

# GENERAL AND DENTAL NUTRITION

**Lamar Institute of  
Technology**

**DHYG 1307**

**Course Syllabus  
Summer II**

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## LECTURE SCHEDULE

July		
Week 1	Introduction to course	Chapter 1
	Overview of Healthy Eating Habits	Chapter 2 (assigned)
	The Alimentary Canal	
	Carbohydrate: The Efficient Fuel	Chapter 3
	Nutritional Aspects of Dental Caries	Chapter 17
	<b>Test 1</b>	<b>Chapters 1,2,3,17</b>
	Protein: The Cellular Foundation	Chapter 4
	Continued - Protein: The Cellular Foundation	Chapter 4
Week 2	Lipids: The Condensed Energy	Chapter 5
	Continued	Chapter 5
	Use of the Energy Nutrients: Metabolism and Balance	Chapter 6
	Vitamins Required for Calcified Structures: A, D, E, K	Chapter 7
	Continued - Vitamins Required for Calcified Structures: A, D, E, K	Chapter 7
	<b>Test 2</b>	<b>Chapters 4,5,6,7</b>
	Nutritional Assessment and Counseling for Dental Hygiene Patients	Chapter 20
	Vitamins Required for Calcified Structures: C & Vitamins Required for Oral Soft Tissues and Salivary Glands	Chapters 7 & 10
Week 3	Continued	Chapters 7 & 10
	Minerals Essential for Calcified Structures & Nutrients Present in Calcified Structures	Chapters 8 & 9
	Continued - Minerals Essential for Calcified Structures & Minerals Essential for Calcified Structures	Chapters 8 & 9
	Water and Minerals Required for Oral Soft Tissues and Salivary Glands	<b>DUE: Personal Food Diary Assessment</b>
		Chapters 8 & 9
	Test 3	Chapter 11
		<b>Chapters 7,8,9,10,11</b>

<b>July</b>		
Week 3	Nutritional Requirements Affecting Oral Health in Women	Chapter 12 (assigned)
	Nutritional Requirements During Growth & Development	Chapters 13 & 14
	Nutritional Requirements for Older Adults	Chapter 15
	Other Considerations Affecting Nutrient Intake	
	Effects of Systemic Disease on Nutritional Status	Chapter 16
	Nutritional Aspects of Gingivitis and Periodontal Disease	Chapters 18 & 19
	Nutritional Aspects of Alterations in the Oral Cavity	
<b>August</b>		
Week 4	Nutritional Counseling Session	TIMES TO BE ANNOUNCED
	<b>Test 4</b>	<b>Chapters 12,13,14,15,16,18,19</b>

# General and Dental Nutrition

## COURSE DESCRIPTIONCOURSE DESCRIPTION

A study of general nutrition and nutritional biochemistry with an emphasis placed on the effects of nutrition and dental health. The application of diet analysis consultation skills in influencing patient behavior change relative to diet and dental disease.

## PREREQUISITE

DHYG 1401, 1431, 1304, 1235, 1103, 1319, 2301, 2133, & 1260.

## COURSE GOALS

The student will;

1. Demonstrate knowledge of basic concepts in nutritional biochemistry. (F1.5, F4.4, F5.5, F6.4, F7.5, F8.4, F9.4, F10.4, F11.4, F12.4, C5.5, C6.4, C7.5, C8.4)\*
2. Understand the concept of RDA's, nutrient density, food pyramid and food labeling. (F1.5, F5.4, F7.4, F8.4, F11.4, F12.4, F16.3, C5.3, C6.3, C7.3C8.8)\*
3. Demonstrate competency in utilizing a table of the nutrient value of common foods. (F1.5, F4.3, F5.4, F7.4, F8.4, F11.4, F12.4, F16.3, C5.3, C6.3, C7.3)\*
4. Identify and explain the six classes of nutrients. (F1.5, F5.4, F7.4, F8.4, F11.4, F12.4, F16.3, C5.3, C6.3, C7.3)\*
5. Demonstrate the digestion, transport and absorption of nutrients in the human. (F1.5, F5.4, F7.4, F8.4, F11.4, F12.4, F16.3, C5.3, C6.3, C7.3)\*
6. Recognize the nutritional variations during the life cycle and state their importance in the prevention of disease. (F1.5, F5.4, F7.4, F8.4, F11.4, F12.4, F16.3, C5.3, C6.3, C7.3)\*
7. Apply dental nutrition concepts through the preparation and presentation of a nutrition counseling session for the management of diet related dental problems. . (F1.5, F5.4, F7.4, F8.4, F11.4, F12.4, F16.3, C5.3, C6.3, C7.3C8.8)\*

## SCANS SKILLS AND COMPETENCIES

\*Beginning in the late 1980's, the U.S. Department of Labor Secretary's Commission on Achieving Necessary Skills (SCANS) conducted extensive research and interviews with business owners, union leaders, supervisors, and laborers in a wide variety of work settings to determine what knowledge workers needed in order to perform well on a job. In 1991 the Commission announced its findings in *What Work Requires in Schools*. In its research, the Commission determined that "workplace know-how" consists of two elements: foundation skills and workplace competencies. The three-part foundation skills and five-part workplace competencies are further defined in the student handbook.

**CREDIT HOURS:** 3 semester hours

**CLASSROOM:** 113 MPC

**CLASS MEETING TIME:** 10:00 – 11:50 MTWRF

## **INSTRUCTOR**

Kathy Colston RDH, BSDH  
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## **COURSE POLICIES**

### **1. Attendance Policy**

#### **Absenteeism**

In order to ensure the students in the dental hygiene program achieve the necessary didactic and clinical competencies outlined in the curriculum, it is necessary that the student complete all assigned lecture classes, clinical and laboratory hours.

If you are unable to attend lecture class, clinic or lab, it is **mandatory that you call the appropriate instructor prior to the scheduled class, clinic or lab time**. The student is responsible for all material missed at the time of absence. Extenuating circumstances will be taken into account. Extenuating circumstances might include: funeral of immediate family member, maternity, hospitalization, etc.

It is expected that students will appear to take their exams at the regularly scheduled examination time. Make-up examinations will be given **only** if the absence is due to illness (confirmed by a physicians' excuse), a death in the immediate family, or at the discretion of the instructor.

#### **Fall/Spring Semesters:**

Dental hygiene students will be allowed **two** absences in any lecture, clinic or lab. Absences must be accompanied by a written excuse on the next class day. In the event that a student misses class, clinic or lab beyond the allowed absences, the following policy will be enforced:

2 absences = verbal warning

3 absences = written warning with the Disciplinary Action Form (DAF)

4 absences = grade will be lowered one full letter grade

#### **Summer or 8 week Sessions:**

Dental hygiene students will be allowed **one** absence in any lecture, clinic or lab. Absences must be accompanied by a written excuse on the next class day. In the event that a student misses class, clinic or lab beyond the allowed absences, the following policy will be enforced:

1 absence = verbal warning

2 absences = written warning with the Disciplinary Action Form (DAF)

3 absences = grade will be lowered one full letter grade

#### **Tardiness**

Tardiness is disruptive to the instructor and the students in the classroom. It is expected that students will arrive on time for class, clinic or lab, and remain until dismissed by the instructor. If tardiness becomes an issue, the following policy will be enforced:

Tardy 1 time = verbal warning

Tardy 2 times is considered an absence.

**2. Examination Policy.** Students are expected to complete examinations as scheduled. Make-up examinations will be given only if the absence is due to illness (confirmed by a physician's excuse), a death in the immediate family or at the discretion of the instructor. All make-up examinations must be taken within one week following the original exam date. All examinations must be returned to the instructor to be kept on file. Students may have access to the examinations by appointment during the instructor's office hours. Exams may be reviewed up to two weeks following the exam date.

