

Sports Nutrition



for swimmers

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Today's Presentation

- Role of nutrition
- The four R's of recovery
- Carbohydrates
- Protein
- Immune system
- Hydration
- Questions



Role of Sports Nutrition

“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!**



Role of Sports Nutrition

“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



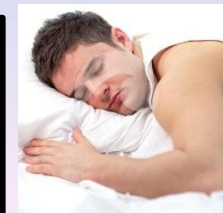
Protein

Rehydrate



Fluid

Rest

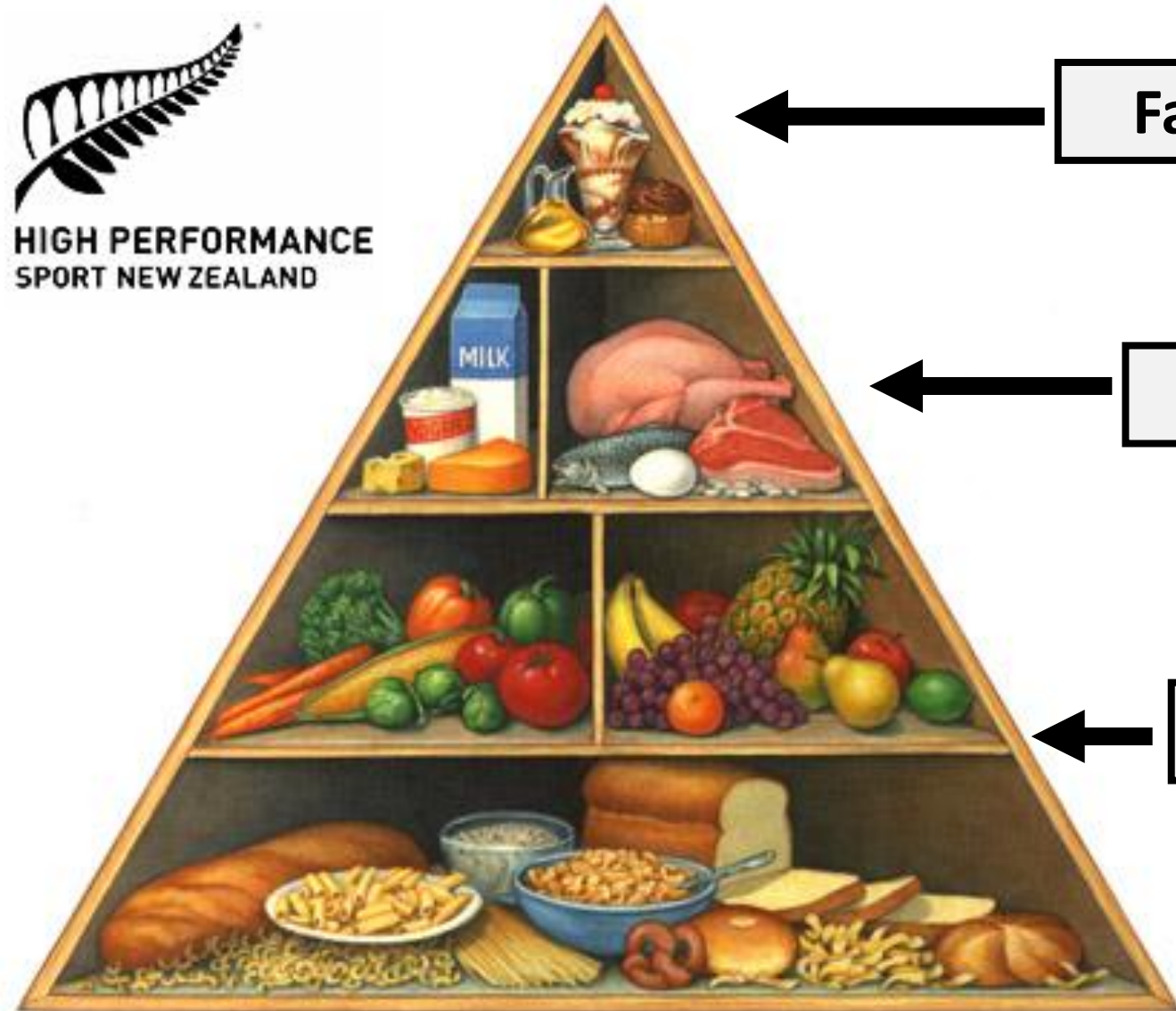


Sleep

Food Pyramid



HIGH PERFORMANCE
SPORT NEW ZEALAND



Fats & Sweets

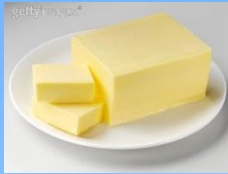
Protein

Carbohydrates

Carbohydrate, Protein or fat??



