



Sports Nutrition for Karate

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Accredited Sports Dietitian



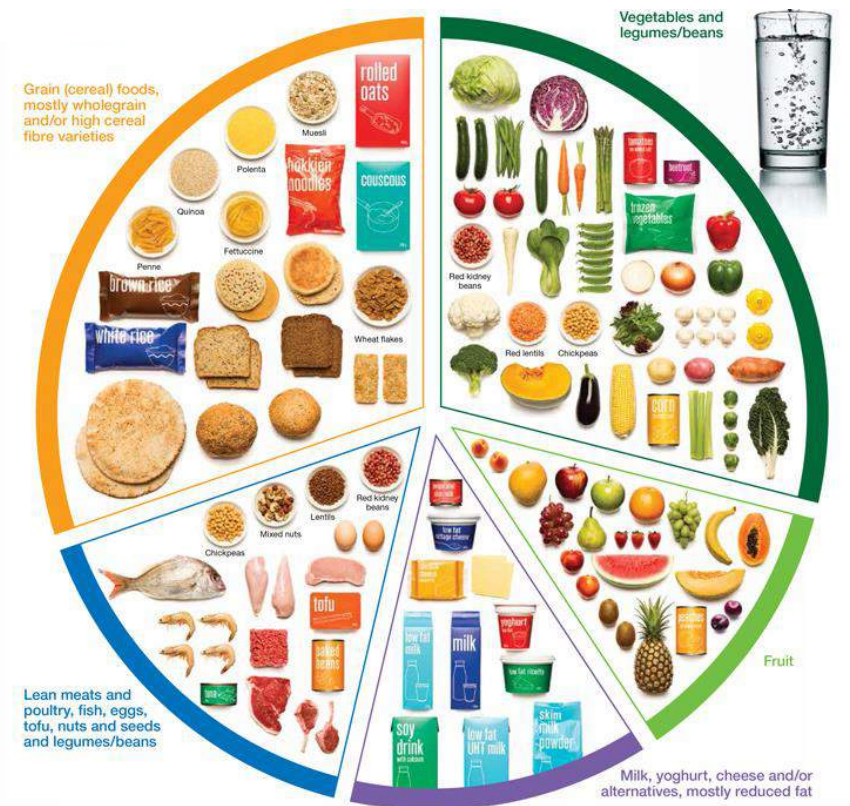
Why should we worry about the food we eat?

- General health & wellbeing
- Supports/fuels training
- Aides recovery
- Helps achieve ideal weight category,
 - changing muscle/fat mass & body weight



General Health & wellbeing

- Helps prevent illness
- What is a balanced diet?
- Enjoy a wide variety of nutritious foods from all the food groups
- Avoid excessive amounts of high fat & high sugar foods
- Stay well hydrated



Use small amounts



Only sometimes and in small amounts



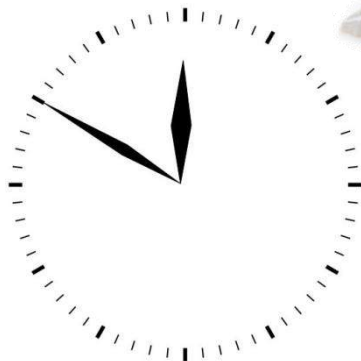
Support your training & aide recovery

- What habits support and fuel our training?
- Providing adequate carbohydrate before training
- Staying well hydrated

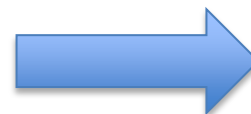
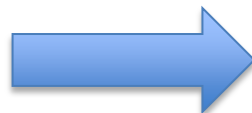
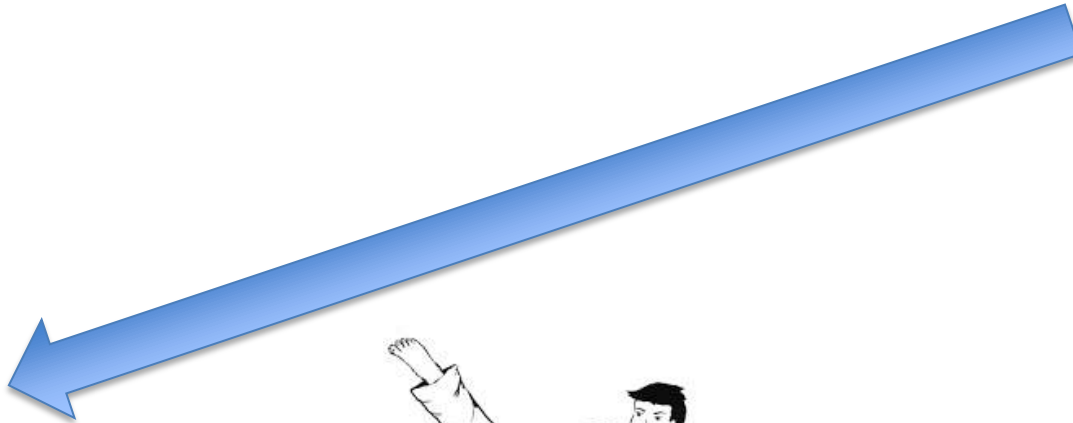
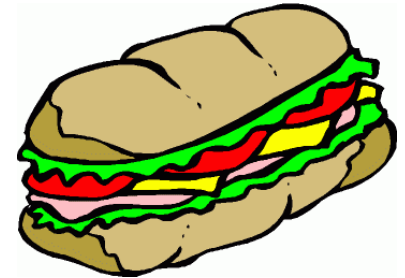
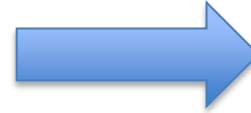
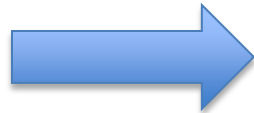


Support your training & aide recovery

- What habits aide recovery?
- Consuming protein and carbohydrates after training
- Providing adequate protein spread throughout the day
- Consuming adequate vitamins and minerals



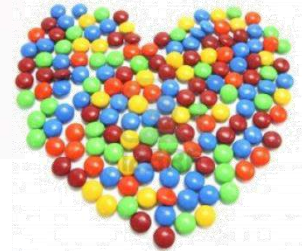
Support your training & aid recovery



A closer look at carbohydrates and protein

Carbohydrates

Type	Description	Example food sources
Nutrient-dense Should be the majority of intake	These foods provide carbohydrate and needed vitamins and minerals, fibre, protein and other nutrients	Breads and cereals, grains, fruit, starchy vegetables (e.g. potato, corn, sweet potato, taro etc.), legumes and low-fat dairy products
Energy dense, nutrient-poor May be used to meet high energy demands or as a quick energy source	These foods contain predominantly carbohydrates, often as simple sugars and high GI, with minimal other nutrients.	Candy, lollies, carbohydrate supplements (gels sports drinks, bars), soft drinks, low fat desserts, biscuits and bars etc.
High-fat carbohydrate Should generally be avoided	These foods are high in energy, carbohydrates and fat with minimal other nutrients.	Ice cream, desserts, cakes, pastries, french fries, potato chips, chocolate etc.