**3. Late Work.** Assignments will not be accepted if turned in late. Please refer to the student handbook for a comprehensive listing of the program policies. Faculty has the authority to modify the above policies if unusual circumstances mandate a change.

**4. Electronic equipment/cell phones.** Cell phones should be turned off during class time. No texting from cell phones or computers will be allowed during the posted hours for class.

**5. Leaving Class during Lecture** You should be prepared to remain in class for the entire class period. Any personal business should be taken care of prior to or after class. If a medical problem exists or an emergency occurs please inform the instructor.

## DISABILITIES STATEMENT

The Americans with Disabilities Act of 1992 and Section 504 of the Rehabilitation Act of 1973 are federal anti-discrimination statutes that provide comprehensive civil rights for persons with disabilities. Among other things, these statutes require that all students with documented disabilities be guaranteed a learning environment that provides for reasonable accommodations for their disabilities.

If you believe you have a disability requiring an accommodation, please contact the Special Populations Coordinator at 409-880-1737 or visit the office located in the Cecil Beeson Building, room 116B.

## TEACHING METHODS

Lecture, class discussion, extensive audiovisual, reading assignments, counseling sessions.

## REQUIRED TEXTSREQUIRED TEXTS

Davis, Judi, C.A. Stegeman. (Latest edition). The Dental Hygienist's Guide to Nutritional Care. W.B. Saunders: Philadelphia. ISBN 978-1-4160-6398-8

## REFERENCE MATERIALS

Katz, D.L. (2001) Nutrition in Clinical Practice, Lippincott: Philadelphia

Palmer, G.A. (2003) Diet and Nutrition in Oral Health, Prentice Hall: Upper Saddle River.

<http://www.choosemyplate.gov/>

Smith, A.M. & Wardlaw, G.M. (2011) Contemporary Nutrition, 8<sup>th</sup> edition, McGraw-Hill: New

Whitney, E.N., Cataldo, C.B., Rolfes, S.R. (2002) Understanding Normal and Clinical Nutrition, Wadsworth: Belmont.

## INSTRUCTIONAL AIDS

Nutrition, Diet and Dental Health: Methods. ADHA self-study course on nutrition and relationship to caries and periodontal disease.

MyPyramid.gov/

## COURSE REQUIREMENTS

1. **Nutritional Counseling Project.** The purpose of the counseling project is to afford the dental hygiene student the opportunity to apply the learned nutritional principles in a practical setting.
  - A. **Patients.** Each student will identify a caries susceptible patient for nutritional counseling based on specific needs. In the event that a child is selected, the parent must be willing to participate with the child in the counseling efforts. Previous clinic patients are preferred. Relatives may NOT be used as the subject of the nutritional counseling session.
  - B. **Documentation.** Each student must complete all clinical forms (pg. 26-30) and counsel the patient using criteria identified in the Nutritional Counseling Performance Exam and guidelines found on page 25 of this syllabus. The student will make an appointment with the instructor and the patient for a one-to-one counseling session. Forms obtained from MyPyramid.gov will also be utilized during the session as visual aids for the patient. All completed clinical forms will be turned in at the time of the counseling session. This session will be evaluated by the criteria found on pages 31-32 of this syllabus.
  - C. **Written Report.** The student will summarize each counseling appointment according to the instructions on page 25. Written reports will be due the day after the counseling session.
2. **Computer Usage.** Students must be familiar with current computer programs utilized in contemporary dental office settings. Therefore, students must utilize the on-line site of MyPyramid.gov to complete the diet analysis. This site may be accessed on any computer with internet capabilities.

## EVALUATION CRITERIA

Student must earn a grade of "C" or better to progress in the curriculum.

Exams (4)	60%
Personal Food Diary Project	20%
Nutritional Counseling	20%

Computer Usage is not optional
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### Grade Scale

A	90 - 100
B	80 - 89
C	70 - 79
D	60 - 69
F	Below 69





## CONTENT OUTLINE

### Overview of Healthy Eating Habits

60 minutes

- a. Nutrients
  - 1. essential nutrients
  - 2. function
  - 3. energy value (Kcalorie)
- b. Energy Needs of the Body
  - 1. basal metabolism
  - 2. basal metabolic rate
  - 3. energy expenditure factors
- c. Food Choice Guidance
- d. Dietary Standards
- e. Food Labeling
  - 1. Daily Reference Values
  - 2. Reference Daily Intakes

### Carbohydrates

100 minutes

- a. Introduction
- b. Chemistry and Classification
  - 1. Monosaccharides
    - a. glucose
    - b. fructose
    - c. galactose
  - 2. Disaccharides
    - a. sucrose
    - b. lactose
    - c. maltose
  - 3. Polysaccharides
    - a. starch
    - b. glycogen
    - c. dietary fiber
      - 1. soluble
      - 2. insoluble
      - 3. Relationship between dietary fiber and health
- c. Physiologic Role
- d. Requirements
- e. Sources
- f. Hyper and Hypo States
  - 1. Carbohydrate excess
  - 2. Carbohydrate deficiency
  - 3. Dental caries
  - 4. Obesity
- g. Sugar Substitutes
  - 1. sugar alcohols
  - 2. flavinoid sweeteners
  - 3. saccharin
  - 4. aspartame
  - 5. acesulfame K
  - 6. cyclamates
  - 7. xyitol
  - 8. stevia plant

**Protein**

**100 minutes**

- a. Structure
- b. Classification
  - 1. Essential
  - 2. Nonessential
  - 3. Conditionally essential
- c. Measures of Protein Quality
  - 1. Complete and incomplete
  - 2. Biologic Value
  - 3. Nitrogen Balance
- d. Physiologic Roles
- e. Requirements
- f. Digestion and Metabolism
- g. Sources
  - 1. Bioavailability
- h. Under-consumption and Health-Related Problems
  - 1. Marasmus
  - 2. Kwashikor
- i. Over-consumption and Health-Related Problems

**Lipids**

**60 minutes**

- a. Overview
- b. Functions
- c. Types and Chemical Structure
  - 1. triglycerides
  - 2. other dietary lipids
    - a. phospholipids
    - b. sterols
    - c. essential fatty acids
    - d. other
- d. Digestion and absorption
- e. Metabolism and storage
- f. Current Patterns of Consumption
- g. Dietary Requirements
- h. Sources
- i. Role in health
  - 1. Obesity
  - 2. Fats and coronary Heart Disease
  - 3. Cancer
  - 4. Hyperlipidemia
- j. Fats and Oral Health
  - 1. Dental caries
  - 2. Parotid enlargement

**Use of Energy Nutrients: Metabolism and Balance**

**30 minutes**

- a. Metabolism
  - 1. Catabolism
  - 2. Anabolism
- b. Krebs Cycle
- c. Carbohydrate Metabolism
- d. Protein Metabolism
- e. Lipid Metabolism
- f. Alcohol Metabolism
- g. Metabolic Interrelationships

- h. Metabolic energy
- i. Basal Metabolic Rate (BMR)
  - 1. Factors affecting BMR
- j. Total Energy Requirements
  - 1. Basal energy expenditure (BEE)
    - a. Factors affecting BEE
- k. Energy Balance
  - 1. Factors affecting energy balance

