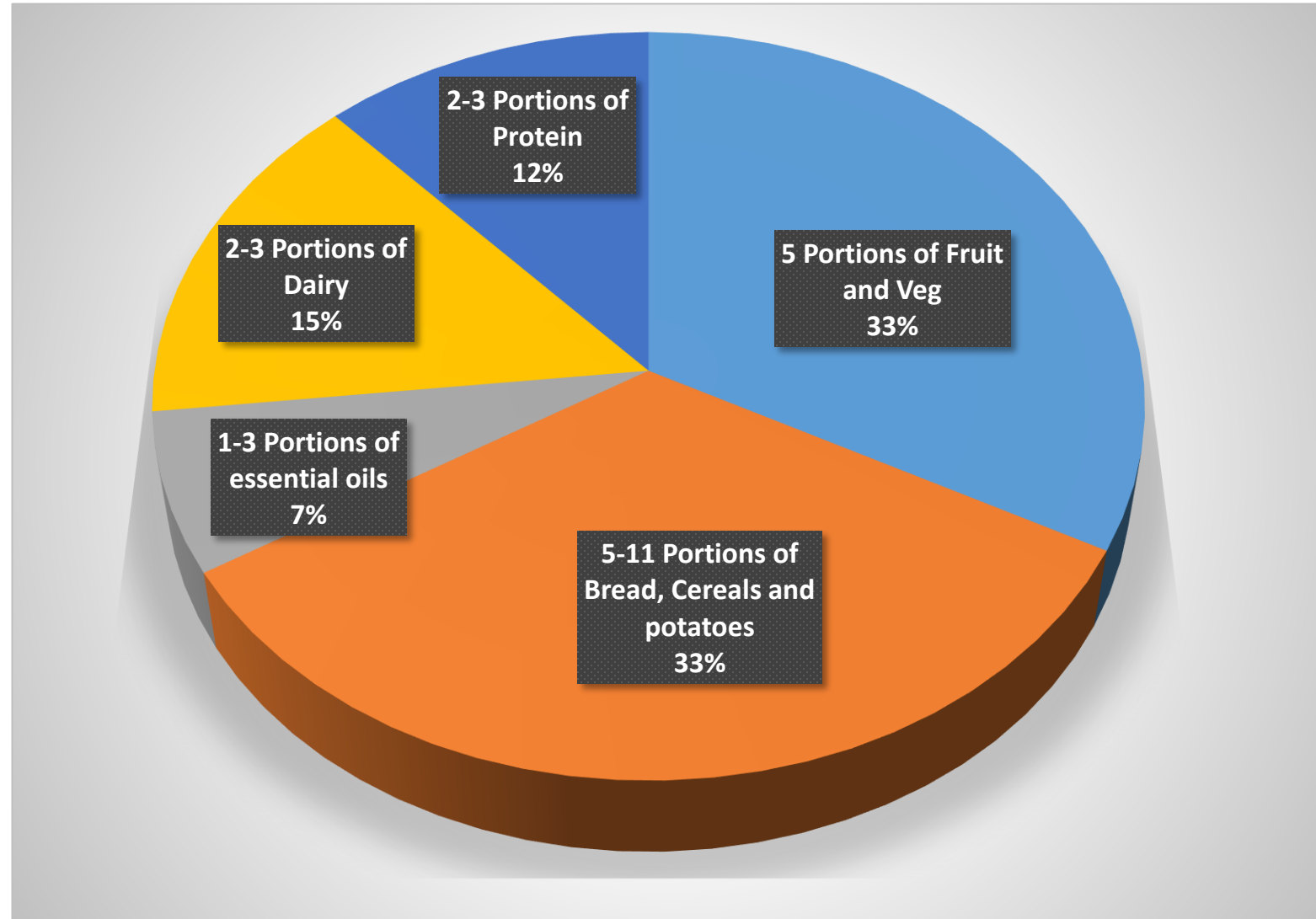




Nutrition for Performance

Fuelling and staying fuelled

Eating a balanced diet. Daily requirement.



What is a calorie?

- For this session, the energy needed to raise the temperature of 1 kilogram of water through 1 °C, equal to one thousand small calories and often used to measure the energy value of foods.
- This is a kcal
- How many calories do we burn:
 - A normal day?
 - A hour when cycling?

Calories from food. 1 gramme of:

- Carbohydrate = 4kcal
- Protein = 4kcal
- Fat = 9kcal
- Alcohol = 7kcal

- Which is the:
 - Most efficient fuel?
 - The fastest accessible fuel?
 - The worst fuel?

Fuel stores:

- Glycogen in muscles and liver 1,600-2,000kcal
 - Protein in muscles
 - Fat in special fat cells
-
- How can I tell the difference between saturated and non-saturated fats?

Hydration

- Dehydration is losing too much fluid from the body, and not replacing it.
 - Drink before, during and after training and racing.
 - Sip fluids rather than gulp.
 - Aim for 500ml of fluid per hour
-
- Isotonic – In balance with the body – easily absorbed (carbs and salts)
 - Hypotonic – Fast emptying from the gut (low carb and minerals)
 - Hypertonic – Slow empty from the gut (high carb >10%)

De-Hydration

- Reduction in blood volume
- Decreased skin blood flow
- Decreased sweat rate
- Decreased heat dissipation
- Increased body core temperature
- Increased rate of muscle glycogen usage
- Muscle cramps
- Gastric distress
- Where fluid loss is greater than 15% - high risk of death

What does 200kcal look like?



Cooked Pasta
145 grams = 200 Calories



Avocado
125 grams = 200 Calories



Canned Tuna Packed in Oil
102 grams = 200 Calories



Fiber One Cereal
100 grams = 200 Calories



Flax Bread
90 grams = 200 Calories



Dried Apricots
83 grams = 200 Calories

What does 200kcal look like?



Red Onions
475 grams = 200 Calories



Apples
385 grams = 200 Calories



Canned Green Peas
357 grams = 200 Calories



Whole Milk
333 ml = 200 Calories



Kiwi Fruit
328 grams = 200 Calories



Canned Sweet Corn
308 grams = 200 Calories

Discussion

- The body can absorb (at peak) 1.5 grammes of carb per minute
 - How many gels per hour?
 - How much sports drink?
 - Meals before a race?
 - Meals after a race?

What next?

External references

- <http://www.britishcycling.org.uk/knowledge/nutrition/article/izn20141208-Road-Avoiding-Stomach-Problems-0>
- <http://www.britishcycling.org.uk/knowledge/nutrition/eating-on-bike/article/izn20141119-Beginner-Pre-Ride-Breakfast-0>
- <http://www.britishcycling.org.uk/knowledge/nutrition/get-started/article/izn20150310-Intermediate-Cycling-on-a-vegetarian-or-vegan-diet-0>
- <http://www.britishcycling.org.uk/knowledge/nutrition/article/izn20140305-Sportive-Nutritional-Timeline-0>