High Fat Carbohydrates



Pastries

Crisps and chips

Chocolates

Cakes

Sweet biscuits

Savoury cracker biscuits

Chocolate-coated muesli bars

Full-fat milk and ice-cream



Carbohydrate intake should reflect daily training demands

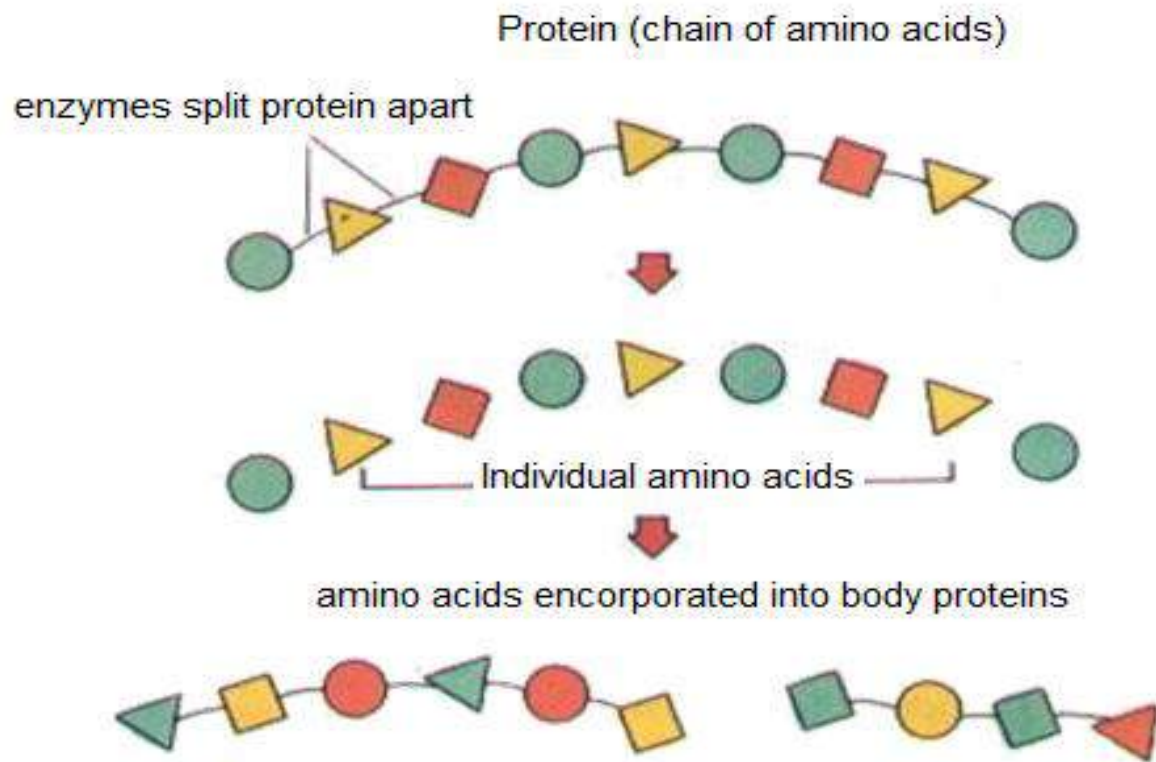
Include moderate amounts of carbohydrate at meals

- Skill based, low intensity training sessions
- Rest Days

Increase carbohydrate intake at meals and/or include at snacks

- Moderate to high intensity training sessions
- Long training hours

Protein



Protein

- This process of breakdown and construction of new protein (protein synthesis) is constantly happening
- There is an upper limit to rate of protein synthesis
- More is not always better
- Absolute amount of protein per day is important
- 'Spread' of protein across the day also important
- High protein diets are often high fat diets

Choose lean sources of Protein

- Cut visible fat of meat
- Remove the skin from poultry before cooking
- Use low fat cooking techniques
- Select low fat dairy foods



