

Overview of macronutrients in food (Wk 1 lecture 1)

- **Identify broader aspects of what influences the food supply system**
 - Food supply is influenced by consumer wants/social changes; food industry and food supply; and nutrition research.
 - Marketing influences what we buy as consumers and what we think is good for us – mainly based on poor science though.
 - Nutritionists need to really work alongside the food industry to ensure that there are regulations in place for things such as Trans-fatty acids in food.
 - A major factor influencing the increase in obesity is that food suppliers are constantly increasing the size of products so we get better value – but this value is at expense of our health.
- **Discuss the main macronutrients & issues associated with them**
 - Foods are classified according to which macronutrients are in the largest proportion.
 - Carbohydrates: 45-65% of diet ideally; body's preferred source of energy for brain – you can survive without carbs but your body doesn't like it.
 - issues associated with CHO: GI and blood sugar control, lactose intolerance (essentially CHO intolerance), dental caries, dietary fibre and cancer.
 - Fats: ideally 15-20% of energy in diet.
 - Polyunsaturated fatty acids: omega-3 (fish, seafood, green leafy veg) and omega-6 (sunflower, safflower oil)
 - Monounsaturated fatty acids: olive and canola oil.
 - Saturated fatty acids: animal foods, coconut oil and palm oil.
 - Issues: our bodies have an unlimited storage capacity of fats in humans and animals; increases atherosclerosis → lipids; hydrogenation of fats (trans-fatty acids); long-chain polyunsaturated fatty acids → heart health, stroke, rheumatoid arthritis, depression and dementia.
- **Discuss food energy and how it is measured**
 - International system of units (SI units) of energy is joules.
 - kJ content in food is measured by:
 - Direct calorimetry: measures heat output from body using an insulated chamber; expensive and complex.
 - Indirect calorimetry: measures amount of oxygen a person uses as a predictable relationship exists between the body's use of energy and oxygen.

Obesity (Wk 1 lecture 2)

- **Define obesity in kids and adults**
 - Simplest method is using the BMI, and also measuring waist circumference (as where the fat is sitting increases your risk factor). However just a BMI is not enough- we need to eyeball them as well and look at their whole body composition.
 - $BMI = w \text{ (in kg)} / H^2 \text{ (in metres)}$ → this measures body mass and not body fat.
 - $BMI > 25$ associated with increased risk of CVD and diabetes.
 - 'Apple' shape is a problem, however 'pear' shape isn't.
 - BMI is not a good measurement in kids – BMI is used for age charts. On average, 1/6 children have a waist wider than recommended.
- **Describe factors influencing obesity in Australia**
 - Lack of food knowledge
 - 'Toxic' foods → ultra-processed foods.
 - Affordability and cost
 - Culture of eating in Australia → we have very busy and sedentary lifestyles and not a good relationship with food – we eat on the go and have very bad portion control. Your relationship and awareness of food has a major impact on your health.
 - Changing in schooling systems – less time for P.E in school due to crammed curriculum. More 'safety' measures in school so children are not allowed to run or play in the playground.
 - Food preferences, alcohol, exercise, culture, TV watching, social norms, education, satiety due to poor diet.
- **Describe methods for managing obesity**
 - Medical: medications, surgery to inhibit and restrict → these are extreme and 'brutal' methods though.
 - Environment: exercise, diets, lifestyle change
 - Social: education, culture change, counselling, portion size control, food supply change, increasing affordability of healthy foods.
- **Discuss how the food industry has responded to the problem of obesity**
 - Compliance with food labelling – making it easier for people to read a food label and make a good judgment.
 - Applications of new technologies – low and no fat foods with good mouth feel; sterol margarines.
 - Greater range of foods.
 - Positive role models. Eg. Wiggles, but also Shrek custard.
 - Massive changes to portion sizes