaten.

Depending on the fuel cost of the training and competition schedule and the need to fuel up you may need to consume 8-12g of CHO / kg body weight each day.

Carbohydrate Requirements

Training duration	Grams Carbohydrate per kg/body weight	Example Body weight	Daily Range
1-2hr	5-7g/kg/bw	85kg	425-595g
2-4hrs	7-12g/kg/bw	85kg	595-1020g
4hrs+	10-12g/kg/bw	85kg	850-1020g

Carbohydrate Requirements

Body Weight	Carbohydrates (g) 1-2 hours Training	Carbohydrates (g) 2-4 hours Training	Carbohydrates (g) 4 hours + Training
40	200 – 280	280 – 480	400 – 480
45	225 – 315	315 – 540	450 – 540
50	250 – 350	350 – 600	500 – 600
55	275 – 385	385 – 660	550 – 660
60	300 – 420	420 – 720	600 – 720
65	325 – 455	455 – 780	650 – 780
70	350 – 490	490 – 840	700 – 840
75	375 – 525	525 – 900	750 – 900
80	400 – 560	560 – 960	800 – 960

Before Competition

Fluid

Before exercise 5 – 7 ml / kg bolus or as much as can be tolerated

Carbohydrate

Research has shown that up to 200g of carbohydrate 3-4 hours before exercise enhances performance

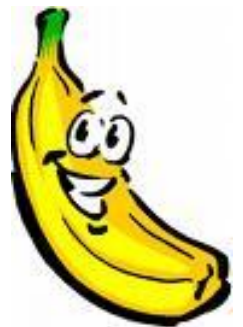
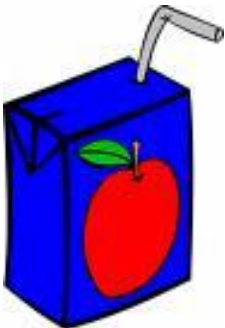
During Competition

Fluid

During exercise 2mls / kg every 15 minute or 2-300mls every 15/20 minutes

Carbohydrate

20-60g per hour



After Competition

Carbohydrate

- Within the 30 minutes immediately following exercise - 1g/kg/BW
- Liquid form of carbohydrate ingestion

Protein

Including a small serving of protein (10-20g) at this time may further enhance the recovery process

Activity 2

Using the food cards calculate how much carbohydrate you had to eat yesterday...

If you didn't consume enough, which meals can you make larger or which snacks can you add into your diet?

Travelling Nutrition

➤ Maintenance of nutritional intake when travelling can be split into the categories below. Planning before can help maintain a healthy diet during these periods:

1. Daily Travel
2. Staying Away from Home / Domestic Travel
3. International Travel

Daily Travel

- Take food from home to ensure healthy foods are available throughout the day and in the time period surrounding training and competition.

This should include a:

1. **Packed Lunch** — Based around the Eatwell plate previously discussed and full of healthy foods to have throughout the day.
2. **Snack Pack** — Full of snacks suitable to have in time period surrounding competition

Staying Away from Home (Domestic Travel)

- When travelling and staying away from home nutritional challenges additional to those experiences on a daily basis include:
 - The Accommodation
 - Competition Venue
 - Taking Provisions from Home
 - Eating Out

Taking Provisions from Home

- Taking food from home helps to make sure suitable snacks are available during emergencies or unforeseen circumstances. e.g. travelling delays.

Travelling snacks
Fresh fruit, tinned fruit, dried fruit (apricots and raisins)
Breakfast bars and Cereal bars
Breakfast cereals
Sandwiches / Rolls
Fruit bread / buns
Yogurt pots
Sports drinks / water
cakes
Rice cakes

Eating Out

Keep healthy eating guidelines set out in the Eatwell plate in mind. Don't be afraid to ask for...

Larger Servings – Bread, rice, pasta and potatoes

Side Servings – Vegetables, salad and bread

Desserts – Keep healthy eating guidelines in mind and opt for carbohydrate rich desserts. E.g. Fruit salad, sorbets, rice pudding, bread and butter pudding and fruit crumbles.

CHO-PRO Recovery Snacks

250-300ml liquid meal supplement

250-300ml of fruit smoothie

1 large bowl breakfast cereal with milk

1 large cereal bar + yoghurt

220g baked beans on 2 slices of toast

1 bread roll with meat filling + large banana

300g fruit salad with 200g fruit-flavoured yoghurt

2 crumpets with peanut butter + 200ml milk

large baked potato + cottage cheese + glass of milk

200g chicken/ham pizza with vegetables

contain approx 50g CHO + valuable source of PRO and micronutrients

Practical Considerations...

- compact and easy to chew
- minimal storage and preparation
- portable and able to travel
- individually packaged and sealed
- labelled with nutritional information

BREAKFAST ON THE MORNING OF
COMPETITION