15-25g of Protein

Ham and cheese toasted sandwich

2 large eggs w 2 slices soy & linseed bread

Chicken 6inch sub

200g of Chobani yoghurt

Small can of tuna w vita wheats

Energize Up&Go 350mls & nut bar

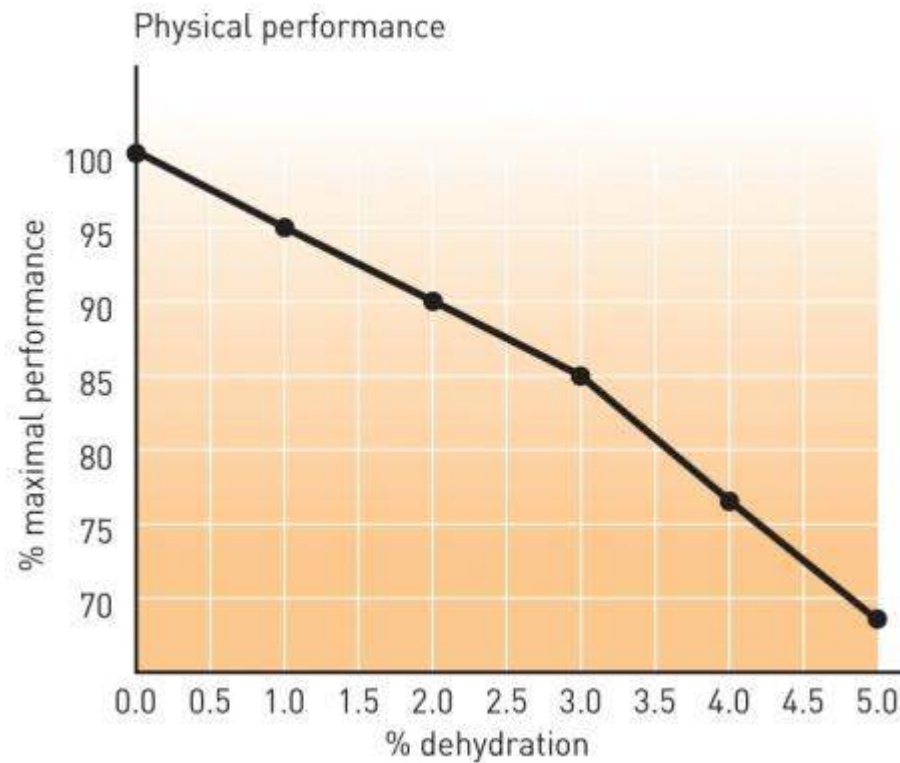
Glass of Sustagen Sport made w milk

Glass of soy milk w handful of nuts



Hydration

Consequences of dehydration

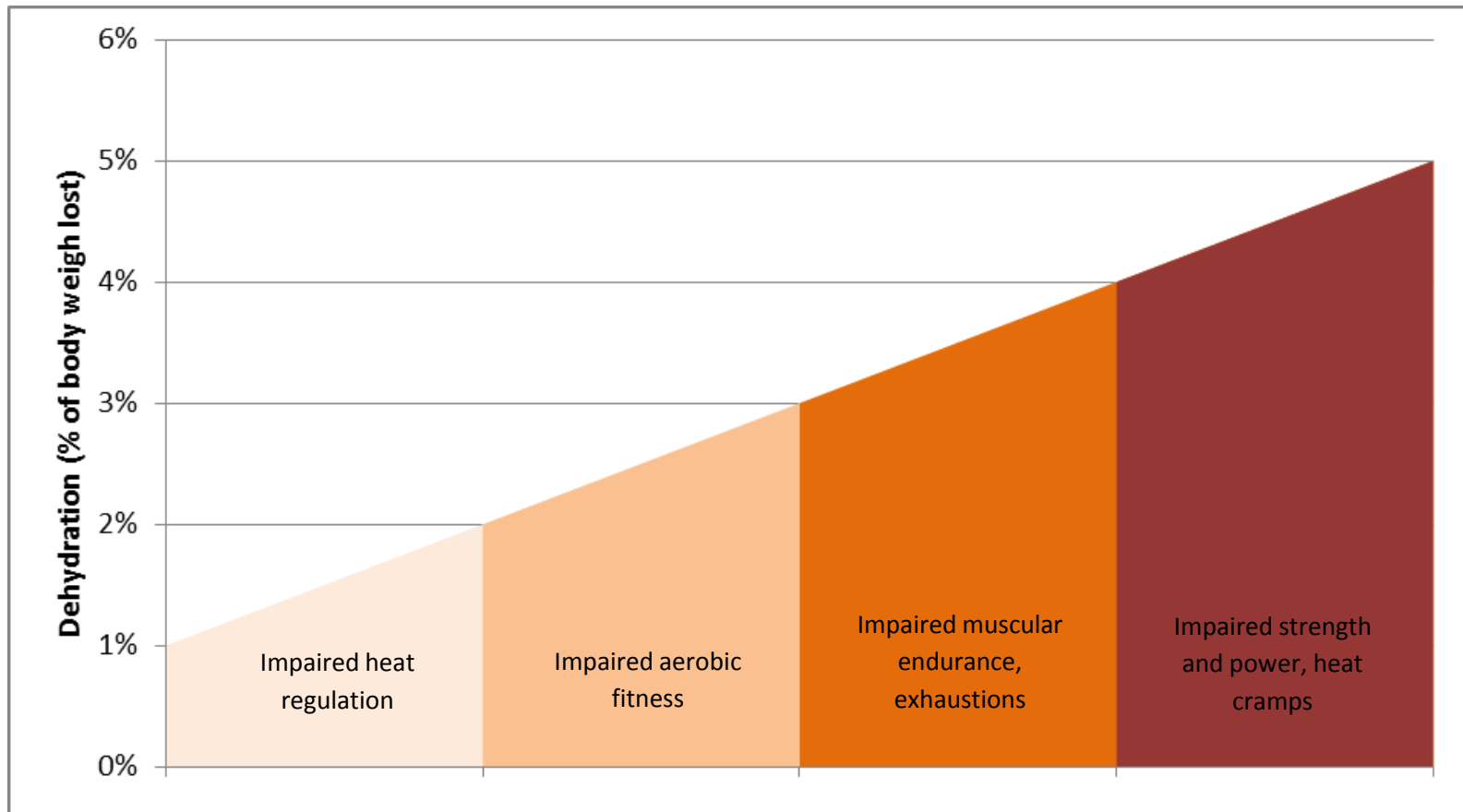


Consequences of dehydration

- Impaired heat regulation
- Impaired decision making/concentration
- Reduced muscular endurance
- Reduced muscular strength
- Cramping
- Dizziness, headaches
- Lethargy
- Heat exhaustion
- Heatstroke
- Coma
- Death



Consequences of dehydration



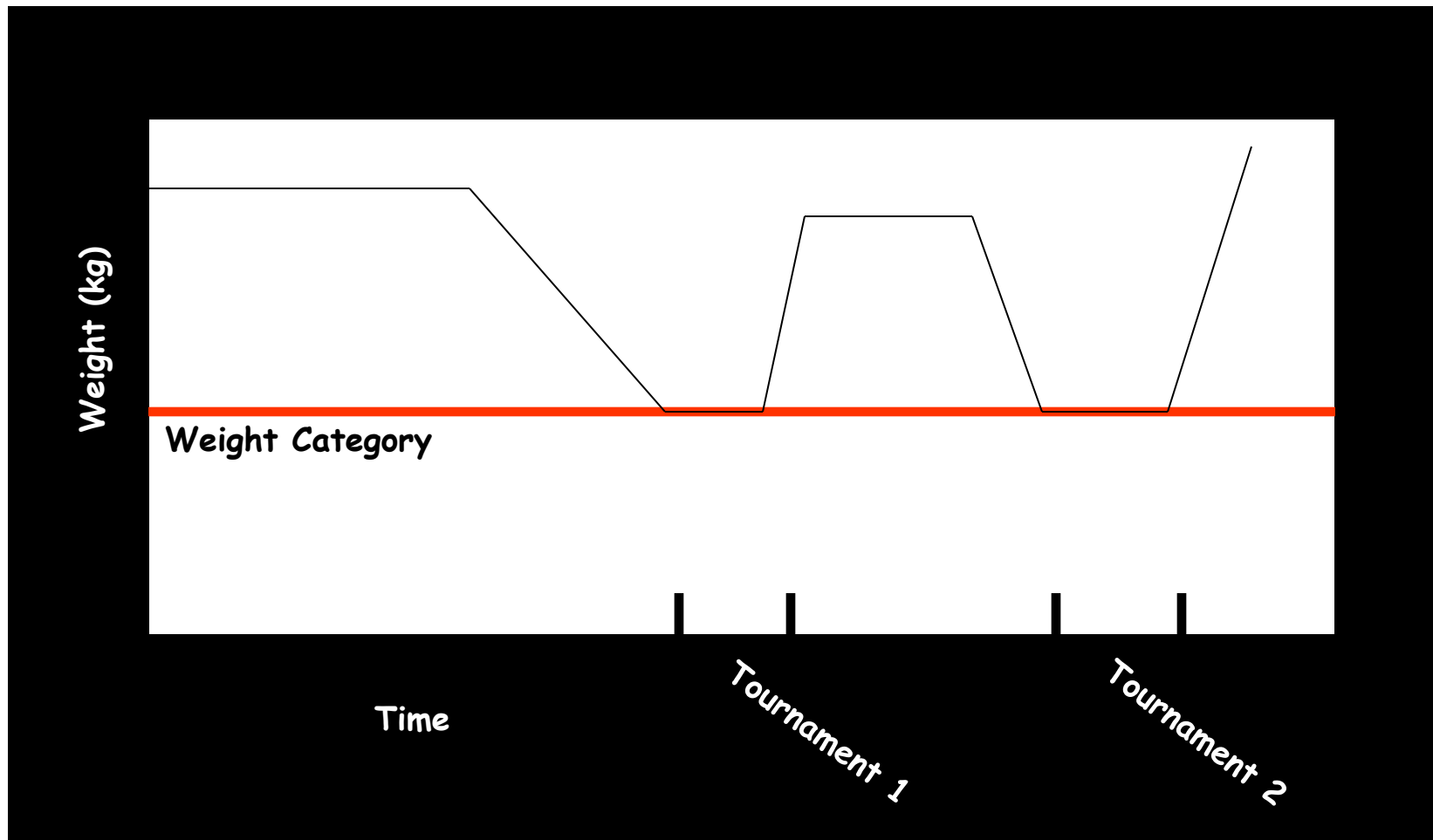
Develop a hydration plan

- Drink with all meals and snacks
- Drink 300-600ml before training
- Sip fluid during training
- Replace sweat losses after training
- Measure training losses
 - Weigh before & after
 - Drink 150% of weight loss before next session
- How do you know if your dehydrated?

