

Diet and Nutrition for Health and Sport (EDGU1003)

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General Nutrition and facts

Definitions:

- **Nutrition** is the study of nutrients, vitamins, minerals and food components that help keep us alive

Food choice effects:

- Genetics
- Weight
- Mental Health/Mood/Concentration
- Digestion
- Sleep patterns
- Immunity

What does health involve?

- **Health is a state of wellbeing free from disease or infirmity**
- **Use a holistic approach to health!**
 - Sleep
 - Relationships/spirituality
 - Stress management (cortisol and adrenaline)
 - Cortisol is “obesogenic” causing you to put on weight more easily
 - Mental Health
 - Physical activity
 - Nutrition
 - Needed for health and growth
 - Macronutrients (fats, carbs, proteins, fibre)
 - Micronutrients (minerals, vitamins)

Benefits of good nutrition:

- **Short term** (weeks/days/months)
 - Energy and good digestion
 - Sport recovery
 - Focus and brainpower (omega 3 fatty acids in fish help memory)
 - Weight maintenance
 - Better sleep patterns, mood, blood flow
 - Healthier skin, hair, nails
- **Long term** (years)
 - Type 2 diabetes and heart disease prevention
 - Cancer prevention
 - Causes
 - Can occur in any part of the body where food touches (mouth, oesophagus, stomach, etc...)

- Caused by carcinogenic compounds (can include overcooked charcoal foods)
 - Leads to gastro oesophageal reflux disease and gastric ulcers
- Treatment (chemotherapy)
 - Leads to cachexia (weight loss), nausea, vomiting, loss of taste
 - Garlic, cabbage, broccoli, kale, avocado, oranges, lemons, can all help prevent and fight cancer
- Recovery
 - Protein is very important during recovery to replenish the body stores!
- High blood pressure (linked to cardiovascular disease) prevention
- Dementia and osteoporosis (more likely to break bones from weakened strength) prevention
- Help with Crohn's disease (IBD)
 - Involves inflammation of the lower digestive tract
 - Leads to pain, diarrhoea, weight-loss, and fevers
 - Omega three fatty acids benefit sufferers with anti-inflammatory effects
 - Avoid caffeine, gastric stimulants, chilli, garlic, creamy foods
- Help with diverticulosis (pouches develop in the GIT)
 - Leads to diverticular attacks
 - Avoid eating small foods
 - Chew food very well
- Help with better eyesight
 - Prevent macular degeneration (dark spot in centre of vision), glaucoma (dark spots from outside of vision), cataracts (blurry vision)
 - Due to lack of lutein and zeaxanthin in the diet!
 - Come from foods that are yellow (kale, egg yolk, oranges, mandarins, carrots)
 - Block the blue light that enters and burns the macula
- Prevents gout (painful swelling of knuckles, hands, ankles)
 - Purines cause gout

Heart health and nutrition choices:

- Mediterranean diet
 - Has lots of α -linoleic acid (ALA)
 - Rich in healthy fats
 - Lots of fresh fruit and vegetables
- Fruits and vegetables
 - Antioxidant action (stops cells from mutating)
 - Prevents oxidative damage from free radicals
- Soy foods
 - Have isoflavones and protein active ingredients to act as antioxidants

- Have few lipids
- Have an antithrombotic action
 - Decrease platelet aggregation
 - Increases vascular reactivity (allows body to respond to blood pressure changes more easily)
- Wholegrains
 - Have lots of soluble and insoluble fibre
 - Gut can break some down
 - Remaining fibre acts like glue to excrete unwanted products
 - Has few LDL cholesterol
 - Low GI foods
 - Improve insulin sensitivity (prevents
 - Phytoestrogen active ingredients
 - Helps with risk factors such as BSLs, has low HDL cholesterol, and few lipids

Why do we eat different food types?

- **Psychological influences**
 - Emotions (eating out of sadness, nervousness, happiness)
 - Habits
 - Self-concept and image
 - Values (ethical eating)
 - Hunger/craving/appetites
 - Ghrelin is a stomach hormone that control hunger (signals when stomach is full)
 - Ghrelin levels are high when the stomach is empty and falls as we eat!!
 - Ghrelin receptors are found in the hypothalamus
 - Leptin is a stomach hormone that control satiety
 - Takes 10 minutes to have an effect so eat slowly!
 - Taste
 - Heredity
 - Age and gender
- **Lifestyle influences**
 - Social reasons
 - Cultural/religious
 - Food trends
 - Seasonal
 - “Super foods”
 - Advertising
 - Convenience
- **Economic influences**
 - Cost
 - Fresh vs. frozen

- Availability
 - Seasonal variations
 - Metropolitan vs. rural
- Time

Food culture:

- **Eat to live** describes eating food for its nutritional value
- **Live to eat** describes eating food as enjoyment
- Changing due to **food vans, takeaway, lunchbreaks, finer dining, budgets**
- Influenced by family upbringing, media, health conditions, influence of sports (diet)

Food and economics:

- Australian reputation for high-quality, safe, and nutritious food
- **2011/12 report**
 - Australian farmers produced food for 40million people outside of Australia (50% went to Asia (proximity!))
 - Only 2% of milk/dairy not grown locally
 - 20% of Australian manufacturing sales income is due to food industry
 - \$30.5 billion spent on food exports vs. \$11.3 billion spent on imports
- **Exports from Australia**
 - Wine (viticulture) to China, Japan, Korea, Taiwan, Thailand, Philippines
 - Beef and Dairy to Taiwan
 - Seafood, vegetables, fruits, processed foods to Japan
- **Biggest crops**
 - Barley
 - Cattle
 - Cotton
 - Oats
 - Rice

Over 90% of fresh food eaten in Australia is grown locally!!

History of food selection in Australia:

- Pre-1950s, not much diversity among food selections
- Multiculturalism brought many different types of food cultures
- Until 1990s, only commercially cultivated Australian native food was the **macadamia nut**
- Up to 5000 native food species used for food purposes by Indigenous Australians before settlement
- Kangaroo meat very high in iron!
- **Anise Myrtle**
 - Mature leaves used by aboriginal people as a vitalising tonic
 - Antibacterial effect against bacillus subtilis

- **Bush tomato**
 - Dried berries used for their antioxidant effect

The Australian diet:

- Lots of meat, processed foods, fried foods
- 45% from carbs, 25% from protein, 30% from fat
- High alcohol consumption rates
- **Eat lots of “triad nutrients”**
 - **Salt, sugar, fat!**
- **Need more:**
 - Vegetables and fruits
 - Wholegrains
 - Milk, yoghurt, cheese (need more low-fat dairy!!)
 - Lean meat
 - WATER!
- **Need less:**
 - Processed and fried foods
 - Soft drinks, energy drinks, sports drinks
 - Alcohol
 - Sweets