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HLSC1200: Nutrition 1

Glossary:

AI (adequate intake)	The average daily nutrient level based on observed experimentally-determined approximations or estima intake by a group (or groups) of apparentl healthy peop assumed to be adequate. Used when RDI cannot be determine
Dietary history	Comprehensive data collection based g pattern an lifestyle changes as well as demographic nd relevant medical history.
Disease	A physical or mental distu g syn nction or tissue damage wher is a n e concept that refers t t's p rienc
EAR (estimated average requirement)	A daily nutrient leve mee uiremen individuals in a articu group.
EER (estimated energy requirement)	The av gy inta dicted to maintain energy ba adult der, age, weight, h t and sisten alth.
Epidemiolog	nd de ants of human
Food diary	liar days.
Food	U sts foods with questions fr rega mu e eat
	cess at all pe o safe, nutritious food that is ate fo d healthy life, and that is obtained in a cepta
Fo	to ac or consume and adequate quality or inse q ncertainly that one will be able to do so.
Genera claim	nce to serious disease or biomarker ○ s contains nutrient must have at least 10% RDI ○ It says good source must have at least 25% RDI
	ce to serious disease of biomarker, must be approved by Z (Food Standards Australian & New Zealand).
Hous nsum	Collection of all receipts for food purchases and hen compare with pantry supplies and number of people in the house.
cy	Measures how long on average a person is expected to live based on current age and sex-specific death rates
Nutrition	The science that explores the needs and effects of food constituents on organisms.

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Module 1: Human Nutrition

- What is nutrition?
  - Nutrition is the science that explores the needs and effects of
    constituents on organisms.
- History of nutrition:
  - Knowledge of food and nutrition dates back at least 200 yea
    however the study started in the 16th century.
  - 18th century: Magendie showed foods contain stances (P,
    CHO).
  - Nutrition science has developed within the la
  - Generally individual nutritional health has impr poor
    nutrition still account for a large bu heal
  - In 16th century England, foods w uits,
    fish, white meat, spices, sauce
  - In 1799 Australia, the ratio week
    - 1 kg salt pork
    - 1 kg rice
    - 1.2 litre pea
    - 1.1 kg flo

	Late	Curr iet	Australian recommendations
Protein		12	15-25
Carbohydra	4	46	45-50
Fat	1	3	20-25

- The food sup
  The pop un % les than 100 years ago.
  tivity lev n.
  crease i f foo in last 50 years.
  ion (20
  marke
  ts/ca 0
  0%
  C -15%
- Food
  - ption and type of foo consumed is different depending on cu kground.
    - ese eat a higher proportion of pork than the average ralian.
- nder:
  ural gender coding of foods:

Masculine foods	Feminine foods
• "tougher" foods such as hamburgers • spicy or savoury foods • red meat	• "dainty" foods • white foods • sweets • noodles, salads, pasta

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Module 4: Nutrients

➢ Food energy and energy expenditure

— *Name the units of energy*

- Joule: A joule is the amount of energy used to apply the force o
  over 1 metre.
  - 1J= 1 watt
  - 1000kJ = 1MJ
- Calorie: amount of heat used to raise 1 gram of ee Celsius.
  - 1kcal = 1cal
  - 4.2 Joules = 1 Cal
- Converting kj to cals, divide by 4.18.
- EE = BMR + work + thermogenic effect of food + energy for growth/tissue repair
  - *EE= energy expenditu sal m te

BMR (MJ/day)	Males	Females
18-30 yrs.	(0.063 x wt. x kg) + 2.896	(0.062 x wt. x kg) + 3.653
30-60 yrs.	(x kg)	4 x wt. x kg) + 3.538

- Determinations of
  - Body size: lar
  - Gender ales scle)
  - Body fat ha h
  - Hormona
  - Infection/illness
  - Fasting
  - Drugs/medications: aise
  - Activity level cti ses
    estimat uire
    EER = BMR x PAL l acti level).
    1.2 ((very active)

— *Identify foods sources of energy*

- of
  kJ
  29kJ
  apple (300kJ), M&M's 40g pkt (800kJ), junior burger 120kJ)
  den y:
  read (50% water), cheese (50% fat), oil (no water, high fat)
  upersize
  - Servings sizes have increased by 5-10% since 1900s.
  - Each 375mL of soft drink contains 10 tsp sugar.