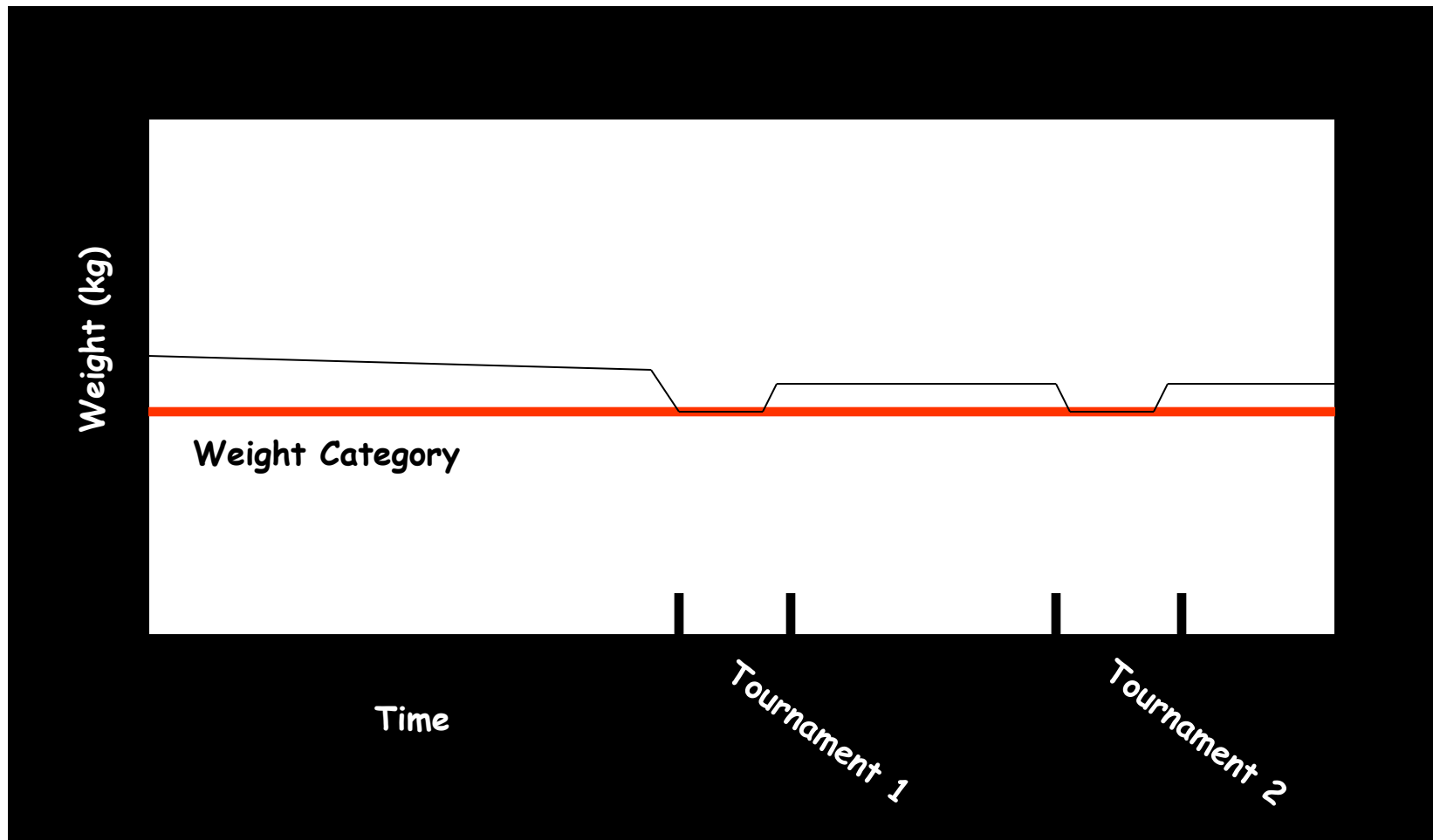


Weight Management

Poor Weight Management



Ideal Weight Management



Weight management

What contributes to our bodyweight?

Bone, muscle, body fat, organs, fluid, gut contents

While you're growing, all of these are changing
so weight division must change as you grow
and develop



Weight management

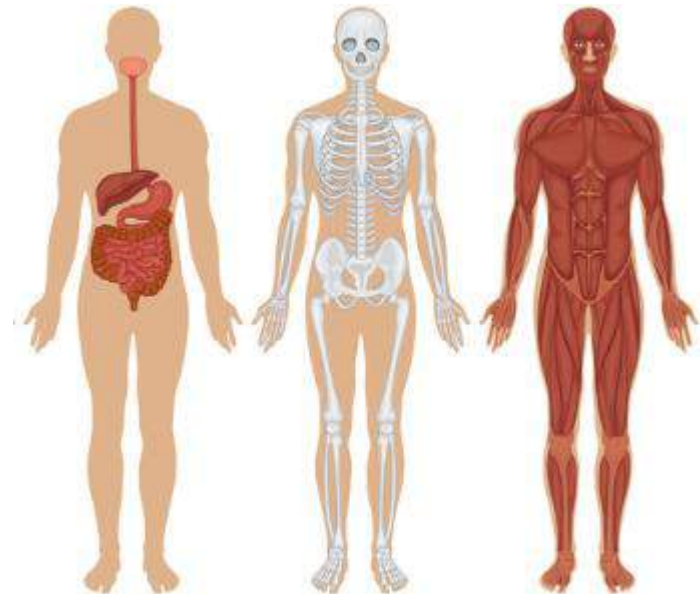
Once fully grown, the areas you could manipulate:

body fat

muscle

fluid

gut contents



Which can we manipulate short term/long term?

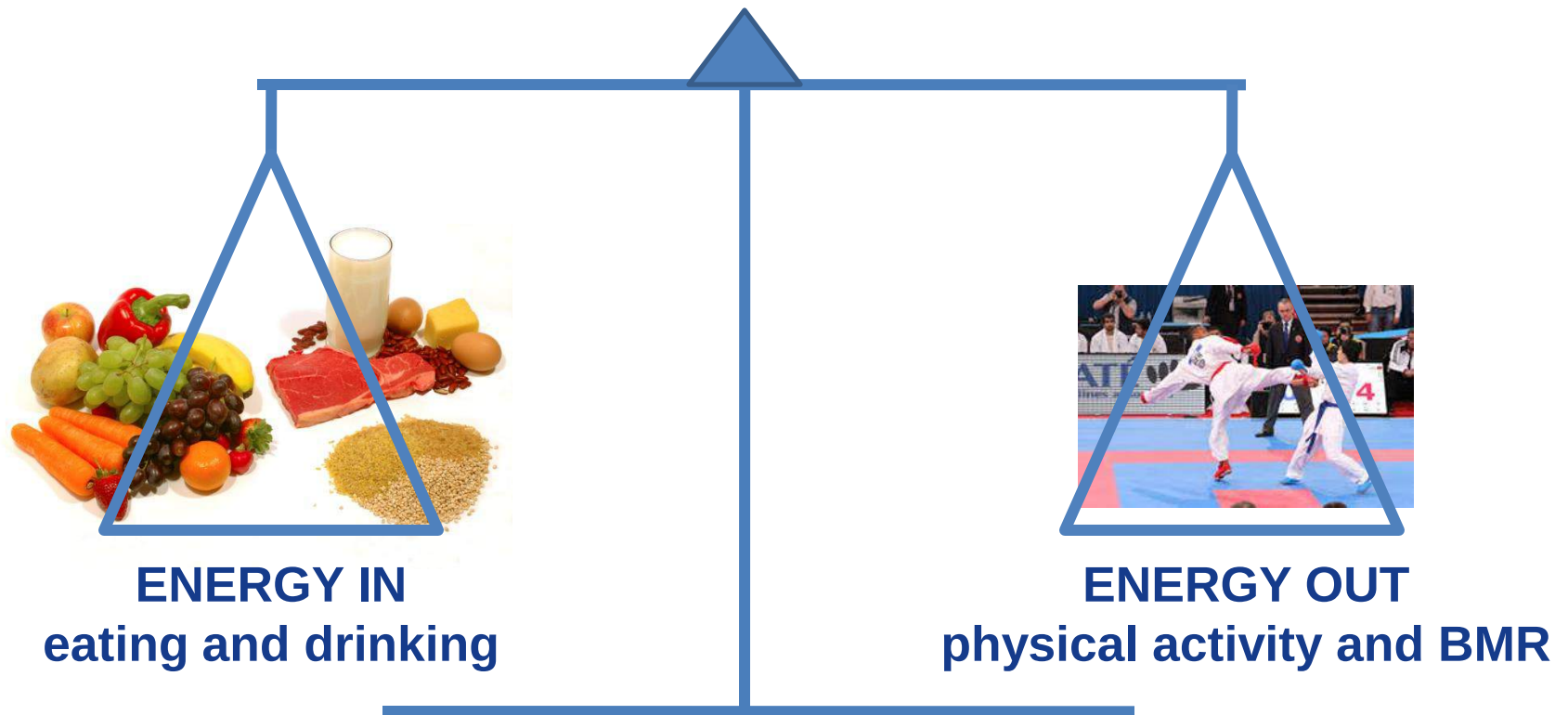
Weight management

Long term (weeks – months)	Short term (hours – days)
Body fat	Fluid
Muscle	Gut contents

