

## SUBJECT NAME: Human Nutrition and Metabolism

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### SUBJECT DESCRIPTION

The subject material covers the principles of human nutrition and metabolism, providing an understanding of factors affecting food selection and the role of nutrition in maintaining good health. The subject provides the ability to critically evaluate nutrition research and nutrition claims to differentiate between reliable and unreliable information about food and nutrition. The subject covers the application of nutrition in health, fitness, sport and work environments.

### CONTENT COVERED

- Dietary Recommendations and food policy
- Canada's food guide, food labeling and how food marketing affects consumer choices
- Nutrient absorption and metabolism in health and disease
- Macronutrients, including carbohydrates, lipids, protein and water
- Micronutrients, including vitamins, minerals
- Energy balance, including quantitative dietary analysis for weight management
- Nutrition and physical activity
- The role of the integumentary system in vitamin production and maintaining fluid balance.
- The role of nutrient supplementation in health and performance
- Nutrients as drugs

### KEY PERFORMANCE INDICATORS (KPIs)

1. Understands the various methods used to study nutrition, including their strengths and limitations.
2. Critically evaluates nutrition sources and marketing for credibility.
3. Conducts a quantitative dietary assessment of caloric and nutrient intake and compares the outcome to current nutritional recommendations.
4. Understands Canadian health policy with respect to nutrition, including the food guide and labelling requirements.
5. Describes the process and structures involved in digestion and absorption.
6. Outlines the stages of cellular respiration and differentiates between the metabolic breakdown of sugars, amino acids and fatty acids
7. Describes the structure and function of carbohydrates, fats, proteins, vitamins, minerals and water
8. Describes how nutrition plays a role in various conditions, including diabetes, hypertension, cardiovascular disease, cancer, gastroesophageal reflux, diverticulosis, diarrhea, and constipation.
9. Describes conditions related to macro and micronutrient deficiencies and excesses.
10. Describes the nutrition-related causes of energy imbalance and outlines approaches for achieving healthy energy balance.
11. Outlines how and when the various nutrients are used to fuel physical activity.
12. Apply knowledge of nutrient intake on wellness, health promotion, injury and disease in practice.
13. Considers and explains nutritional requirements (RDI) and their role in maintaining function of the human body in performance and work environments.
14. Considers the pharmacological (drug like) effects nutrients may have on physiological function and human performance. (examples: caffeine, high quantities of vitamins A, D, E, Folate (B9), K).
15. Considers the effects of nutrient deficiencies in human growth and development, including deficiencies in vitamin A, C, D and B12).

16. Understands and recognizes how body systems respond and functions with the introduction of stimuli (e.g., caffeine, drugs, medication).
17. Considers and explains how nutrition, supplements, and hydration influence human movement, performance and wellness.