

## **SAMPLE OF THE FIRST PAGE OF WEEK 1, 2 AND 3**

### **Week 1: Food History & Australian Food Culture**

**Primates-** *human like, great apes. Jungles thinned out caused a move from trees to grassland for food (diet changing).* Found roots, small insects, lizards, moles, etc. As brains became larger-learnt how to throw stones to kill prey and work together for a bigger feast. Started to compete with lions and other animals.

4-10 million years ago

**Australopithecus-** Early pre-human. Teeth changed shape-enabled speech and got hard enamel (added things like nuts to diet). Developed hands capable of making tools. Omnivores

3 million years ago

**Homo habilis-** Scratches on animal bones suggests they started to butcher, may have used tools.

1.8-2.5 million years ago

**Neanderthals-** Mainly carnivores. Skilled hunters, used tools, had rituals and culture (cared for sick and aged) (more community) particularly adapted to ice age. Human like.

Would eat the whole animal-organs, blubber, eyeballs.

400 000 years ago

#### **Fire and cooking**

Cooked foods provides more digestible starch and protein and easier digestion=more energy. Crucial as chemical composition of food changed and we could eat more.

Provided warmth, protection from animals, cooking.

#### **Modern Humans/Homo Sapiens**

Appeared approx. 250 000 years ago

Neanderthals became extinct approx. 30 000 years ago through (THEORIES) climate change and modern humans killing them off but isn't exactly clear.

HS ate more fish and plants than N

'Hunter-gatherers' – only eating from the land and what it produces. Moved around a lot.

**Paleolithic diet-** no grain, no dairy, no farming yet. Use of stone tools. Most energy comes from meat and fish. A lot higher animal foods than what we consume today.

Meat is also different now, higher in saturated fat as animals are sitting around compared to before-more poly-unsaturated fat.

Higher in protein due to large meat consumption. Lower in fats due to the different composition of fats mentioned above and 'junk' food not being around.

#### **Neolithic (new stone age) Revolution**

-Due to hunter-gatherer lifestyle being nomadic and not supporting large pop. A change to settled farmer and stock-breeder occurred.

-Ice age over=climate change which allowed them to now grow seeds.

-Cooking skills further developed with the evolution of grain and wheat. Instead of following the food they realised they could farm and stay in one place-make permanent housing.

-Released by attracting the animals with wheat they could keep them- beginning of domesticating animals. Use for labor, plowing field, milk, meat.

## Week 2: Nutrients in Food

**Nutrition** is the science of food, the nutrients and the substances therein, their action, interaction, and balance in relation to health and disease, and the process by which the organism ingests, absorbs, transports, utilizes and excretes food substances.

Essentially food and how it reacts in your body.

-Food is mainly made up of nutrients- water, lipids (fats), carbohydrates and protein. It also contains other nutrients – vitamins and minerals. As well as non-nutrient substances (not essential but important for health) – dietary fibre, phytochemicals and additives.

### Essential nutrients

-Required for normal functioning of the human body but can't be synthesized by the body-need to be ingested from dietary sources.

-Examples: fatty acids (from lipids/fats)→omega 3 and 9, amino acids (from proteins)→arginine, cysteine, etc., vitamins→vit. A, B group, C, etc., minerals→calcium, iron, potassium, etc.

**Macronutrients** are lipids (fats), carbohydrates, and protein. They're needed in fairly large amounts & can be turned into energy.

**Micronutrients** are vitamins and minerals. Needed in very small amounts and don't provide energy.

### Energy yielding nutrients

Fat: 37kJ/g

CHO (carbohydrates): 16/17 kJ/g

Protein: 16/17 kJ/g

This is the amount of energy body can actually access from these nutrients.

### LIPIDS – Fats and Oils

-Chemically called triglyceride. Glycerol backbone + 3 fatty acids= triglyceride.

-At room temp. fat is solid (blubber, lard) and oil is liquid.

-Non-polar-doesn't mix with water.

#### Fatty acids

-Saturated (no double bonds) or unsaturated (double bonds)- monounsaturated (one double bond) and polyunsaturated (more than one double bond)

-Saturated fatty acids=solid, unsaturated fatty acids= more liquid

#### Essential fatty acids (EFAs)

-Linoleic acid (Omega 6) and linolenic acid (Omega 3) →fish/oil. are essential – need to ingest them. They're needed for immune function, vision, cell membrane and production of hormone like compounds.

Fats and oils properties include, they carry flavor, texture, tenderness, heat transfer (eg. Deep frying)

### Carbohydrates

-Characteristic of plants. Sugars, starches and dietary fibre.