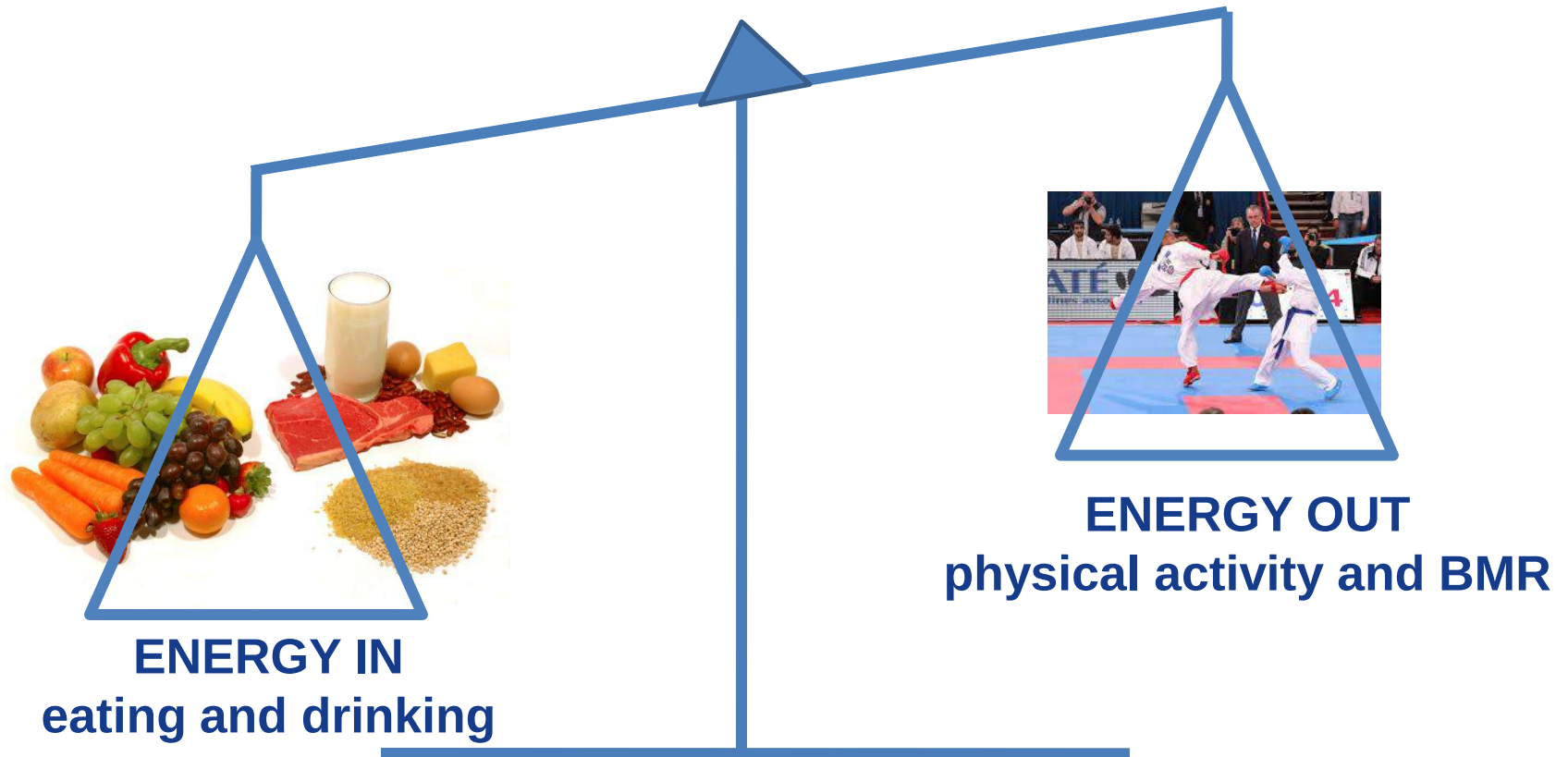
- What strategies do you use to change body weight?
- What body compartments do they change?

Long term weight management (body fat reduction)

