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Subject Coordinator: Dr Regina Belski
Department of Dietetics and Human Nutrition
Last Lecture Review

- Energy is required by the body to function
- Energy used by the body is ultimately derived from the energy contained in macronutrients
  - Carbohydrate
  - Fat
  - Protein
  - Alcohol
- The energy value of food varies based on its composition
- Human energy needs are based on BMR, TEF, Physical activity and other factors
- A number of tools exist for the measurement of energy expenditure- direct and indirect calorimetry, non-calorimetric methods
- Mechanisms for regulating energy balance is complex
- Body composition will impact on BMR, hence it is important to know how to assess it
Units of Energy

1 kcal = 4.18 kJ

1 cal = 4.18 J
Individual Nutritional Assessment
Pros and cons of common nutritional screening tools and their effectiveness

Key questions to be covered:

What is a diet history? How is it taken? What are its advantages/limitations?

What is a 24-hour recall? How is it taken? What are its advantages/limitations?

What is a weighed vs estimated food record? How is it taken? What are its advantages/limitations?

What do we do with the information once we have it?

Analysing data- Ready Reckoners, Foodworks and other food analysis packages and tools

Methods of assessment of individuals vs groups
Nutritional Assessment Tools

Common tools include:

- Diet Histories
- 24-hour recalls
- Estimated food diaries/records
- Weighed food diaries/records
- Food Frequency Questionnaires (FFQ)
Diet History

• Started Burke 1974

• Attempts to estimate the usual food intake and meal pattern of individuals over a relatively long period of time (often a month)

• Interview method originally now also computer & paper versions available

• Traditionally 3 Parts
  1. Interview about usual eating habits eg. What do you usually have for breakfast?
  2. Cross check of frequency may include 24 hr recall
  3. 3-day estimated food record- NOW OFTEN OMMITTED
Diet History

Advantages

• Don’t limit the variability in responses
• Overcome many of the limitations of FFQ

Disadvantages

▪ Labour intensive (Interview up to 2hr ea)
▪ Can overestimate intake compared to weighted food record
Food Frequency Questionnaire

- FFQ aims to assess the frequency with which food groups are consumed during a specified time period
- Originally designed to look at food-consumption patterns
- Consists of list of foods with frequency of use response options
- Useful for groups not individuals
- Advantage- Obtains information on usual intake over a month or more, can self-complete, easy to standardise
- Disadvantage- Information is semi-quantitative
24-hour recall

- Nutritionist/Dietitian asks for client to recall exact food intake during the past 24 hours or previous day
- Advantage- quick, cheap, readily standardised
- Disadvantage- single recall does not provide information on ‘usual’ intake- this can be overcome by doing repeated 24-hour recalls over several days
Weighed food record

- Weigh all food and beverages consumed during a specified time period
- Description of food, cooking method, brand name recorded also
- If eating out, record descriptions of food
- Advantage: Most precise method of estimating food/nutrient intakes of individuals
- Disadvantage: Very time consuming, expensive if using supervision, high level of cooperation required, rates range from 35-75%
- May affect foods eaten at the time due to difficulty of measuring, so accurate representation of what was eaten but not of usual intake
Estimated food record/diary

• Record at time of consumption all food and drinks consumed in household measures for a specified period of time

• Description of food, cooking method, brand name recorded also

• Advantage- More people willing to take part as simpler 45-95%, less disruption of normal eating, so more accurate representation of usual intake

• Disadvantage- Loss of precision in quantifying intake- can be partly addressed by providing measuring cups/spoons, ‘measuring’ pages or educating on quantities prior to record keeping
Selecting a method

Do you want to know:

- Actual intake of individual
- Average usual intake of group or individual
- Proportion of population at risk
- Usual pattern of food use

The best tool to use will depend on the question you want answered
Methods of assessment of individuals vs groups

Individuals
- Weighed food record
- Estimated food record
- Diet history

Group (will discuss group nutritional assessment later this semester)
- FFQ
- 24-hr recall
Limitations

• Generally accepted that all methods of dietary intake assessment relying on self-reported intake tend to underestimate energy intake

• 24-hour recalls worse then food records
Getting the information you need

What do you want to know?

- What eaten/when eaten
- Macro & Micronutrient intakes
- Energy intake
- Specific things- eg. Saturated fat intake for CVD risk
Diet History

- Interviewer should not use leading questions and should use open ended questions instead
  - Leading Qs - Did you have a bowl of cereal for breakfast?
  - Better Qs - Did you have something to eat for breakfast?

- Focus on the information you need - ie. don’t focus on alcohol intake with a 12 year old

- Pick up on cues eg. don’t just keep going if someone starts crying
So what do we do with the information?

Analysis-
- Ready reckoner
- Foodworks
- Nuttab

You will be learning more and practising this in your tutorials-and this is a key part of your 1st Assessment task.
New developments

• Calorieking- www.calorieking.com.au
• Photography, tape recorders and automatic recording scales
• The i-phone age!!!
Summary

- Nutritional assessment is an important part of a nutritionists/dietitians role
- A number of tools exist to undertake nutritional assessment and all have strengths and limitations:
  - Diet Histories
  - 24-hour recalls
  - Estimated food diaries/records
  - Weighed food diaries/records
  - Food Frequency Questionnaires (FFQ)
- Your goal is to get the information you need so that you can then analyse it and come up with a clear picture of any nutritional gaps/problems
- Analysis tools include: ready reckoners and Foodworks and enable you to calculate intake of macro and micronutrients
Image Sources

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Thank you