Carb



Fat



Protein



Protein



Protein + Carb



Carb



Carb



Protein + Carb



Carb



Carb

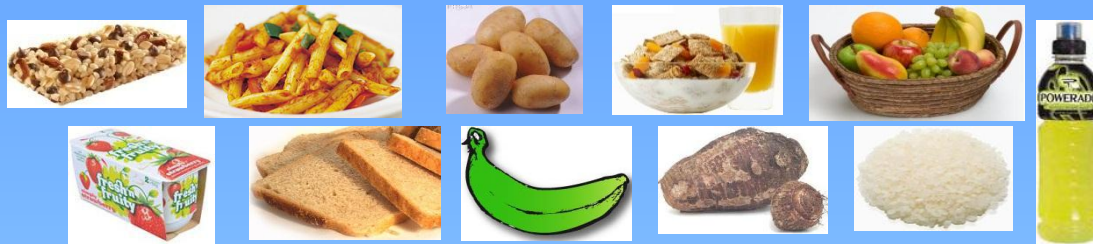


Fat



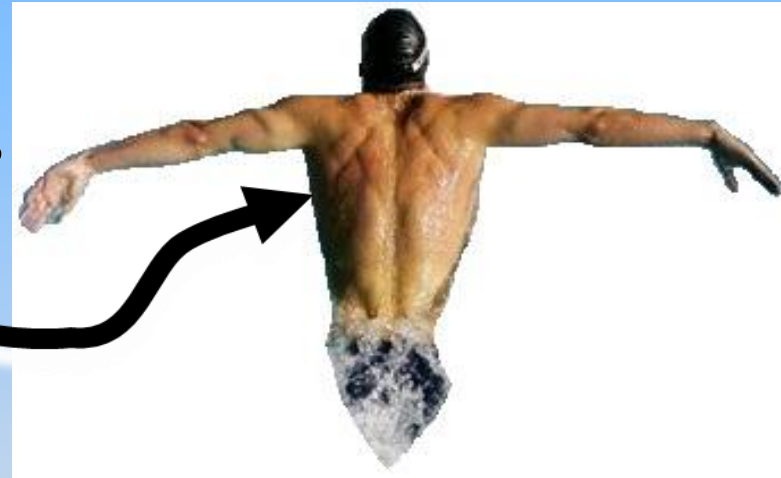
Carb + Protein

Refuel - Carbohydrates



Carbohydrates

Fuel your muscles



- 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?



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**

**Hard to
Concentrate**

Reduced Skills

- *Stroke*
- *Turns*
- *Starts*



Reduced Concentration

- *Listening to coach*
- *Working on stroke/turns*

**Poor concentration
At school!**

**More chance of
getting sick**

Loss of muscle



Fuel for growth!



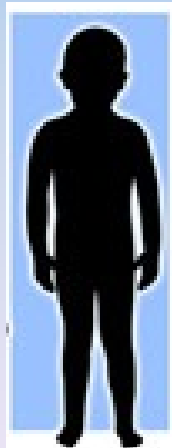
Measure height at home

Missing meals & snacks
– *not enough fuel*

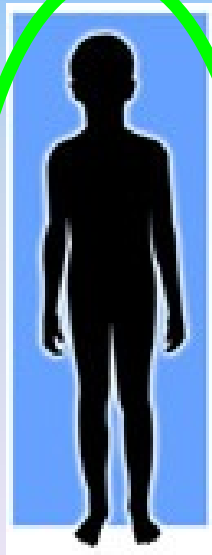
Growing needs
more fuel



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.



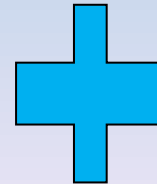
Fuel during a swim



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

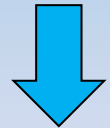
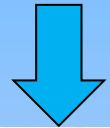
Protein?