**Vitamins Required for Calcified Structures (A,D,E,K)**

**110 minutes**

- a. Vitamin A
  - 1. Chemistry
  - 2. Absorption, transport, and storage
  - 3. Functions
    - a. Visual purple
    - b. Relationship between vitamin A deficiency and cancer
    - c. Maintenance of epithelial cells and tissues
    - d. Promotion of bone remodeling
    - e. Activation of cell membranes
  - 4. Function in oral structures
    - a. Periodontium
    - b. Teeth
    - c. Salivary glands
    - d. Oral mucous membranes
    - e. Cleft lip and palate
  - 5. RDA
  - 6. Sources
  - 7. Therapy
  - 8. Toxicity
- b. Vitamin D
  - 1. Chemistry
  - 2. Absorption, transport, and storage
  - 3. Metabolism
  - 4. Function
  - 5. RDA
  - 6. Sources
  - 7. Therapy
  - 8. Deficiency
- c. Vitamin E
  - 1. Chemistry
  - 2. Absorption and metabolism
  - 3. Function
  - 4. Therapy
  - 5. RDA
  - 6. Sources
  - 7. Myths and facts
  - 8. Toxicity
- d. Vitamin K
  - 1. Chemistry
  - 2. Absorption
  - 3. Function
  - 4. Deficiency
  - 5. Vitamin K and Periodontal disease
  - 6. Therapy
  - 7. RDA

8. Sources

**Vitamins Required for Calcified Structures (C) & Vitamins Required for Oral Soft Tissues and Salivary Glands**  
**140 minutes**

- a. Vitamin C
  - 1. Chemistry
  - 2. Absorption, transport, and storage
  - 3. Metabolism
  - 4. Function
  - 5. RDA
  - 6. Sources
  - 7. Therapy
  - 8. Deficiency
- b. The B Vitamins
  - 1. Function
  - 2. Sources
  - 3. Requirements
  - 4. Deficiency
  - 5. Toxicity
  - 6. Effect on general and oral health
- c. Folic Acid
  - 1. Function
  - 2. Sources
  - 3. Requirements
  - 4. Deficiency
  - 5. Toxicity
  - 6. Effect on general and oral health
- d. Vitamin B<sub>12</sub> (Cobalamin)
  - 1. Function
  - 2. Sources
  - 3. Requirements
  - 4. Deficiency
  - 5. Toxicity
  - 6. Effect on general and oral health
- e. Vitamin B<sub>6</sub> (Pyridoxine)
  - 1. Function
  - 2. Sources
  - 3. Requirements
  - 4. Deficiency
  - 5. Toxicity
  - 6. Effect on general and oral health
- f.
  - 1. Function
  - 2. Sources
  - 3. Requirements
  - 4. Deficiency
  - 5. Toxicity
  - 6. Effect on general and oral health
- g. Riboflavin
  - 1. Function
  - 2. Sources
  - 3. Requirements
  - 4. Deficiency
  - 5. Toxicity
  - 6. Effect on general and oral health

- h. Niacin
  - 1. Function
  - 2. Sources
  - 3. Requirements
  - 4. Deficiency
  - 5. Toxicity
  - 6. Effect on general and oral health
- i. Pantothenic Acid
  - 1. Function
  - 2. Sources
  - 3. Requirements
  - 4. Deficiency
  - 5. Toxicity
  - 6. Effect on general and oral health
- j. Biotin
  - 1. Function
  - 2. Sources
  - 3. Requirements
  - 4. Deficiency
  - 5. Toxicity
  - 6. Effect on general and oral health
- k. Vitamin-like Substance and Other Claimed Nutrients

**Minerals Essential for Calcified Structures & Nutrients Present in Calcified Structures** **120 minutes**

- a. Macrominerals
  - 1. Distribution
  - 2. Function
  - 3. Absorptions
  - 4. Storage
  - 5. Excretion
  - 6. Fluid & electrolyte balance
  - 7. Acid-base balance
  - 8. Dietary sources
  - 9. RDA
  - 10. Deficiency
  - 11. Toxicity
  - 12. Hypertension
  - 13. Effect on general and oral health
- b. Trace Minerals
  - 1. Activators of enzyme systems
  - 2. Function
  - 3. RDA
  - 4. Dietary sources
  - 5. Deficiency
  - 6. Toxicity
  - 7. Effect on general and oral health

**Water and Minerals Required for Oral Soft Tissues and Salivary Glands** **60 minutes**

- a. Distribution
  - 1. Factors which affect distribution
- b. Functions
- c. Sources

- d. Requirements
- e. Regulation
  - 1. Disturbances in water balance
- f. Sodium
  - 1. Function
  - 2. Daily requirements
  - 3. Sources
  - 4. Deficiency
  - 5. Dietary restriction
- g. Acid-base balance
- h. Hypertension

**Nutritional Requirements Affecting Oral Health in Women, During Growth & Development, in Older Adults** **60 minutes**

- a. Terms
- b. Growth
- c. Newborns
  - 1. Requirements
  - 2. Feeding Practices
  - 3. Oral Problems in infants
- d. Toddler & Preschool Children
  - 1. Toddlers
  - 2. Preschool Children
  - 3. Oral Problems of Toddlers and Preschool Children
- e. Adolescents
  - 1. Requirements
  - 2. Influential Factors on Eating Habits
  - 3. Counseling
- f. Maturity in the Life Cycle
  - 1. Physiologic Factors Influencing Nutritional Needs and Status
  - 2. Physiologic Changes in the Oral Cavity
  - 3. Socioeconomic and Psychological Factors
  - 4. Other Factors
  - 5. Nutrient Requirements

**Other Considerations Affecting Nutrient Intake** **30 minutes**

- a. Food patterns
- b. Cultural Influences
- c. Working with patients of different cultures
- d. Factors affecting nutrient intake
  - 1. Budget
  - 2. Food preparation
  - 3. Food fads and misinformation

**Effects of Systemic Disease on Nutritional Status** **100 minutes**

- a. Effects of chronic disease
- b. Mental health problems
  - 1. anorexia
  - 2. bulimia
    - a. Symptoms
    - b. Medical complications
    - c. Oral manifestations
    - d. Nutritional requirements
- c. Gustatory and olfactory functions
- d. Xerostomia

- e. The anemias
  - 1. Iron deficient anemia
  - 2. Plummer-Vinson Syndrome
  - 3. Megablastic anemia
  - 4. Folic acid deficiency
  - 5. Thalassemia
  - 6. Aplastic anemia
- h. Gastrointestinal Problems
- i. Cardiovascular Conditions
- j. Cerebrovascular Accidents
- k. Skeletal System
- l. Metabolic Problems
- m. Neuromuscular Problems
- n. Neoplasia
- o. AIDS

**Nutritional Aspects of Periodontal Disease**

**50 minutes**

- a. Physical effects of food on periodontal health
- b. Nutrient composition
- c. Food consistency
- d. Nutritional considerations for periodontal patients
- e. NUG
- f. Gingivitis
- g. Periodontitis
- h. Nutritional management
- i. Dietary recommendations
- j. Periodontal surgery
- k. Post operative care

**Nutritional Aspects of Alterations in the Oral Cavity**

**50 minutes**

- a. Conditions that interfere with food intake
- b. Xerostomia
- c. Root caries
- d. Dentition status
- e. Alveolar osteoporosis
- f. Glossitis

**Nutritional Assessment and Counseling for Dental Hygiene Patients 50 minutes**

- a. Diet counseling
- b. Evaluation of the Patient
- c. Assessment of Nutritional Status
- d. Formation of Nutrition Treatment Plan
- e. Facilitative Communication Skills
- f. General Principles for Caries Prevention
- g. Food Diaries
- h. Evaluation of Food Diaries



## **Learner ObjectivesObjectives**

### **Overview of Healthy Eating Habits**

1. Define the terms: nutrition, nutrients, metabolism, essential and non-essential nutrients.
2. Explain the energy value, kcal, of food.
3. List the general physiologic functions of the six nutrient classifications of foods.
4. Identify factors that influence food habits
5. Name the food groups in the Food Guide Pyramid.
6. State the number of servings needed from each of the food groups in the Food Guide Pyramid.
7. Identify significant nutrient contributions of each food group.
8. State the Dietary Guidelines for Americans and their purpose.
9. Identify dietary selections in each food group that significantly affect intake of calories, fats, salt, and sugar.
10. Assess dietary intake of a patient, using the Dietary Guidelines for Americans and the Food Guide Pyramid.
11. Diagram and explain a food label. Explain the requirements of both ingredient labeling and nutritional labeling.
12. Explain the term, Daily Value (DV), Daily Reference Value (DRV), and Reference Daily Intake (RDI). Compare the DV, DRV, and RDI to the RDA.