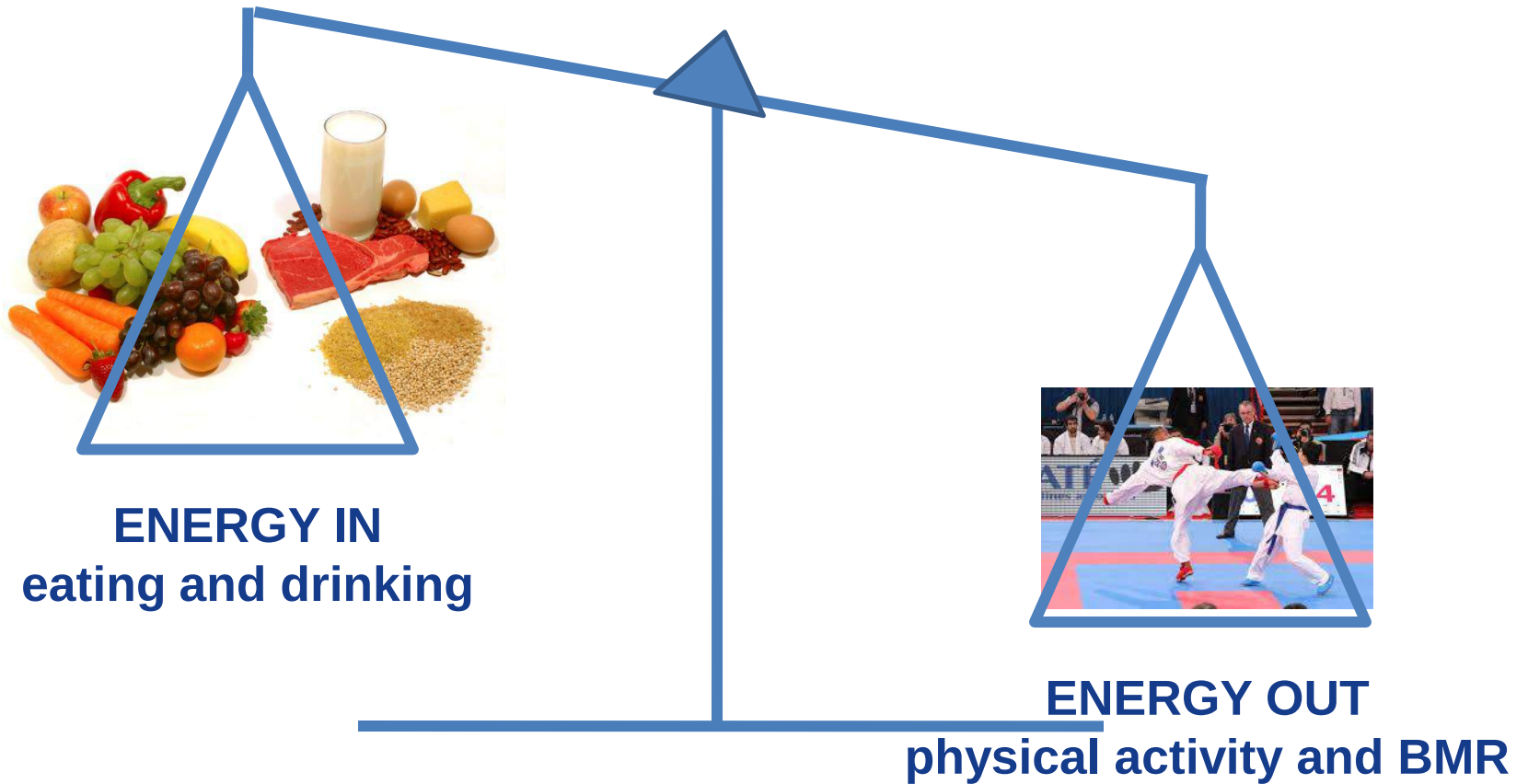
Long term weight management



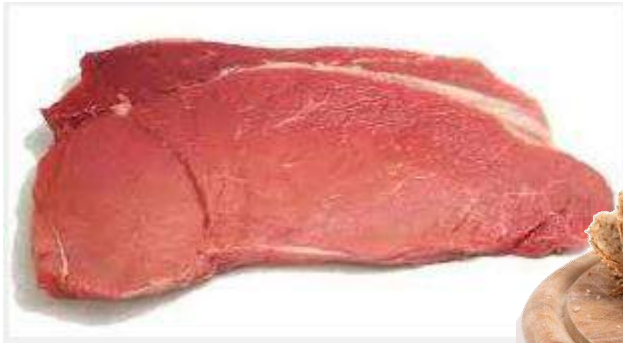
Weight gain



Weight loss



Energy density



Protein – 16kJ/g
4 kcal



Carbohydrates – 16 kJ/g
4 kcal

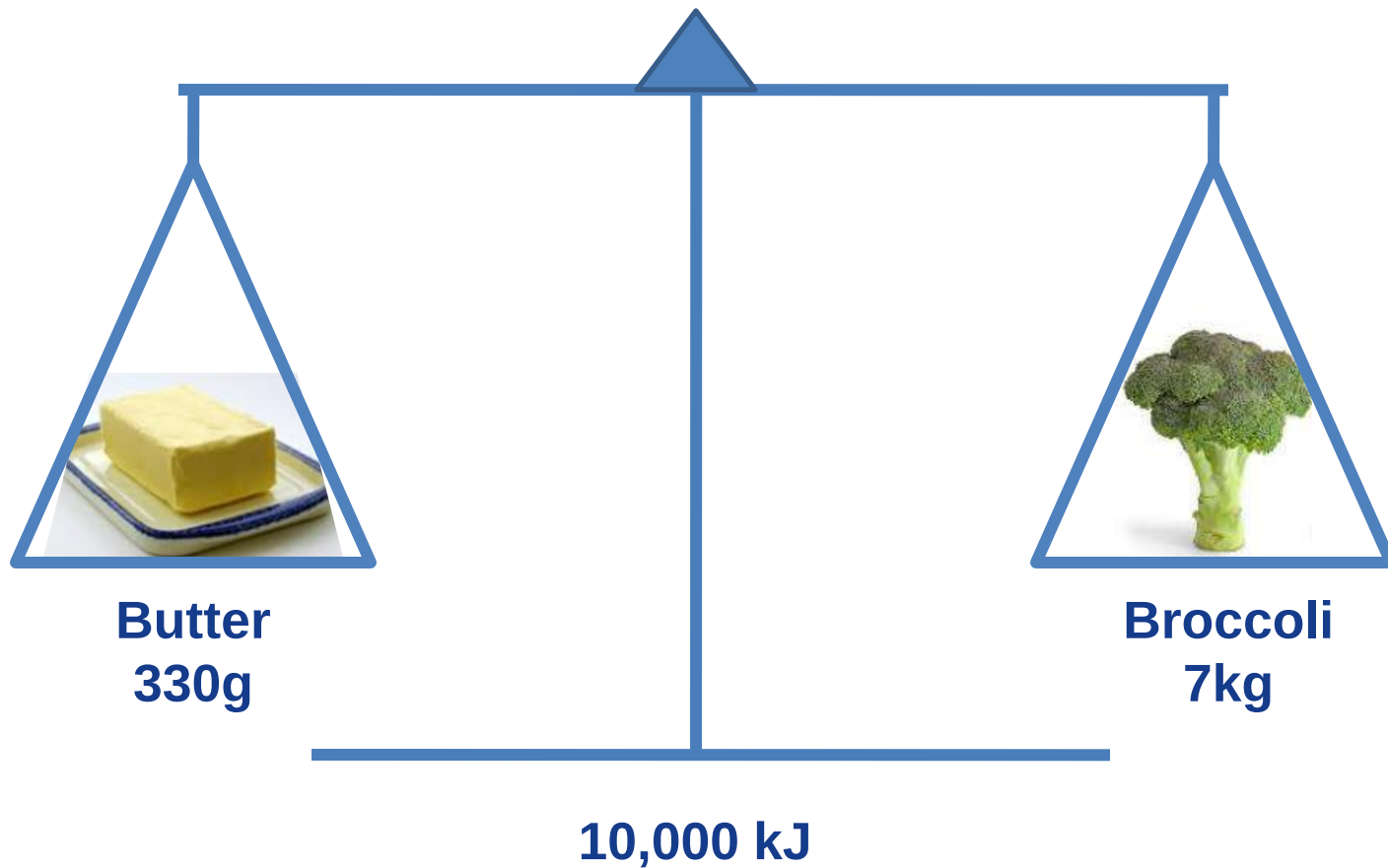


Fat – 37 kJ/g
9 kcal



Alcohol – 29 kJ/g
7 kcal

Energy density



The benefit of veggies



- Energy 1770 kJ



- Energy 1850 kJ

Choose your drinks wisely



- Energy 2846kJ



- Energy 3372kJ

Dessert Comparison



672 kJ



1236 kJ



306 kJ

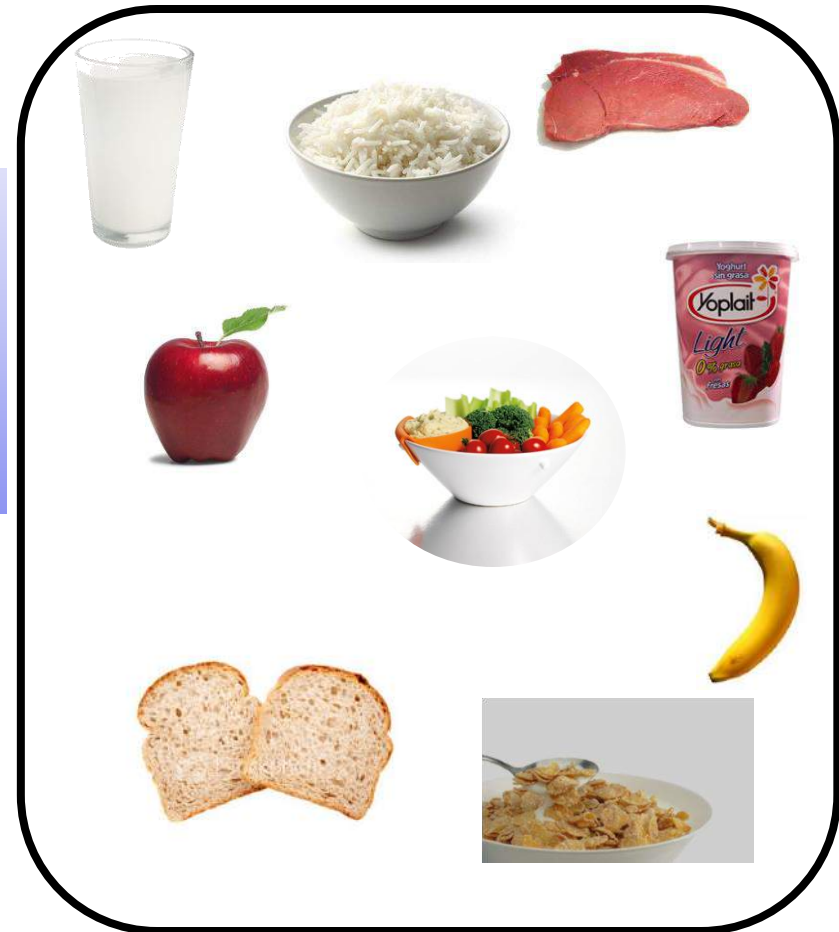
1 scoop crumble

Energy density in reality



Each Side
is the
Same in
Energy!