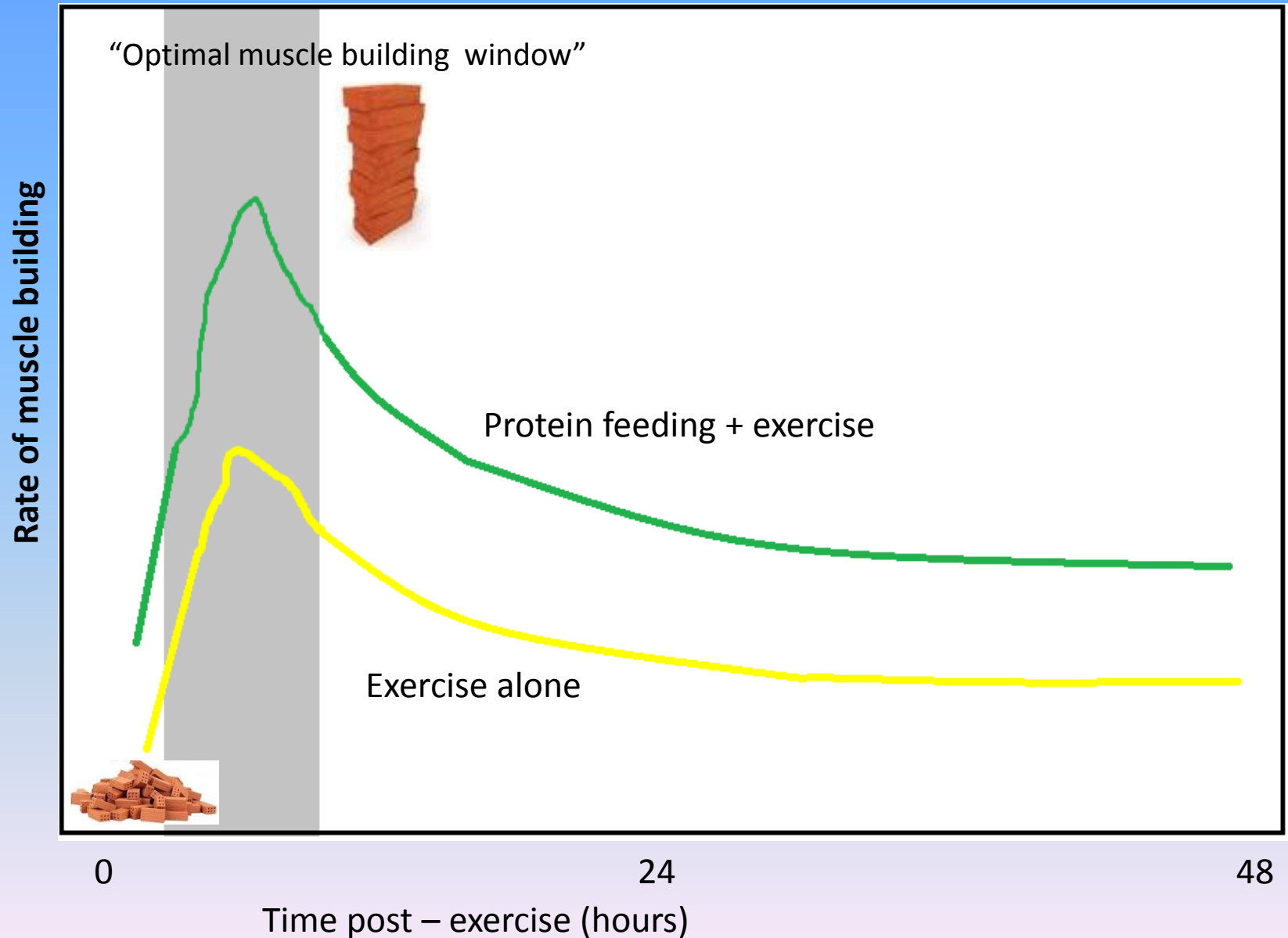
**Re-build &
Repair Muscles**

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



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



Recovery needs

- What 2 nutrients then do we need in recovery?

Mainly Carbohydrate

To refuel!