### **CARBOHYDRATE: THE EFFICIENT FUEL**

1. Define carbohydrates and the three most common classifications of carbohydrates.
2. Explain the chemical formula and classification of carbohydrates.
3. Differentiate among monosaccharides, disaccharides, and polysaccharides.
4. Describe the health benefits of fiber, including difference effects of soluble versus insoluble fiber.
5. Identify and describe the physiologic role of carbohydrates.
6. Identify sources of carbohydrates.
7. Discuss the complications that result from carbohydrate excess and deficiency.
8. Discuss the metabolism of carbohydrates. Include alterations in metabolism as a result of deficiency or excesses within the diet.
9. Discuss the lack of a dietary allowance for carbohydrates and the general guidelines for ingestion.
10. Discuss the sugar substitutes and their assets, limitations and applications.
11. Describe the relationship between carbohydrates and lactose intolerance.
12. Describe the patterns of usage of sugar in recent history.

### **PROTEIN: THE CELLULAR FOUNDATION**

1. Describe the structure of an amino acid and the variations that exist.
2. Compare and contrast the terms essential and nonessential amino acids.
3. List the 9 essential amino acids and the 11 nonessential amino acids.
4. Discuss the measures of protein quality.
5. Explain the physiologic roles of protein.
6. Discuss the metabolism of protein. Include alterations in metabolism as a result of deficiency or excesses within the diet.
7. Identify the protein requirements for adults. Given a body weight, calculate the protein requirement.
8. Identify the factors which may impact the protein requirement for an individual.
9. Identify protein sources within the basic food groups. Discuss the bioavailability of animal and plant sources of protein.
10. Identify protein sources for individuals with various dietary restrictions.
11. State the problems associated with protein deficiency and excess.
12. Describe the PEM diseases of Kwashiorkor and Marasmus. Identify symptoms typical of the disease.
13. Outline the dental problems associated with protein deficiency.

### **LIPIDS: THE CONDENSED ENERGY**

1. Explain the justification for the descriptive term "condensed energy" when referring to lipids.
2. Identify the basic structural unit of dietary lipids.
3. Diagram the structure of a triglyceride molecule.
4. Discuss the characteristics of a triglyceride lipid. Explain the effect of structure in solution.
5. Explain the term saturated, unsaturated, and polyunsaturated lipids. List sources of each and the impact on health.
6. Explain the terms trans and cis as related to the overall appearance of the fatty acid chain. Identify the impact of the configuration on health.
7. What impact do Omega - 3 fatty acids have on the health of the individual when compared to Omega - 6 fatty acids?
8. Describe the appearance of true fats at room temperature. Identify factors that affect the consistency of fats.
9. List two compound lipid structures and their role in human physiology.
10. Discuss the lipoprotein, cholesterol. Identify the function, types, and physiology of cholesterol formation.
11. Identify and explain the physiologic role of lipids.
12. Discuss the metabolism of carbohydrates. Include alterations in metabolism as a result of deficiency or excesses within the diet.
13. Discuss dietary fats and dental health.

14. Identify the requirements and sources for fat and fatty acids.
15. Identify the health concerns associated with over and under-consumption of fat.
16. List the advantages and disadvantages of fat replacers.

#### **UTILIZATION OF THE ENERGY NUTRIENTS: METABOLISM AND BALANCE**

1. Define the terms catabolism, anabolism.
2. Explain the metabolism of carbohydrates, proteins, lipids and alcohol.
3. Explain Basal Metabolic Rate (BMR) and the factors that affect the BMR.
4. Discuss the calculations made to determine Total Energy Requirements.
5. Identify the factors that affect energy balance.

#### **Vitamins Required for Calcified Structures: A, D, E, AND K**

1. Identify the four fat-soluble vitamins and the chemistry and property of each.
2. Discuss the chemistry, absorption, and function for the fat-soluble vitamins, A, D, E, and K.
3. Discuss the deficiency state, RDA, source, and therapy for each fat-soluble vitamin.
4. Discuss the effect of a deficiency of vitamins A, D, E, and K on the oral structures and throughout the body.

#### **Vitamins Required for Calcified Structures: C (ASCORBIC ACID)**

1. Define the term vitamin.
2. Discuss the chemistry, general properties, functions, absorption and metabolism of vitamin C.
3. Identify the general and oral signs of vitamin C deficiency.
4. Describe the impact of vitamin C and wound healing.
5. List the RDA for vitamin C in specific individuals.
6. Identify the food sources of vitamin C.
7. Discuss toxicity of vitamin C.
8. Discuss additional proposed benefits of vitamin C intake.
9. Identify the chemistry, function, absorption and metabolism for folic acid.

#### **Vitamins Required for Oral Soft Tissues and Salivary Glands**

1. Describe the classification of the B complex vitamins.
2. Identify the chemistry, function, and absorption and metabolism for each of the B complex vitamins and vitamin-like compounds (thiamin, riboflavin, niacin, pantothenic acid, biotin, B<sub>6</sub>, and B<sub>12</sub>).
3. Identify the diagnosis of deficiency, and toxicity for each of the B complex vitamins.
4. Identify the food sources and Recommended Dietary Allowance for each of the B complex vitamins.

#### **MINERALS Essential for Calcified Structures & Nutrients Present in Calcified Structures**

1. Identify the minerals and describe their distribution, function, manner of absorption, storage and excretion in the human body.
2. Describe how the body uses minerals to help maintain fluid and electrolyte balance and acid-base balance.
3. Describe the mineral regulation in the body.
4. Identify the dietary sources, RDA, and any toxicity that may result in the human diet.
5. Discuss the effect of the mineral deficiency or oversupply in the oral cavity and human body.
6. Describe the relationship between dietary potassium and hypertension.
7. List the trace minerals and identify which are human requirements and which are activators of enzyme systems.
8. Discuss the functions, RDA, and food sources for trace minerals.
9. Discuss the trace mineral deficiencies and oversupplies, symptoms, and therapy for each mineral.
10. Discuss the effect of trace minerals (except fluoride) on dental caries.

#### **WATER AND MINERALS REQUIRED FOR ORAL SOFT TISSUES AND SALIVARY GLANDS**

1. Describe the functions of water in the body.
2. Define water balance.

3. Discuss the electrolytes. Include the physiological role, requirements, sources, deficiency state, toxicity state, and regulation for each.
4. Discuss iodine and iron. Include the physiological role, requirements, sources, deficiency state, toxicity state, and regulation for each.

#### **NUTRITIONAL REQUIREMENTS THROUGHOUT THE LIFE CYCLE**

1. Describe the major dietary life cycles and the nutritional requirements specific to each cycle.
2. Identify the nutritional requirements specific to the adolescent female.
3. Identify and discuss social, psychological, and oral environmental factors that contribute to malnutrition in the elderly.
4. List the physiological conditions that impact nutrition for the elderly.
5. Discuss problems dealing with food intake, digestion and utilization.
6. Describe three sites at which medications and food may interact.
7. Discuss the impact of drugs on the metabolism and absorption of nutrients.
8. Identify dental problems which may be nutritionally related.
9. Discuss dietary suggestions for the elderly.
10. Discuss dietary suggestions for denture wearers.

