

Appendix 1: Life Cycle Nutrition Concept Inventory: A validated life cycle nutrition concept inventory in a multiple-choice format.

1. Which nutrient/s provides humans with a source of energy?

- a. Macronutrients
- b. Macronutrients and some micronutrients
- c. Water and vitamins
- d. Electrolytes

2. A diet that is folate deficient could affect a pregnancy in which way?

- a. There would be no effect because a physiological adaptation occurs in which females store folate more efficiently while pregnant
- b. There has been correlation to folate deficient diet while in the womb and developing obesity in early life
- c. It could increase the risk for abnormal nervous system development of the fetus
- d. A negative effect on the fetus would occur in late pregnancy (3rd trimester) versus early pregnancy (1st trimester)

3. Malnutrition during the preconception period provides a risk for decreased fertility potential. Which of the following is true in regard to this concept?

- a. Adipose tissue is an endocrine tissue that will produce hormones that interfere with normal reproductive hormones
- b. Increased subcutaneous adipose tissue from overnutrition surrounds reproductive organs blocking estrogen release. Severe malnutrition typically shortens the length of the menstruation cycle
- d. Only male fertility potential has been shown to be affected by malnutrition

4. Which individual requires the most Calories per grams of body weight and why?

- a. A healthy 80-year old male to support natural muscle mass loss
- b. A healthy 15-year old female to support body fat accumulation
- c. A healthy 50-year old male to support cellular maintenance
- d. A healthy 2-year old male to support tissue development

5. If not given proper supplementation, a breastfed infant may be at higher risk for skeletal deformities than a formula fed infant because:

- a. Calcium is found in very high amounts in breast milk leading to elongated bones
- b. Vitamin K is found in minimal levels in breast milk leading to thickened bones
- c. Vitamin D is transferred inefficiently to breast milk leading to bone softening
- d. Estrogen levels are lower in breast milk leading to improper bone turnover

6. A female or male toddler is considered to be obese if their BMI is:

- a. Calculated to be 15 kg/m² or higher
- b. At the 95th percentile or higher on the growth curve
- c. Between the 85th and 95th percentile on the growth curve
- d. Calculated to be 12 kg/m² or higher

7. Which statement best describes an individual's eating behavior as they enter childhood?

- a. Children continue only to be highly influenced by physiological satiety signals
- b. External factors, like social cues, start to influence a child's food intake
- c. Children eat exactly what is presented to them due to more rapid periods of growth (as compared to infant/toddler life-stage)
- d. Food security is never an issue in childhood because children receive appropriate nutrition from schools

8. In adolescence, what factor leads to diverging daily requirements of iron among males and females?

- a. Menarche onset during puberty increases the requirements for females
- b. Support for higher bone mass accumulation (compared to females) during puberty increases the requirements for males
- c. Support for higher fat mass accumulation (compared to males) increases the requirements for females
- d. Requirements for males decrease due to increased iron storage capacity within their increased muscle mass

9. Similar to infancy, older populations are at risk for food safety. Why is this true?

- a. Sugar-based foods that are more stable (longer shelf-lives) are not palatable in these life-stages
- b. Individuals of both life-stages rely only on what others feed them, increasing risk of unsafe food exposure
- c. Older populations are actually at a higher risk, since infants only drink breast milk or formula
- d. Immune systems in both life-stages are not working to their full capacities

10. Which statement best describes the focus of the Dietary Recommendation Intakes (DRI) for female and male adults in the United States focus:

- a. The prevention of chronic disease like heart disease or cancer
- b. The prevention of infectious disease like polio or tuberculosis
- c. The average amount of micronutrients needed on a weekly basis
- d. The prevention of malnutrition for overweight individuals

11. Adequate Vitamin D status is important in adulthood because:

- a. High intake will contribute to increased adiposity because it's a fat-soluble vitamin
- b. It is not absorbed well in the small intestine; it adds bulk to fecal matter helping with excretion
- c. Gradual bone loss starts occurring and adequate intake helps calcium absorption to slow bone mass loss
- d. High intake will vasoconstrict blood vessels leading to high blood pressure

12. In young adulthood, there is a period of rapid weight gain in a short period of time. This can be attributed to:

- a. Fewer meals eaten in a social setting during this life-stage, leading to longer time to eat meals, thus increased intake of food at one sitting
- b. College and non-college students expose themselves to food of lower dietary quality at this Life -stage
- c. Individuals enrolled in college are exposed to alcohol and low dietary quality dorm food
- d. Puberty is at its peak, leading to increased appetites to support body growth