Carbohydrates



Some Protein

To rebuild



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

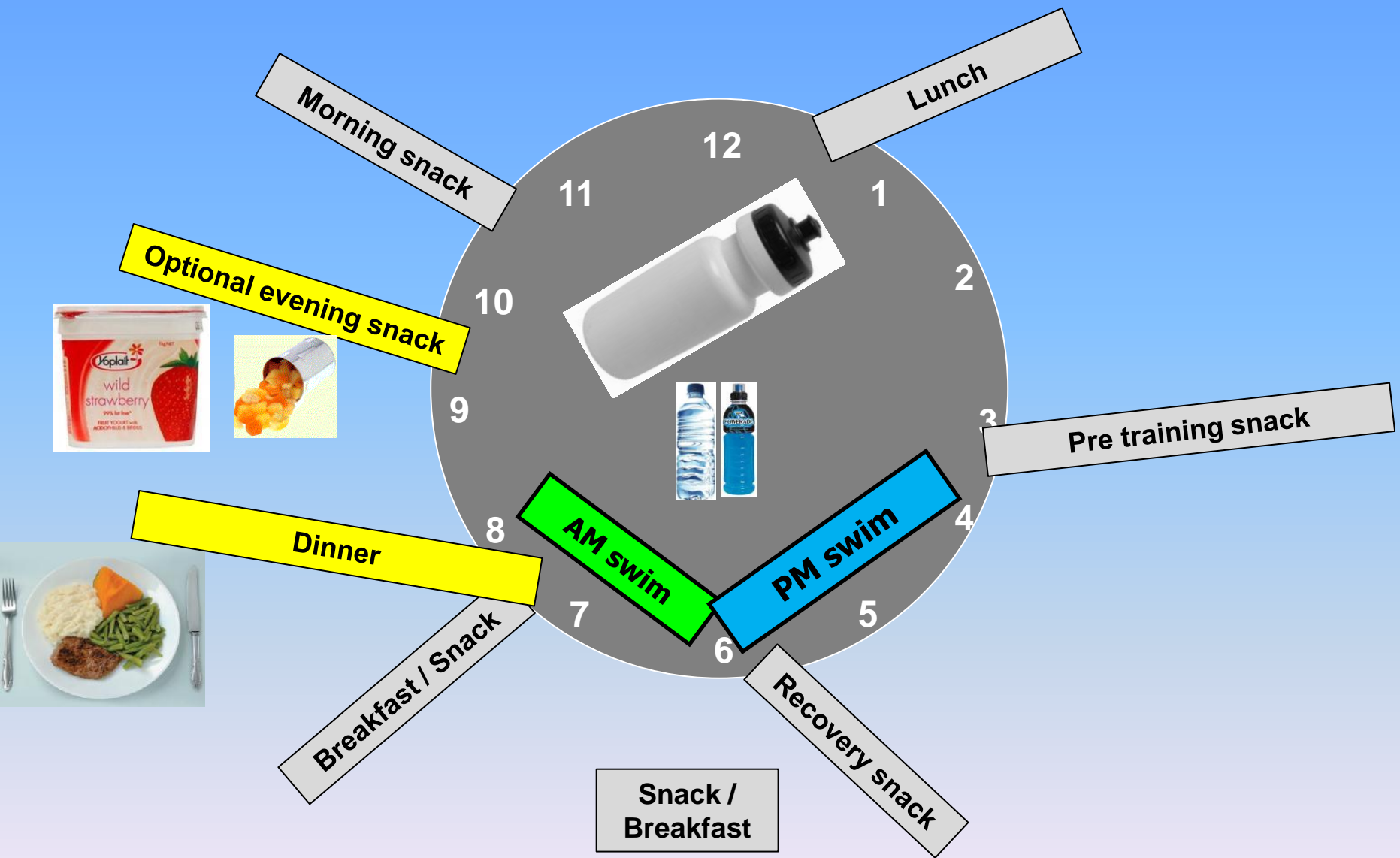


Creamed
Rice

Eating Regularly



Eating Regularly

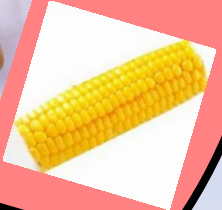