#### **NUTRITIONAL MANAGEMENT OF DIET-RELATED PROBLEMS OF THE ORAL MUCOSA AND TOOTH ENAMEL**

1. Identify two reasons for sensitivity of the oral mucosa to physiological changes from nutrition.
2. Distinguish between primary and secondary nutritional deficiencies.
3. Identify reasons individuals do not select nutritional food.
4. List and discuss the progressive stages in the development of nutritional deficiencies.
5. Describe the procedure to assess a patient's nutritional status.
6. Identify three major changes that occur in the oral cavity as a result of nutritional deficiencies.
7. Describe the role of nutritional deficiencies in cheilosis, angular stomatitis, glossitis, gingivitis, oral mucosa inflammation.
8. Describe the nutritional management of acute problems of the oral mucosa.
9. Identify the situations when vitamin supplementation is appropriate.
10. Suggest appropriate supportive dietary therapy for patients with prosthodontics, oral cancer and eating disorders.

#### **NUTRITIONAL ASPECTS OF DENTAL CARIES: CAUSES, PREVENTION, AND TREATMENT**

1. List and explain the five causative agents concerned with the initiation and extension of dental caries.
2. Explain the relationship of sugar alcohols, starches, and sugars to dental caries.
3. Explain the relationship between the texture of food and dental caries.
4. Discuss the comparative cariogenicity of starch and sugar in humans.
5. Explain the significance of the Stephan Curve.
6. Know the instrument used to assess diet in relation to caries.
7. Know the groups of foods which are high caries risks.
8. Discuss the evidence for the relationship of caries to bacteria and carbohydrates.
9. List the bacteria that play a significant role in caries development.
10. Describe a diet which would be considered non-cariogenic.

#### **DIETARY COUNSELING FOR THE PREVENTION AND CONTROL OF DENTAL CARIES**

1. Describe the two effects of nutrition on teeth.
2. Identify the food choices and eating habits which merit attention during a diet counseling session.
3. Explain Shaw's statement, "the frequency of eating, the amount of food retained in the mouth particularly on tooth surfaces, and the length of time that food residues are retained in critical areas are more important than the total amount of sugars consumed."
4. Discuss the significance of the sequencing of food during a meal.
5. What should the diet counselor incorporate into the diet prescription whenever possible.

9. Discuss the basic prerequisite for accomplishing dietary change and the minimal requirements for a successful dietary counseling service.
7. Describe the type of patient that would most likely benefit from a diet counseling service.
8. List the communication techniques that will have a beneficial effect on effective communication.
9. Explain the first and basic goal in interviewing. Discuss the characteristics of the physical setting, diet interviewer, and the interview techniques that will result in a successful interview.
10. Compare and contrast a directive versus a non-directive approach to counseling.
11. List and explain the guidelines for counseling described by Nizel.
12. What are the basic factors that motivate people according to Garn.
13. Explain the four rules that should be adopted when making dietary modifications.
14. Describe the instructions given to a patient keeping a 5 Day Food Intake Diary.
15. Summarize the guidelines and the dietary counseling for caries prevention and control.

#### **THE ROLE OF NUTRITION IN PREVENTION AND MANAGEMENT OF PERIODONTAL DISEASE**

1. Identify the means by which nutritional deficiencies can contribute to periodontal disease.
2. Discuss the conclusions about the local effects of the physical consistency of food on periodontal health.
3. Identify the etiology of ANUG and describe the recommended dietary prescription.
4. Identify and describe each step for giving nutritional guidance to a patient with chronic periodontitis.
5. Describe the goal for prescribing a diet before periodontal surgery.
6. List three benefits from good nutrition in regard to periodontal tissues.
7. Discuss the use of firm, fibrous foods to a) remove plaque, b) stimulate saliva, and c) provide for food removal or oral clearance.
8. Discuss the need for high protein food supplements before and after periodontal surgery.
9. Describe a recommended post-operative dietary management for office periodontal patients.

## **APPENDIX I**

### *Grade Computation Sheet*

## Nutrition Grade Computation Sheet

### Test Grades:

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_

Test average: \_\_\_\_\_

Test average:	_____	X .60=	_____
Nutritional			
Counseling	_____	X .20=	_____
Personal Dietary			
Analysis Project		X .20=	_____
Total of above:			_____
Final Grade:			_____

## **APPENDIX II**

### ***NUTRITIONAL COUNSELING INFORMATION***



## WRITTEN SUMMARY

A brief written summary of the counseling session will be due to the instructor the day after the counseling session is completed. The summary should include information from the session that identifies eating habits and nutritional choices which impact the patient's oral health. It should also include healthy options given to the patient to improve their nutritional intake and oral health. The summary should conclude with statements addressing what was learned from the nutritional counseling session. One statement should include what the patient learned and one should include what the student learned.

## NUTRITION FOR DENTAL HYGIENE PATIENT ASSESSMENT INSTRUCTIONS

### Objectives

Upon completion of this project, student will be able to:

1. Objectively assess their patient's personal dietary patterns using the [www.choosemyplate.gov](http://www.choosemyplate.gov) SuperTracker
2. Practice the process of recording and analyzing food intake for its nutritive and cariogenic value.
3. Use one's nutritional and dental knowledge in contributing to better general and oral health for self and patients.

### Procedure

- Type Food Diary and CHO Worksheet
- Include all Data gathered from patient Nutrition Case History and Reports from Myplate.gov and Caries Risk Assessment.
- Type Written Report (one page)

### 1. Food Record/Dietary Analysis Form

A. Have your patient write down everything they eat for **5** consecutive days, then **type** it in on the Food Diary Form in your Syllabus. This will be for your patient during the Counseling Session. For one of the days, have them circle in red where they think the Fermentable Carbs are in their diet. *Do not choose days when they are dieting, fasting, or ill.*

- Be accurate in determining the amounts eaten.
- Remember to include extras such as mayonnaise on your sandwich, butter on your toast, salad dressing, chewing gum, and fluids (e.g., water, alcohol).
- Use brand names whenever possible (e.g., Cheerios, McDonald's).
- Record food preparation methods, when applicable (e.g., baked, fried, grilled).
- Do not include supplements.

B. Enter data into [www.choosemyplate.gov](http://www.choosemyplate.gov) at Super Tracker tab and follow same instructions as your own dietary project, excluding Nutrient Reports.

## 2. Fermentable Carbohydrate Analysis Worksheet

- A. Transfer the food items from the Food Diary to this worksheet with each fermentable CHO circled in red or highlighted.
- B. For each food circled/highlighted, comment on why it is cariogenic or not cariogenic. An example of a format is in your textbook, p. 349 (Fig.17-7).
- C. Total the number of minutes of acid exposure each day. Consider that one exposure may include several fermentable CHOs, and that not every meal is cariogenic. **2 hours/day is considered high.**
- D. The Fermentable Carb Analysis Worksheet is to **be typed and placed directly with each Day of Food Diary that it corresponds to. Ex. Day 1 of Food Diary has a corresponding Ferm Carb Worksheet. Label Both as Day 1, Day 2 etc.**

## 3. Reports from choosemyplate.gov – (No Nutrient Report needed)

- A. Print a report from MyPlate.gov titled *Food Group and Calorie Report* as seen in the screencast on Blackboard
- B. Include a 5 day report of *Food Group and Calorie Report* to show the patient their *average* overall of each food group they consumed for the entire week. May also print one for each day. (optional)
- C. Optional is a bar graph report from Myplate.gov as seen on screencast and/or the one bar graph shown with daily food entry. (For patient education only or can use the computer available during your oral counseling session to show patient bar graph)

## 4. Nutrition Case History (Form in Syllabus)

- Include relationship of medication, alcohol, or smoking to their nutritional status. Which nutrients are affected? What are some suggestions for improvement?
- Dental history. List all pertinent information from your dental/oral history form from the clinic, including:
  - Oral hygiene status (i.e. amount of plaque)
  - Periodontal problems—includes description of gingival condition
  - Orthodontics
  - Number of restorations
  - Does your dental health affect nutritional intake? Does your nutritional intake have an impact on your oral health?