— *Describe methods of measuring total body fat and its distribution*

- BMI (body mass index): wt (kg) ÷ Height² (metres)

➢ Vitamins

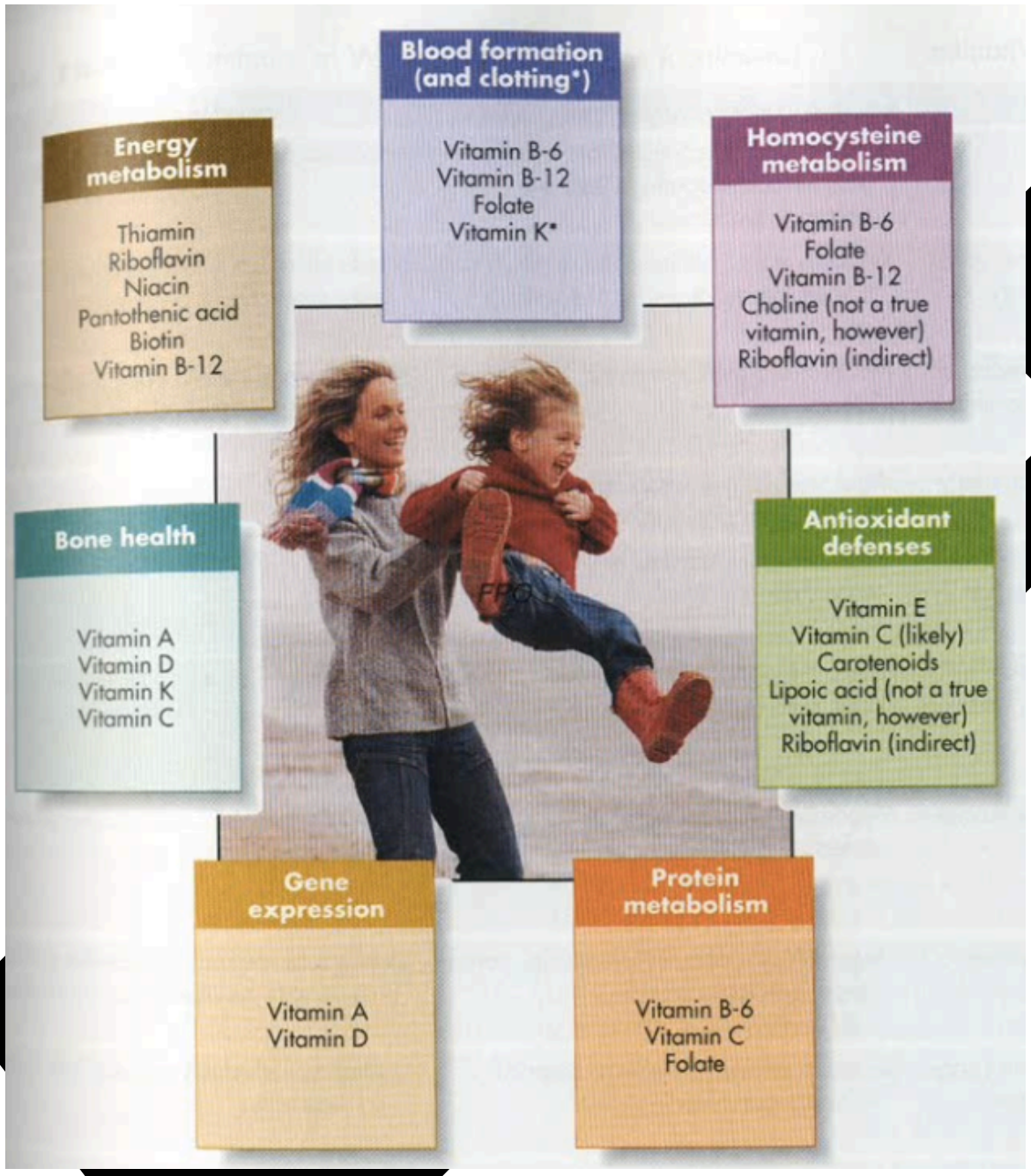
- Vitamins: a variable group of vitamins, which are responsible for many functions within the body.
    - Most cannot be produced within the body (except vit. A, D
- Classification: compound must meet criteria:
    1. Body is unable to make enough to maintain health
    2. Absence of compound from diet for a period of time produc deficiency symptoms that can be cured whe stance is resupplied.
- Types of vitamins:
    - Fat-soluble (not easily excreted) = A, D, E, K (ex
    - Water soluble (lost in body rapidly) B3, B folate, choline

— ***Understand the basic processes of digestion and absorption***

- Fat-soluble vitamins
    - Absorbed with dietary fat
    - Travel with diet through ells
    - Special carrie vitam
    - Stored in l ue
-

— ***Identify the role of the nutrient in the body***
— ***Identify major food sources***
— ***Interpret the recommended intake and issues associated with deficiency and excess***