Athlete Plate

Lean Meats



Carbohydrate



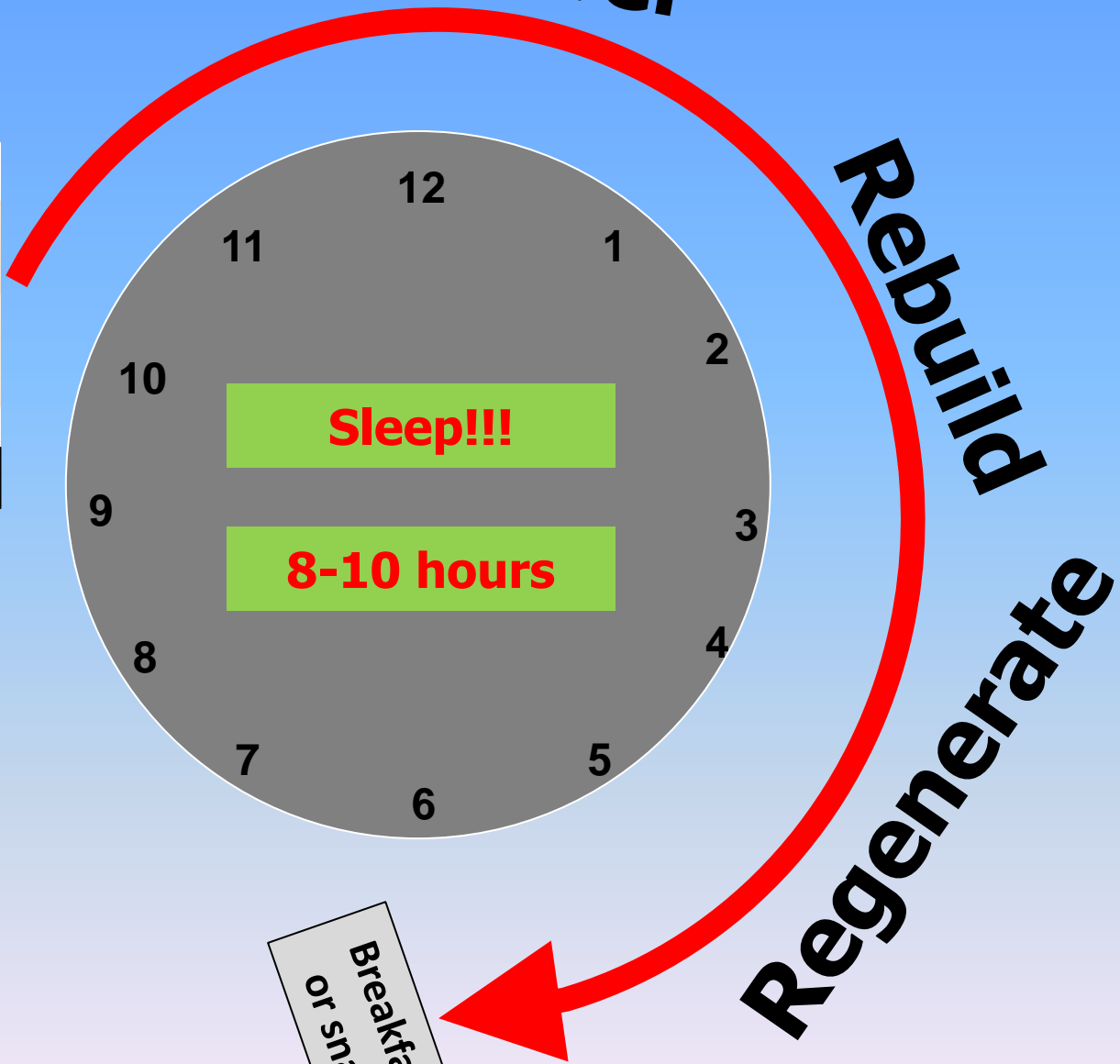
Salad Veggies



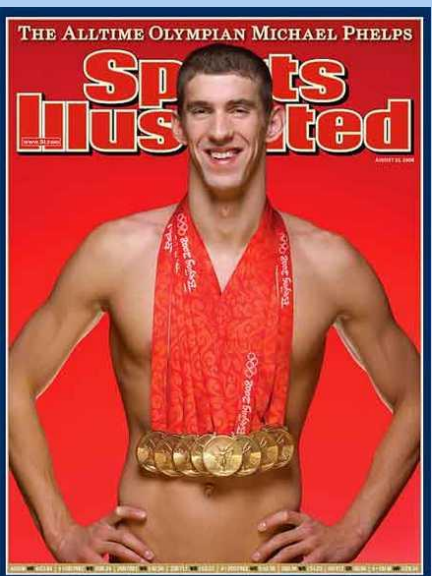
Recover



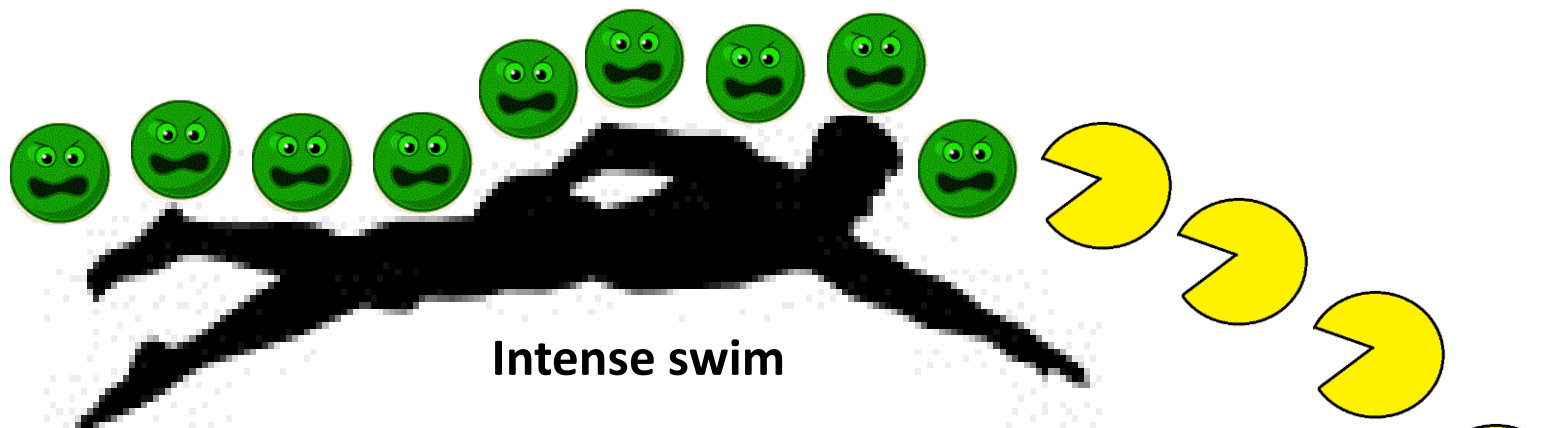
Sleep!!!!