## 5. Caries Risk Assessment (Form in Syllabus)

## 6. Menu Plan (Form in Syllabus)

- From the findings in your report, **create a Realistic Menu** for one day on the **Menu Planning** form in Syllabus that meets the Dietary Guidelines. Comment on the possibility of adding these foods to their diet. Identify foods from their diet that are in excess. Comment on the possibility of reducing these foods. Identify foods in their diet to include in their ideal menu.
- **Consider any Special dietary considerations** (e.g., cultural, lactose intolerant, low sodium, low fat, low calorie, allergies, intolerances, vegetarian, religious, or ask do you follow no special guidelines): NOTE these on the Menu Plan at the bottom if any apply.

## 7. Written Summary: (Last in binder) **Total of 2 pages**

### A. Compare their intake with 2010 Dietary Guidelines of MyPlate.gov

- Where can they improve? What food groups did your patient do well in?
- Provide specific and realistic recommendations.
- Comment on the comparison of their intake with MyPlate.gov
- What specific foods or beverages did they consume that helped them meet the recommendations?
- What nutrients might be affected by their diet?
- What oral health issues might be affected by their diet?
- What specific foods or beverages can they modify?
- Explain items from their medical or dental history that require modification in your intake.

### B. Conclusions and expected success of the program:

- Conclude with statements addressing what was learned from the nutritional counseling session.
- One statement should include what the patient learned and one should include what the student learned .
- List at two or three realistic and measurable goals/objectives your patient plans to make this year.
- Summarize all of your comments on improving your patient's dietary intake.

### C. Professionalism

Edit your paper.

- Grammar/spelling
- Completeness—did you turn in all parts of the assignment? Neatness
- Accuracy—correct values and calculations, information presented, appropriate dental terms
- Logic of conclusions and appropriateness of recommendations—your conclusions must be consistent with the evidence, and your recommendations must be in line with current nutrition knowledge
- Place the completed project in the same binder or folder as your Personal Dietary Analysis

### **Evaluation**

All of the forms that are in your Syllabus and your written summary should be compiled and turned in by 9:00 A.M. on DAY FOLLOWING YOUR NUTRITIONAL COUNSELING SESSION. *Ten percent will be deducted from the total grade of the project for each day (except weekends) that it is late.*

*If you are having trouble with the assignment, email me before the assignment is due.*

***You are graded on the written summary and oral counseling. See page 36 and 37 for Nutritional Skill Evaluation Rubric.***

## NUTRITIONAL COUNSELING GUIDELINES

Include the following information in your clinical counseling session.

1. Facts obtained from the interview affecting diet. Include such information as:
  - a. where meals are eaten
  - b. when meals are eaten
  - c. activities while eating
  - d. snacking patterns
  - e. factors that influence food selection
  - f. anything else that affects diet
  - g. reports from [www.myplate.gov](http://www.myplate.gov)
  - h. caries risk assess form
  - i. CHO Worksheet
  - k. Nutrition Case History form
2. Summary of the diet diary data.
  - a. did the patient eat three meals a day
  - b. between meal snacking
  - c. type of sugar consumed
  - d. good food choices
  - e. deficiencies in nutrients
  - f. total acid production time
  - g. anything else pertinent to diet analysis
3. Identify the patient's knowledge of diet related dental concepts.
4. Detail substitutions patient decided on for diet in the future and 3 realistic goals recommended for patient
5. Recall interval and follow-up appointment objectives; include concepts you plan to cover in next appointment.

## SECOND APPOINTMENT REPORT

**The second session must be recorded on a tape recorder and submitted with all clinical forms for evaluation session to the instructor. Students must furnish the tape and tape recorder to the instructor. The second session will be evaluated by your peers.**

1. Identify any changes made by the patient since last appointment. Include changes in eating habits, patterns, food selection and anything else that might affect the diet.
2. Compare acid production; form of sugar eaten, when eaten; nutritional adequacy of diet etc., with the first diet analysis.
3. Evaluate or assess the overall impact of the nutrition counseling on the patient's attitudes, values, etc. concerning diet and dental health.
4. Outline any distinct changes made by the patient.
5. Evaluate your effectiveness as a nutrition counselor. Where are your strengths and weaknesses?

**Second Nutritional  
Counseling Session and  
Report  
Due in Fall Semester**

## **NUTRITION CASE HISTORY**

Caries Susceptible Patient

Date _____	Age _____
Name _____	Height _____
Occupation _____	Weight _____
Marital Status _____	Desirable Weight _____
Nationality _____	Food Allergies _____
Religion _____	

### **Personal and Social History**

If working or student? Number of hours/week? i.e. 8:00 to 5:00? \_\_\_\_\_

Activities that foster between meal snacks (TV, reading, studying, etc.) \_\_\_\_\_

Number of meals/ Snacks per day \_\_\_\_\_

Exercise? \_\_\_\_\_

How often to you eat away from home? \_\_\_\_\_

Who does the cooking and/or shopping? \_\_\_\_\_

Who lives at home? \_\_\_\_\_

### **Medical History related to dental health**

Mouth Breather	<input type="checkbox"/> no	<input type="checkbox"/> yes	
Food Allergies	<input type="checkbox"/> no	<input type="checkbox"/> yes	_____
Medications/Supplements	<input type="checkbox"/> no	<input type="checkbox"/> yes, identify	_____
Smoking	<input type="checkbox"/> no	<input type="checkbox"/> yes, identify	_____
Other Conditions that relate to dental health	_____		

### **Clinical Observations**

General Appearance: (Alertness, Gait, Posture, Muscular and Skeletal Development, Overweight or Underweight, etc.)	<input type="checkbox"/> normal	<input type="checkbox"/> not healthy, explain	
Skin changes	<input type="checkbox"/> normal	<input type="checkbox"/> not healthy, explain	_____
Lips, tongue and oral mucous membrane changes	<input type="checkbox"/> normal	<input type="checkbox"/> not healthy, explain	_____
Periodontal health	<input type="checkbox"/> healthy	<input type="checkbox"/> not healthy, explain	_____
Determine the BMI	<input type="checkbox"/> classification		_____

### **Other Comments**

\_\_\_\_\_

\_\_\_\_\_

### Caries Risk Assessment Form (Age >6)

Patient Name:

Score:

Birth Date:

Date:

Age:

Initials:

		Low Risk (0)	Moderate Risk (1)	High Risk (10)	Patient Risk
I.	<b>Fluoride Exposure</b> (through drinking water, supplements, professional applications, toothpaste)	Yes	No		
II.	<b>Sugary or Starchy Foods or Drinks</b> (including juice, carbonated or non-carbonated soft drinks, energy drinks, medicinal syrups)	Primarily at mealtimes		Frequent or prolonged between meal exposures/day	
III.	<b>Caries Experience of Mother, Caregiver</b> and/or other <b>Siblings</b> (for patients ages 6-14)	No carious lesions in last 24 months	Carious lesions in last 7-23 months	Carious lesions in last 6 months	
IV.	<b>Dental Home:</b> established patient of record, receiving regular dental care in a dental office	Yes	No		
I.	<b>Special Health Care Needs*</b>	No	Yes (over age 14)	Yes (ages 6-14)	
II.	<b>Chemo/Radiation Therapy</b>	No		Yes	
III.	<b>Eating Disorders</b>	No	Yes		
IV.	<b>Smokeless Tobacco Use</b>	No	Yes		
V.	<b>Medications that Reduce Salivary Flow</b>	No	Yes		
VI.	<b>Drug/Alcohol Abuse</b>	No	Yes		
I.	<b>Cavitated or Non-Cavitated</b> (incipient) <b>Carious Lesions or Restorations</b> (visually or radiographically evident)	No new carious lesions or restorations in last 36 months	1 or 2 new carious lesions or restorations in last 36 months	3 or more carious lesions or restorations in last 36 months	
II.	<b>Teeth Missing Due to Caries in past 36 months</b>	No		Yes	
III.	<b>Visible Plaque</b>	No	Yes		
IV.	<b>Unusual Tooth Morphology</b> that compromises oral hygiene	No	Yes		
V.	<b>Interproximal Restorations - 1 or more</b>	No	Yes		
VI.	<b>Exposed Root Surfaces Present</b>	No	Yes		
VII.	<b>Restorations with Overhangs</b> and/or <b>Open Margins; Open Contacts</b> with Food Impaction	No	Yes		
VIII.	<b>Dental/Orthodontic Appliances</b> (fixed or removable)	No	Yes		
IX.	<b>Severe Dry Mouth (Xerostomia)</b>	No		Yes	
<b>TOTAL:</b>					

Patient Instructions:

\*Patients with developmental, physical, medical or mental disabilities that prevent or limit performance of adequate oral health care by themselves or caregivers.

Indicate 0, 1 or 10 in the last column for each risk factor. If the risk factor was not determined or is not applicable, enter a 0 in the patient risk factor column. Total the factor values and record the score at the top of the page.

A score of 0 indicates a patient has a low risk for the development of caries. A single high risk factor, or score of 10, places the patient at high risk for development of caries. Scores between 1 and 10 place the patient at a moderate risk for the development of caries. Subsequent scores should decrease with reduction of risks and therapeutic intervention.

The clinical judgment of the dentist may justify a change of the patient's risk level (increased or decreased) based on review of this form and other pertinent information. For example, missing teeth may not be regarded as high risk for a follow up patient; or other risk factors not listed may be present.

The assessment cannot address every aspect of a patient's health, and should not be used as a replacement for the dentist's inquiry and judgment. Additional or more focused assessment may be appropriate for patients with specific health concerns. As with other forms, this assessment may be only a starting point for evaluating the patient's health status.

*This is a tool provided for the use of ADA members. It is based on the opinion of experts who utilized the most up-to-date scientific information available. The ADA plans to periodically update this tool based on: 1) member feedback regarding its usefulness, and; 2) advances in science. ADA member-users are encouraged to share their opinions regarding this tool with the Council on Dental Practice.*



## FIVE DAY FOOD INTAKE DIARY For PATIENT

NAME: \_\_\_\_\_  
DATE: \_\_\_\_\_

### INSTRUCTIONS

Please record in detail everything you eat or drink in the order in which it is eaten.

The frequency of eating is an important consideration; therefore, include not only meals but between meal snacks, candies, gum, etc.

It is very important to include the amount of food eaten (size of serving) and the way in which the food is prepared (baked, grilled, etc.) It is also important to include the addition of sugar, syrup or milk to cereal, beverages or other foods.

### EXAMPLE:

Wrong	Right
Juice	½ C tomato juice
Sandwich	1 chicken breast sandwich with lettuce
Dessert	1 slice chocolate cake
Coffee	1 C coffee with 1 Tbl milk and 2tsp sugar

### FIRST DAY

BREAKFAST:

AM SNACK:

LUNCH:

PM SNACK:

DINNER:

### SECOND DAY

BREAKFAST

AM SNACK:

LUNCH:

PM SNACK:

DINNER:

### **FIVE DAY FOOD INTAKE DIARY ( Continued)**

THIRD DAY	FOURTH DAY	FIFTH DAY
BREAKFAST:	BREAKFAST:	BREAKFAST
AM SNACK:	AM SNACK:	AM SNACK:
LUNCH:	LUNCH:	LUNCH:
PM SNACK:	PM SNACK:	PM SNACK:
DINNER:	DINNER:	DINNER:

## Stegeman: The Dental Hygienist's Guide to Nutritional Care, 3rd Edition

## Carbohydrate Intake Analysis Worksheet

<b>Carbohydrate (CHO) Intake Analysis Worksheet</b>			
<b>Fermentable CHO</b>	<b>Cariogenic?</b>	<b>Reason</b>	<b>Period of Exposure to Enamel</b>
<b>TOTAL EXPOSURE TIME:</b> _____			

### Dietary Assessment

Nutrient	Day 1	Day 2	Day 3	Average of 3 days	Daily Allowance
Total Calories					
CHO* (45-65% of total Kcal)					
Protein* (10-35% of total Kcal)					
Fiber					20-35 g/day
Total Fat* (20-35% of total Kcal)					
SFA* (≤7% of total Kcal)					
MUFA* (up to 15% of total Kcal)					
PUFA* (up to 10% of total Kcal)					
Alpha-Linolenic Acid (Omega 3)					1.1 g/day women; 1.6 g/day men
Cholesterol					≤300 mg/day
Vitamin A					
Vitamin C					
Vitamin E					
Thiamin					
Riboflavin					
Niacin					
Folate					
Vitamin B <sub>6</sub>					
Vitamin B <sub>12</sub>					
Calcium					
Phosphorus					
Magnesium					
Iron					
Zinc					
Potassium					
Sodium					2300 mg/day
Water					9c/d women; 13 c/d men

[illegible]

## Nutritional Counseling Skill Evaluation

Student Name _____ Date (1 <sup>st</sup> Session) _____ _____ _____	Patient Name _____ Grade _____ Competency: _____ 75% _____
--	---

**The following criteria will be used to determine a competency of 75% or higher on the Nutritional Counseling Skill Evaluation**

**1= Meets all requirements    1/2= Needs improvement    0= Requirements not met**

Points earned		
1		Defends patient selection
2		Assess patient (review health history, diet history and other available data)
3		All forms are completed and handed in to instructor after session
<b>Organization</b>		
4		Student is organized and follows step by step procedure.
<b>Counselor Characteristics</b>		
5		Student exhibits professional/ethical behavior throughout counseling sessions (see professional conduct guidelines).
6		Student utilizes principles to encourage learning and patient participation. Use of "ask before you tell" methodology to determine patient's level of knowledge prior to each concept. Student also asks questions following each concept to determine learning.
7		Student encourages patient participation
8		Rapport is developed with the patient by pleasant attitude, serious counselor.
<b>Counseling Session</b>		
9		Introduction includes the reason for the counseling session as it relates to dental disease.
10		The "Why" of the diet is assessed by asking the patient to describe a typical day's routine and/or typical weekend routine. Counselor determines oral hygiene as it relates to eating habits.
11		Patient records a 5 day food intake diary which includes a weekend. The 5 day food intake is obtained by the student prior to the counseling session.
12		CONCEPT I: interaction of tooth, plaque, and sugar is discussed.
13		CONCEPT II: mealtime exposure, limiting frequency of sweet exposure (eating sweets all at one time) is discussed.
14		CONCEPT III: need to include at least one firm food with each meal (to stimulate