Which side would
keep you going all
day?



Snack comparison



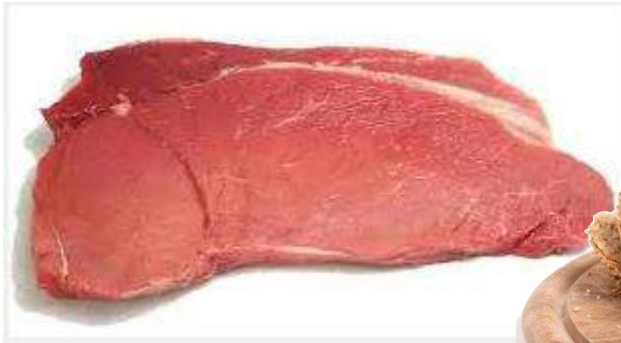
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2,200 kJ
50g Carbohydrate
7g Protein
33g Fat

2,200 kJ
95g Carbohydrate
25g Protein
5g Fat

Energy density



Protein – 16kJ/g
4 kcal



Carbohydrates – 16 kJ/g
4 kcal



Fat – 37 kJ/g
9 kcal

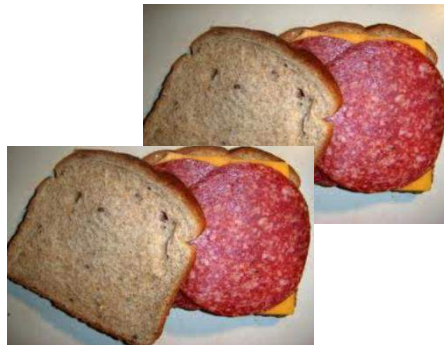


Alcohol – 29 kJ/g
7 kcal

Removing the fat



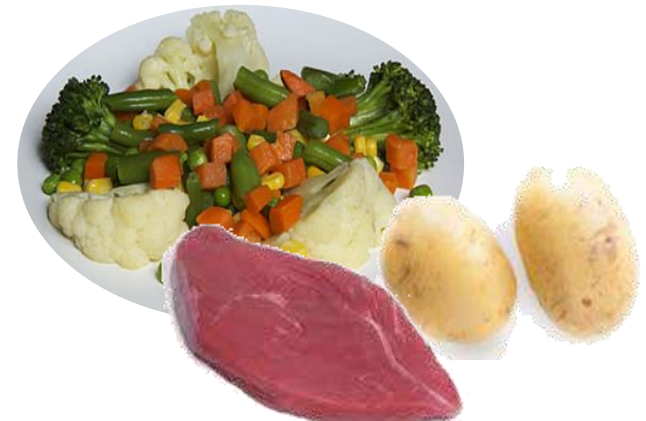
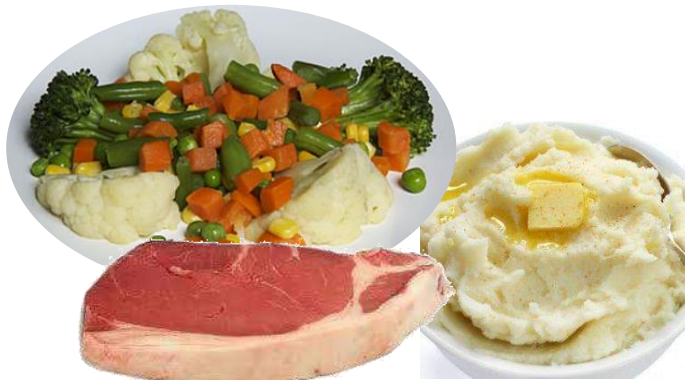
- 1050kJ



-1680kJ



Removing the fat



Removing the fat

Save 5040 kJ per day
=
½ kg body fat per week

Long term weight management

- Set a long term plan, maximum 0.5kg / week loss
- Eat consistently through the day (small but often)
- Reduce serve sizes at main meals, think about veg/protein/carb portions
- Reduce fat intake (fried foods, oils, dressings, butter / marg, lots of cheese / avocado / nuts)
- Drink water rather than juice / milk / cordial / soft drink
- Limit “treats” (chocolate, chips, etc) to no more than 1 / week
- Increase fruit and vegetables and use more wholegrain breads / cereals
- May be able to increase exercise?

Questions?

Weight management

Long term (weeks – months)	Short term (hours – days)
Body fat	Fluid
Muscle	Gut contents

Gut contents

Strategies to manipulate gut contents

- Vomiting 
- Laxatives 
- Starvation 
- Food restriction
- Low residue diet 



Low residue diet

- Dietary fibre: indigestible portion of food derived from plants and waste of animals that eat dietary fibre
- Provides bulk to meals without adding energy/kilojoules/calories
- Adds bulk to your stools, attracts water into the intestinal space
- Prevents constipation



Low residue diet

- Used for 2-3 days immediately before weigh in
- Low fibre
 - no fruit, limited range of vegetables
 - white breads / low fibre cereals
 - no nuts, seeds