Vitamin	Role	Food sources	Deficiency vs. Excess	RDI
A	• Assists vision in dim light, • maintenance of epithelial cells • normal bone formation • may reduce risk of breast, lung, colon, prostate & cervical cancer	• liver, • milk, • yellow/ orange vegetables and fruits	Deficiency • night blindness • keratinisation of epithelial surfaces • Poor dental health Excess (>3000µg) • Irritability, fatigue, • Gingivitis, • Anorexia, • Bone pain and fragility • Hair loss, brittle nails, dry fissured skin	men: 900µg women: 700µg
B1 (thia-min)	• Coenzyme releasing energy from CHO, PTN and fat	• Vegemite • Fortified breakfast cereals • Lean mean • Legumes • Wholemeal bread	Deficiency (beri-beri) • Oedema • GI: anorexia, indigestion, vomiting • CNS: impaired sensation, loss of reflexes, movement difficulty, partial paralysis • CVD: cardiac failure Excess (rare) • Numbness/tingling in arms,	Men: • 1.2mg Women: • 1.1mg



- Pr mins:
  - e veggies and fruits (moisture proof)
  - mming, cutting, peeling and reheating
  - D d fat unless consuming the fat (fat-soluble vitamins lost)
  - su ementation:
    - uch better to get natural dietary vitamins
    - upplements usually contain less than RDI if taken as directed
    - Vitamin deficiency is rare is western countries, though sub-optimal intake is common.

Module 5: Lifespan Nutrition

➢ Nutrition for infancy, childhood and adolescence

- **INFANT FEEDING**:
  - NHMRC new guidelines suggest transitioning to sol… 6 months.
  - Between 5-7 months in acceptable

- **Feeding development skills**

Age	Development, reflex and skills	Feeding stage
Neonate	Sucking efficiently	Breastfeeding/Bottle
Neonate to 4 months	Head lag	Not reading for solids/liquid only
Around 6 months	Extrusion reflux disappears Gag reflex- protective Can spit out No head lag when pulled to sit Early chewing	Ready for solids- puree Introduce sipper cup
9 months	Clearing spoon with lips Biting and chewing Tounge move food to teeth Rotary chewing Jaw stability Sit alone supported	Finger foods
12 months		Family foods Drink from cup with little assistance Bottle phased out
2 years	Walking and sitting independently and unsupported	Feeds independently
3 years		Uses fork and spoon

  - Sign… …dy …
    - …ld he…
    - Sits … …orted … …p or chair
    - Baby … … instead of just suck
    - …ws in… … mimics you eating.

…s with st… …arly	Risks when starting too late
…ing …s breast mi… …n …ssential nutrien… …d risk … …ood allerg… …T1D… …aby …ter… …ions, diarrhoea …ng	— Baby needs extra iron, zinc, protein and energy to grow = risk of growth faltering and deficiency — Decreased acceptance of tastes and textures — Need wheat <8months to prevent coeliac disease — Lack of muscles in mouth to help baby talk and develop chew.

  - How to start:
1. Choose time of day when you and baby are relaxed
2. Offer food 20 mins after breast/formula feed
3. Use plastic spoon with smooth edges
4. Sit baby securely in high chair

Module 6: Food and Disease

➢ Contemporary issues

— *Define key concepts in epidemiology*

- Disease: a physical or mental disturbance involving syn… dysfunction or tissue damage where illness (or sickness) i… subjective concept that refers to the patient's …rson experie… the disease.
  - Infectious diseases: caused by pa… …pread by person-to person contact, through a… …l and inanimate objects and insect…
  - Chronic diseases: long-t… …caus… …le factors in a person's … …nd e… that cannot be dire… …ad … …rson…
- Epidemiology: the stud… …e, dis… …and determinants of human …
  - Rate: **number affected ÷ total number in population**
  - Inciden… …er of n… …opulation during a set p… …how many people are getting it?)
  - Prev… …f cases … …n at a given time = **incidence × duration** (how many people have it?)
    - …rbidi… …ess (proportion of people who have it)
    - …fr… …proportion of people who die from it?
- Li… …e a person is expe… …as… …t age… …x-specific death rates.
  - …01… …yrs) …nd females (84.3yrs)
  - Bor… …0: m… …yrs) and females (58.8yrs)
  - ATSI l… …cy fo… …-2012, 10.6yr lower (males) …d 9.5 y… …males).

Identify modifiable and non-modifiable risk factors

…odi… …rs:
- …ng
- …sky … …ol consumption
- …ysical inactivity
- …diet
- …ess weight
- …igh blood pressure
- High cholesterol level

…on-modifiable risk factors:
- Heredity
- Age
- Gender
- Family history
- Ethnic background/Indigenous status