	Points earned	
		saliva).
15		Counselor asks patient to circle in red all exposures sweetened with sugar.
16		CONCEPT IV: the effects of the different forms of sugar on the oral environment are discussed.
17		Patient correctly tallies circled exposures on "Plaque-Forming Sweets" form according to liquid, solid and sticky, or slowly dissolving and whether with meals or between meals.
18		Counselor explains the reaction of bacterial enzymes in plaque on sugar to change it to acid within 20 seconds and for the duration of the exposure and beyond.
19		Patient calculates exposures of sweets per 5 days and multiplies by appropriate number of minutes to find total minutes exposure to acid per day for the week.
20		Patient makes a conclusion based on the results concerning its relation to his caries rate or other disease problem (compares between meals and mealtime, relates total acid time to norm, etc.)
21		CONCEPT V: the Five Basic Food groups and the need to have all for a balanced diet is explained.
22		Patient determines adequacy of the diet by evaluating information from MyPyramid.gov.
23		Counselor identifies the nutritious foods from the non-nutritious as they are noted by the patient. Commends patient on good food selection, habit patterns, etc.
24		Patient determines adequacy of diet by comparing patient daily intake with (RDA) recommended daily allowance.
25		Counselor asks patient if there are foods in the deficient groups that are liked which the patient would realistically substitute for the poor selections.
26		Counselor assists patient (if necessary) by suggesting diet recommendations personalized according to patient established habit patterns and verbal communication in counseling session.
27		Counselor asks the patient to summarize in his own words "what have you learned today?"
28		Counselor explains the follow-up counseling session and its purpose.
29		Counselor writes a summary in narrative style which includes the findings, diagnosis and recommendations from patient responses.
30		Student states goals for the follow up visit based on concepts not stressed this appointment (if any).

## **NUTRITION FOR DENTAL HYGIENE PERSONAL DIETARY ASSESSMENT**

### **Objectives**

Upon completion of this project, student will be able to:

1. Objectively assess their patient's personal dietary patterns using the [www.Myplate.gov](http://www.Myplate.gov) SuperTracker
2. Practice the process of recording and analyzing food intake for its nutritive and cariogenic value.
3. Use one's nutritional and dental knowledge in contributing to better general and oral health for self and patients.

### **Procedure**

- Type Food Diary and CHO Worksheet in Syllabus
- Type Nutrient Dietary Assessment Form
- Type Written Report (two pages)

#### **1. Food Record/Dietary Analysis Form**

**A.** Record and **type** in everything you eat and drink for 3 consecutive days before class begins on July 12<sup>th</sup>. Use the Stegeman's Food Diary Form attached in this email and found on blackboard. *Do not choose days when you are dieting, fasting, or ill.*

- Be very accurate in determining the amounts eaten. Ex. ½ cup, 1 cup
- Remember to include extras such as mayonnaise on your sandwich, butter on your toast, salad dressing, chewing gum, and fluids (e.g., water, alcohol).
- Use brand names whenever possible (e.g., Cheerios, McDonald's).
- Record food preparation methods, when applicable (e.g., baked, fried, grilled).
- Do not include supplements.

**B. Enter data into [www.MyPlate.gov](http://www.MyPlate.gov) at Super Tracker tab**

- Register a login using your height, weight, age and gender.
- Enter each food item and beverage separately for each meal and snack for that specific day.

#### **2. Fermentable Carbohydrate Analysis Worksheet**

**A.** Transfer the food items from the Food Diary to this CHO worksheet. Type in each beverage and food consumed.  
Circle in **RED** or **HIGHLIGHT** each fermentable CHO

- B.** For each food circled/highlighted, comment on why it is cariogenic or not cariogenic. An example of a format is in your textbook, p. 349 (Fig.17-7).
- C.** Total the number of minutes of acid exposure each day. Consider that one exposure may include several fermentable CHO's, and that not every meal is cariogenic. **2 hours/day is considered high.**

**D.** The Fermentable Carb Analysis Worksheet is to **be typed and placed directly with each Day of Food Diary that it corresponds to.**  
**Ex. Day 1 of Food Diary has a corresponding Ferm CHO Worksheet, Day 2 has a corresponding Ferm CHO, & Day 3. Label BOTH forms as Day 1, Day 2, Day 3**

**3. Reports from MyPlate.gov – (Nutrient Report needed)**

- A.** Print a 3 day average FOOD GROUP CALORIE report to show Food Groups that you were deficient in and those in excess.
- B.** Print a NUTRIENT REPORT for EACH day and an average summary report of all 3 days

**4. Dietary Assessment Form**

- A. Record** your intake of the **Highlighted** Nutrients on this form
- B. Average them and compare to the Daily Allowance**
- C. Determine as either, adequate, inadequate or high**

**5. Nutrition Case History (Form in Syllabus)**

- Include relationship of medication, alcohol, or smoking to your nutritional status.?
- Dental history. List all pertinent information from your dental/oral history form from the clinic, including:
  - Oral hygiene status (i.e. amount of plaque)
  - Periodontal problems—includes description of gingival condition
  - Orthodontics
  - Number of restorations
- Does your dental health affect nutritional intake? Does your nutritional intake have an impact on your oral health?

**6. Written Summary:** (Last in binder) **2 -3 typed pages.** Double spaced, Ariel Font size 12. Using the information from Myplate.gov : .) 2010 Dietary Guidelines 2.) Nutrient Intake and 3.) Food Group Report, Recommendation Bar



graph, compare your intake of basic food groups AND the nutrients highlighted on Dietary Assessment form.

**MAIN Body of paper consists of:**

**A.** Comparing your intake with 2010 Dietary Guidelines of MyPlate.gov

- Where can you improve? What food groups did you do well in?
- What specific foods or beverages did you consume that helped to meet the recommendations
- What nutrients were affected by your diet?
- List the foods in your diet that provided these nutrients or which foods could have prevented a deficiency of these nutrients.
- What specific foods or beverages can you modify? What dietary guidelines did you follow?
- What health issues could potentially occur from your diet?
- What oral health issues could be affected by your diet?
- Explain items from your medical or dental history which requires modification in your intake.

**B.** Conclusions and expected success of the program:

- Conclude with statements addressing what was learned from the nutritional counseling session and how you will improve your dietary intake by including nutrient dense foods
- What realistic goal can you set for yourself to improve your diet?

**7. Professionalism**

Edit your paper.

- Grammar/spelling
- Completeness—did you turn in all parts of the assignment?
- - 1.) 3 Day TYPED Food Diary
  - 2.) 3 CHO Worksheets
  - 3.) Dietary Assessment Form
  - 4.) Nutrient Report for Each Day from Myplate.gov and an average report of all 3 days
  - 5.) Average Food Group Report Summary of the 3 days
- Accuracy—correct values and calculations, information presented, appropriate dental terms
- Logic of conclusions and appropriateness of recommendations—your conclusions must be consistent with the evidence, and your recommendations must be in line with current nutrition knowledge

- Place the completed project in a binder or folder in a daily order with Nutrition Case History first and Written Summary last.

**Evaluation:**

Place the completed project in a binder or folder in a daily order with Nutrition Case History first and Written Summary last.

***Grading will be based on:***

Food Diary Form	15 points
Nutrition Case History, Nutrient Report Food Group Report MyPlate.gov	20 points
CHO Analysis Worksheet	30 points
Written Summary & Professionalism	25 points
Dietary Assessment Form	10 points
<b>Total Points</b>	<b>100 points</b>

*Plagiarism will not be tolerated*

## Stegeman: The Dental Hygienist's Guide to Nutritional Care, 3rd Edition

### Menu Planning Record for Patient

Menu Planning Record	
Instructions: Create a realistic menu for 1 day.	
Time	Meal
	Breakfast
	Morning Snack
	Lunch
	Afternoon Snack
	Dinner
	Evening Snack
Totals/Day  Fruit: Vegetable: Starch/Bread: Milk: Fat: Protein/Meat: Others:	