Low residue diet

- Remove fibre component



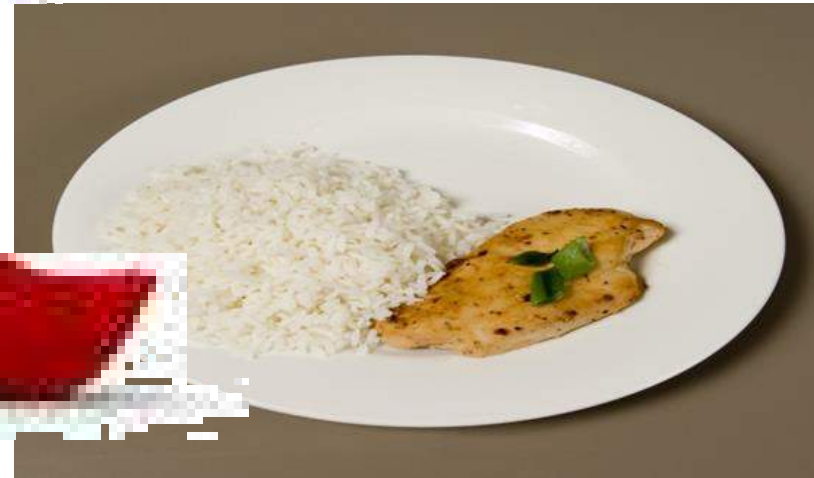
600g



300g

Low residue diet

- Don't pig out



Example low residue diet

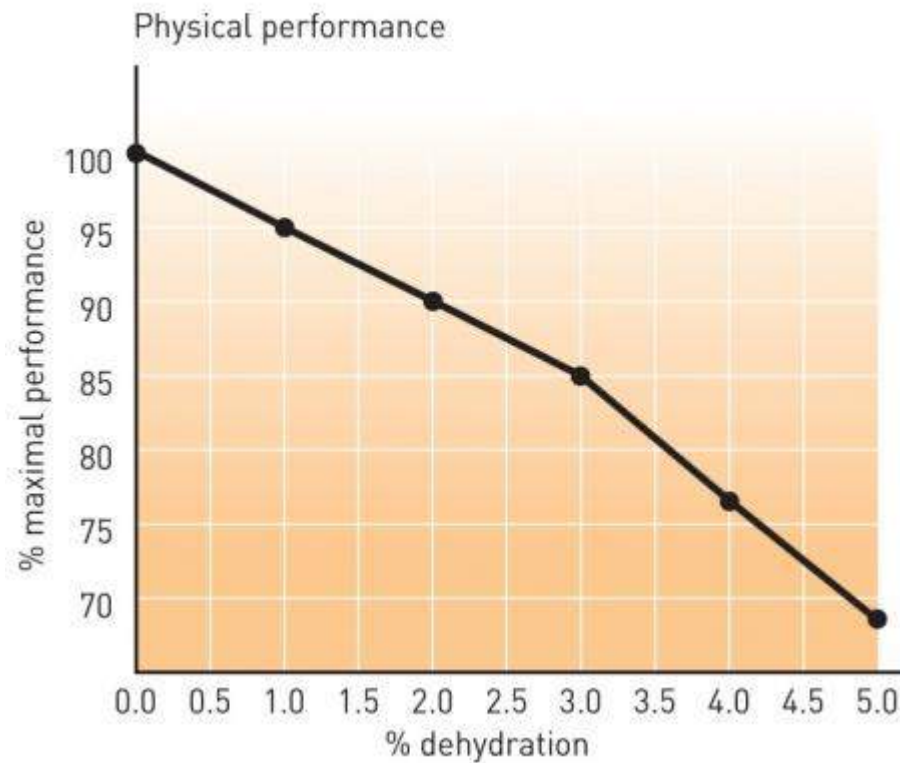
Breakfast	2 scoops rice bubbles with low fat milk OR 2 slices white toast or 1 English muffin with jam or honey (no marg) plus a low fat vanilla yoghurt
Morning Snack	1 low fat milk drink (with milo or plain)
Lunch	1 wrap with cold meat or tuna or chicken (no salad) OR 1 white bread sandwich OR 1 scoop of rice with chicken / meat (take veggies out)
Afternoon Snack	1 yoghurt OR a glass of milk OR 6 rice crackers
Dinner	1 scoop of boiled rice or pasta with ½ scoop tomato based sauce (no veggies) – e.g. Bolognese sauce OR 1 small piece of fish with 1 scoop potato and zucchini
Evening Snack	1 small scoop of custard or a tub of yoghurt

Fluid & fluid balance

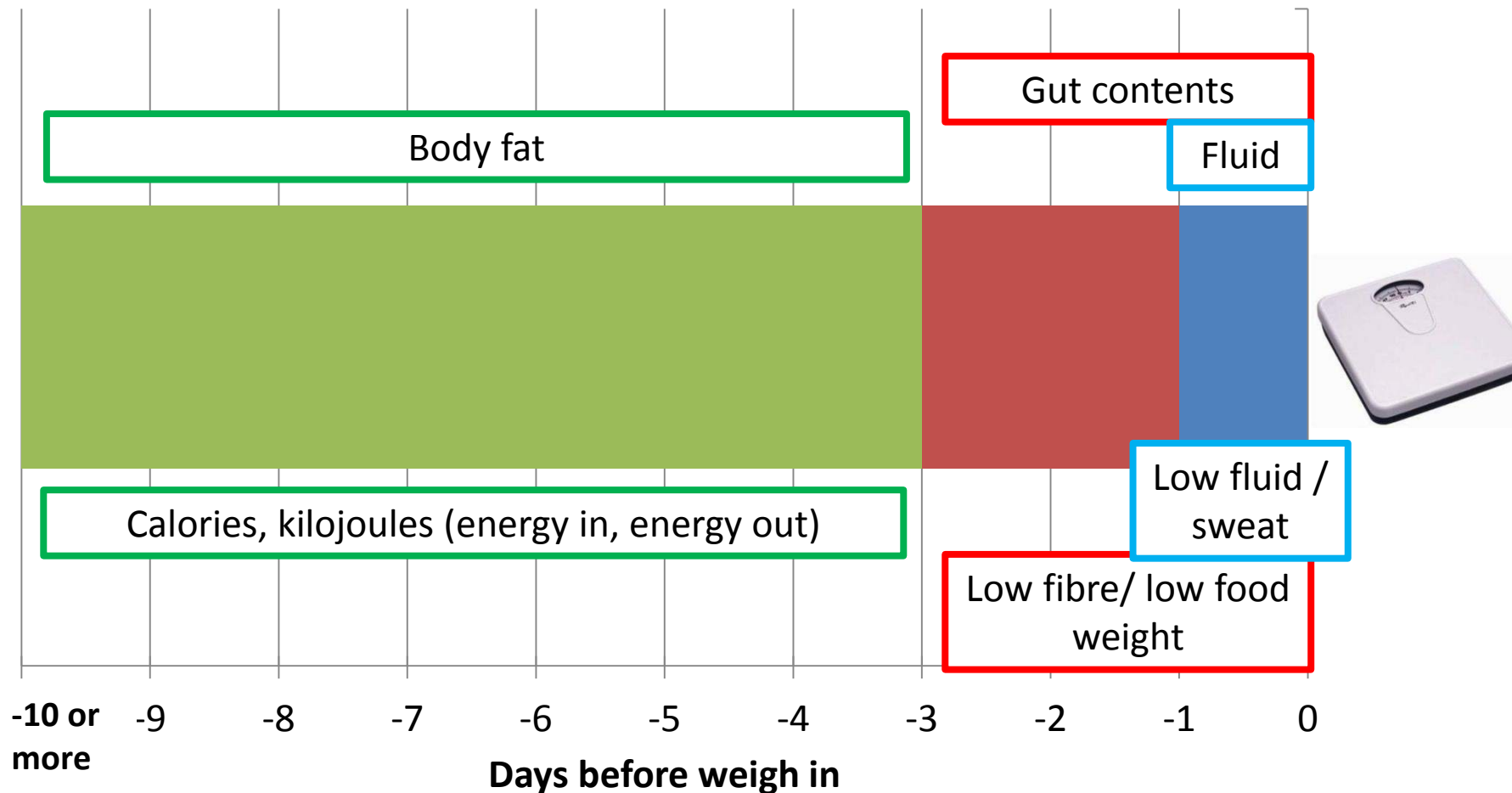
Dehydration

Passive dehydration	Active dehydration
Fluid restriction	General training
Sauna	Sweat runs
	Training in extra layers
	Exercise in hot/humid environment

Consequences of dehydration

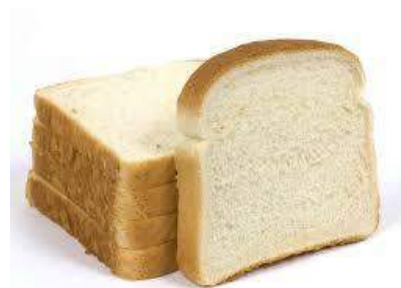


Long term vs short term weight loss



Making weight

- What you remove in order to make weight, you MUST replace!!!
- Think about stomach comfort



Practice this BEFORE you get to competition

Questions?