## Week 3: Measuring Food Intake and Food Behaviours

### Nutrition Assessment

-Allows for investigation and interpretation of relationships between diet and disease of individuals (small scale) and populations (large scale) nutrition status. Increase advancement and knowledge base around nutritional science.

-Involves 4 components: **A**nthropometrics **B**iochemical **C**linical **D**ietary

#### **Anthropometric**

-Height, weight, waist circumference, hip circumference, skinfolds. BMI & waist:hip ratio.

-Measurements are taken periodically-not one off, ongoing/continual.

Comparison of past to now

Advantages: Simple, cheap

Disadvantages: doesn't tell us anything about nutrients, although gives a hint about excess/deficiencies through obesity and malnutrition

*BMI* – body mass index= weight (kg)/ height (m<sup>2</sup>) >40 morbidly obese, 30-40 obese, 25-30 overweight, 18.5-25 normal, <18.5 underweight

#### **Biochemical**

-Laboratory tests/assessments to measure stores of particular nutrients, which can then be compared to standards.

-Include: blood tests, urine samples

- Can detect/ obtain info of malnutrition early before physical signs arise.

*Advantages:* detection of deficiency, early signs before symptoms, can confirm suspicions raised by other assessment tools

#### **Clinical**

-Physical examination of the body- provide clues for poor nutrition

-Uses a number of physical signs that are known to be associated with malnutrition and deficiency of vitamins and minerals – hair, eyes, skin, posture, tongue, finger nails.

*Advantages:* Easy, fast and cheap

*Disadvantages:* can't detect early cases therefore the patient has been suffering this deficiency for a while as physical signs are showing

#### **Dietary**

Includes: 24-hour recall, Food Frequency Questionnaire, Food Record, Diet History

- The method used will depend on the reason for assessment

*Advantages:* quick, cheap, can be used on literate or illiterate subjects

*Disadvantages:* Can rely on memory, subject bias, need trained professionals to complete most.

#### **24-hour recall**

Individuals are required to recall their exact food intake during the previous 24-hour period.

-Assesses actual (not estimation) intake over multiple days-generally 2-week days and a w/e day at least.

-Multiple-pass interviewing technique is used-nutritionists prompt

*Advantages:* Quick, inexpensive (if trained staff are available), used equally well with literate and illiterate subjects

*Disadvantages:* Relies on memory, subject bias, need trained interviewers to complete.

## Food Frequency Questionnaires

- List of foods-general and specific
- Measure the frequency with which food items/groups are consumed during a certain time period (eg. Past month, year)
- Individuals tick which foods they have consumed and how many times they have consumed them.
- Can be used to predict intakes of certain nutrients or non-nutrients

*Advantages:* Low burden on participants (only takes about 15-30 min to complete), results easy to process and collect

*Disadvantages:* List may not contain all foods that have been consumed, seasonality, special occasions, validity and feasibility not always clearly established, literacy and numeracy skills needed

## Diet History

Estimates the usual food intake and meal patterns over a long period of time (often a month)

- Originally had three parts-interview, questionnaire, record
- Combines patterns of intake with specific nutrient information

*Advantages:* Comprehensive info can be obtained about portion sizes and cooking method, employed in clinical practice

*Disadvantages:* Expensive, unsuitable for large populations, may be recall bias as it relies on memory, no standardized method for conducting interview.

## Food Record

Two types: -estimated food record -weighted food record

- Can range from 1-7 days (more days=more likely to represent usual intake but less likely someone is going to want to fill it in)

### Estimated Food Record

- Not reliant on memory
- Measure and write down everything that is consumed (food and beverages) as it is consumed using household measures (eg. Cup, ts, tbs)
- Brand names, method of preparation are included, mixed dishes are complex as all raw ingredients need to be separately recorded
- Week days vs w/e

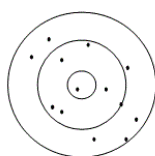
### Weighted Food Record

- Weigh and write down everything that is consumed (food and beverage) using scales
- Most precise method available for measuring usual food and nutrient intake in individuals
- Brand names, method of preparation are included, mixed dishes are complex as all raw ingredients need to be separately recorded
- Not reliant on memory
- Subjects must be motivated as it is quite burdensome

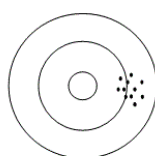
*Advantages:* Doesn't rely on memory, assess current diet as it is consumed, precision of portion sizes

*Disadvantages:* Underreporting, high burden on participants, require literacy and numeracy skills, habitual eating patterns may change due to recording.

### Validity and Reliability



Neither valid nor reliable



Reliable but not valid