Breakfast
or snack



Staying healthy



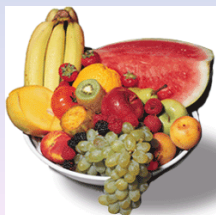
Intense swim



Stay hydrated & Drink sports drink for intense sessions



Have options in recovery

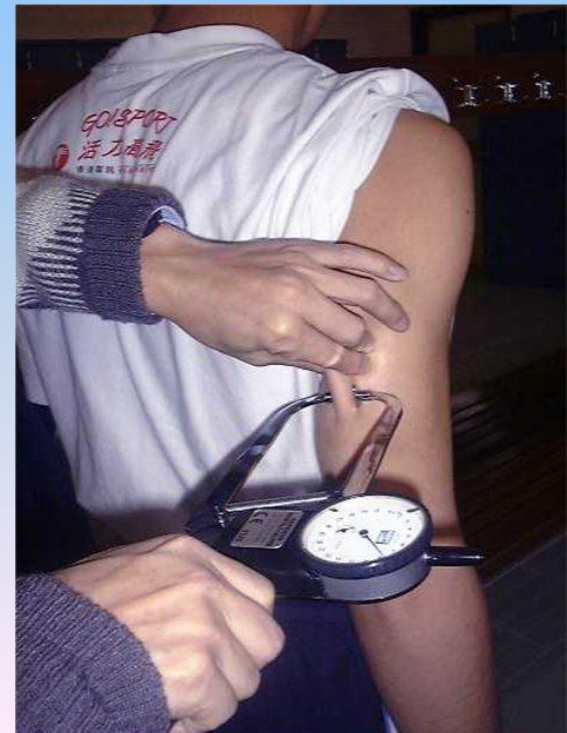


Eating a balanced diet – Enough fruit & vegetables

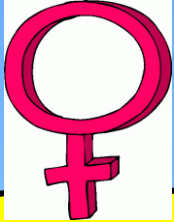


Body Compositions – why?

- 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*

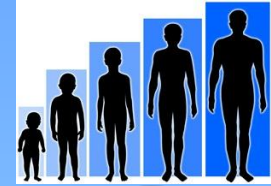


Body weight challenges in puberty



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

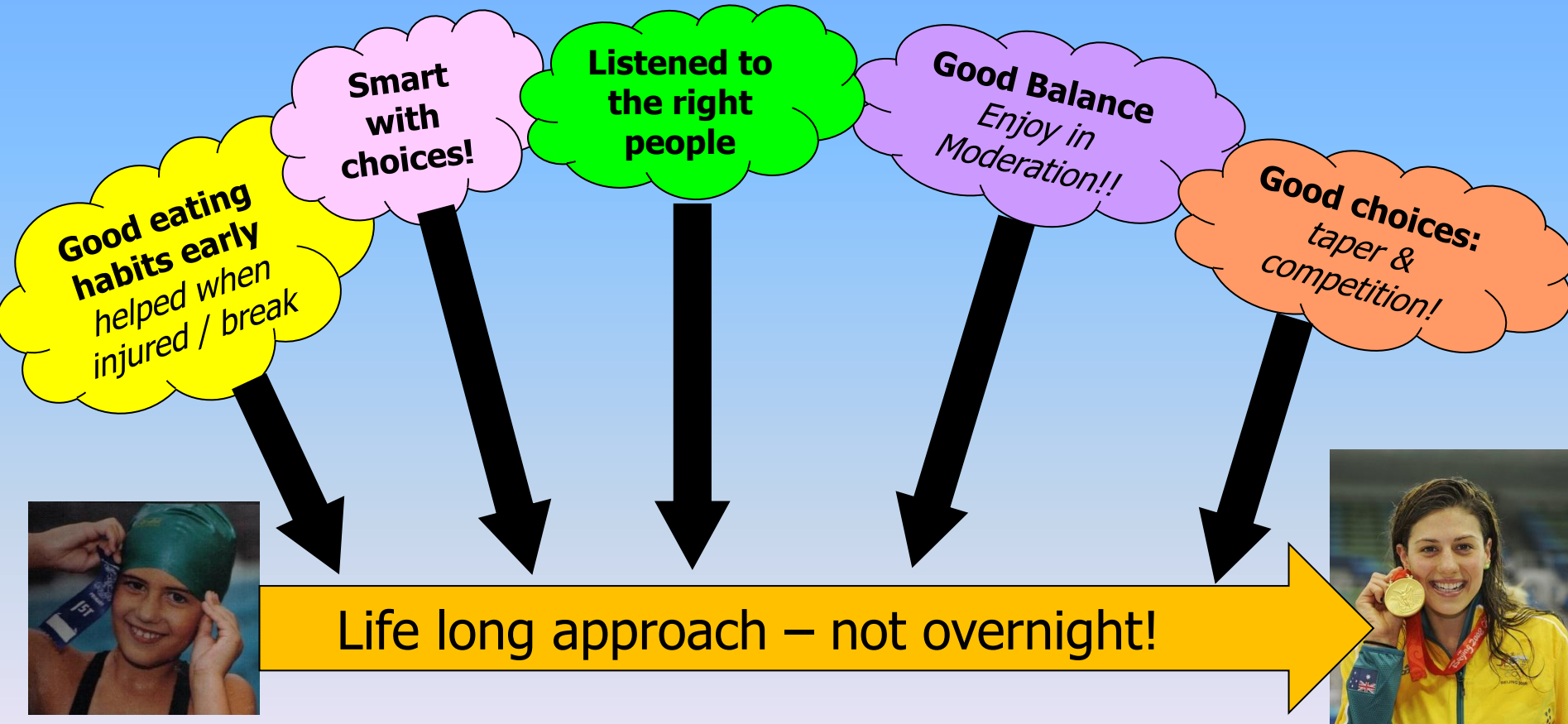
Poor eating habits when training less is a main reason for weight gain



*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."



Stephanie Rice
(age 12)



Stephanie Rice
(age 20)
2008 Olympics

Hydration



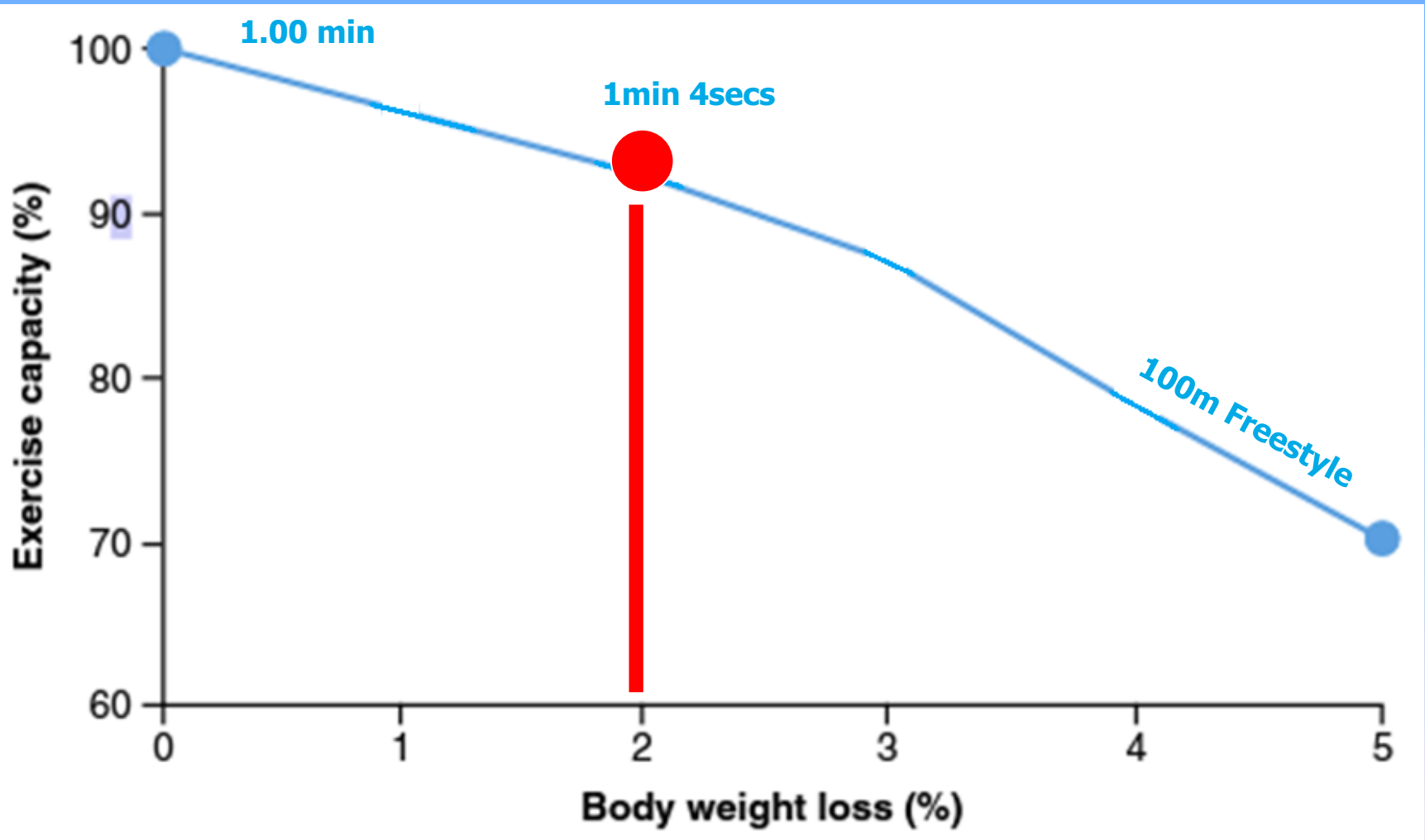
Consequences of Dehydration

- **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



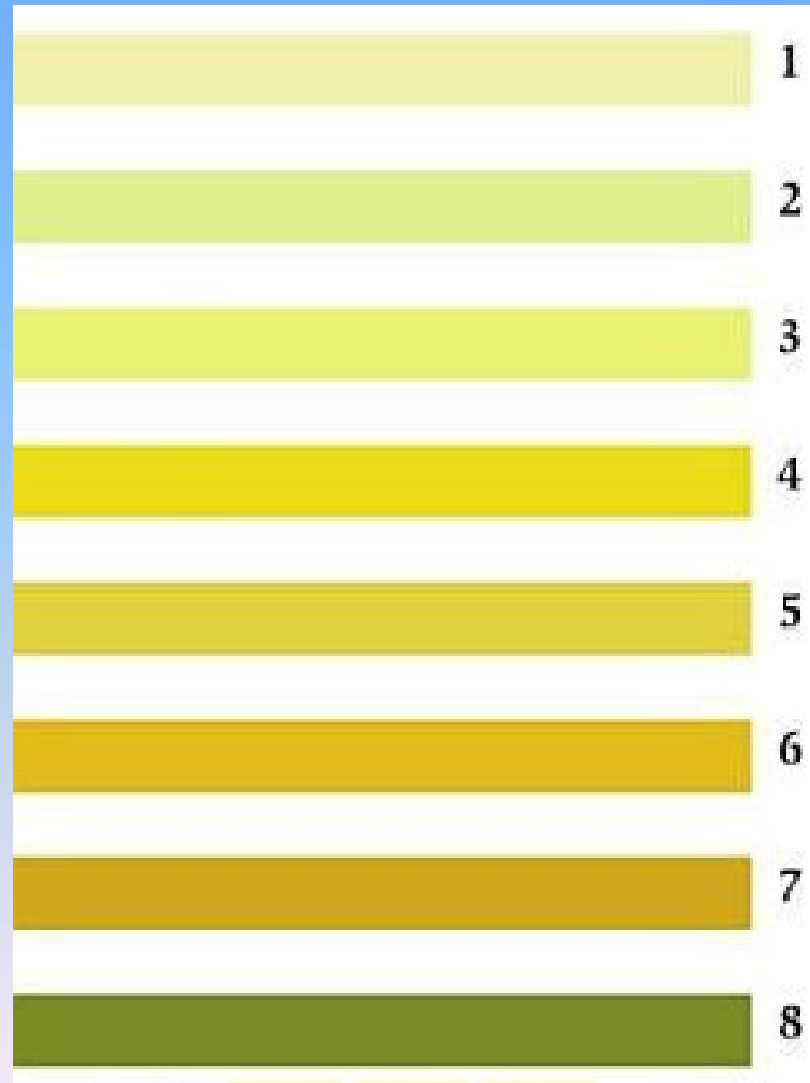
2% Weight loss: 60kg = 1.2kg

Dehydration

- ▶ Headache
- ▶ Light headed
- ▶ Fatigue
- ▶ Cranky
- ▶ Muscle cramps
- ▶ **Reduced concentration**
- ▶ **Poor co ordination**
- ▶ **Reduced mental skills**



Urine Colour



Staying Hydrated

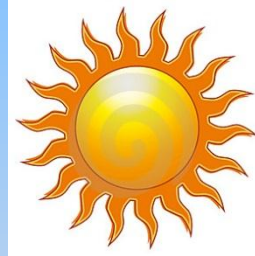
Always have a drink bottle with you at school / uni / work



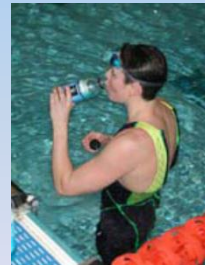
Drink 1 bottle in morning and 1 in afternoon



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?

