

WARNING: Being Female May Be Hazardous to Your Oral Health!
Women, Nutrition and Oral Health: Implications throughout the Lifecycle

Lisa F. Mallonee, MPH, RDH, RD, LD

Professor and Graduate Program Director, Caruth School of Dental Hygiene

Texas A&M College of Dentistry

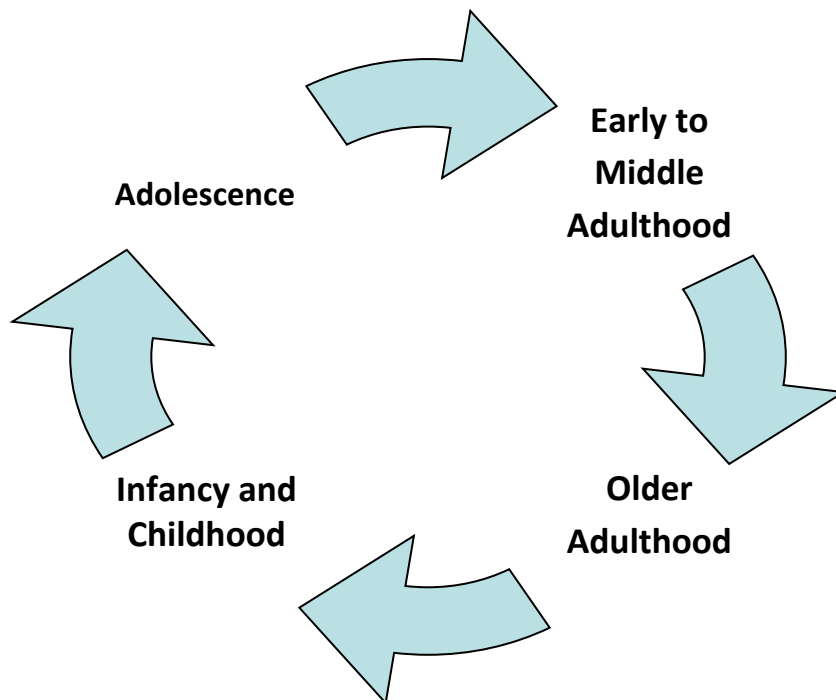
3302 Gaston Avenue, Room 139F Dallas, Texas 75246

Phone 214-828-8914 Fax 214-874-4525

lharpermallonee@tamhsc.edu

Divisions of the Typical Lifecycle

- Infancy
- Age 1 to 5 years
- Age 6 to 12 years
- Adolescence
- Adulthood (19-50, 51-70)
- Older Adulthood (> 70)



From the Female Perspective:

THE WONDER YEARS: Puberty and Adolescence

Hormonal changes

- Production of sex hormones, estrogen , and progesterone

Menstrual cycle

- Incidence and severity of gingivitis increases
- Aphthous ulcers

Eating Disorders

- **Anorexia Nervosa (AN)**
- **Bulimia Nervosa (BN)**

Intraoral and Extraoral Findings of AN and BN:

- Xerostomia—dry, chapped lips
- Dehydration
- Increase dental caries
- Commissure lesions (Angular Chelitis)
- Diminished taste acuity
- Parotid enlargement
- Perimylolysis/enamel erosion (*L, F, I, O; max anteriors*)
- Dentinal hypersensitivity (*often CC for seeking care*)
- Loss of vertical dimensions
- Thinning, chipping of incisal edges of anterior teeth
- Anterior teeth may appear translucent—with an open bite
- Raised amalgams
- Rounded, smooth lingual margins of teeth
- Oralpharyngeal area may appear reddened
- Ulcerations or hematomas on hard/soft palate
- Cheek and lip bites
- Petechia

Considerations During the Dental Appointment

- Use appropriate pain management techniques to protect sensitive hard and soft tissues
- Consider use of topical to help sensitivity
- Selective polishing should be used with patients who have extensive enamel erosion
- No extrinsic stain--use fluoridated toothpaste to polish
- Until eating disorder is under control, restorative treatment must wait—provide palliative care only

Educating the Eating Disorders Patient

- Low pH of stomach contents causes chemical loss of tooth enamel (erosion)
- Brushing after an episode can further abrade the already softened tooth surface
- Self starvation and decreased body fat alter endocrine function and can cause osteoporosis later in life
- Laxative and diuretic abuse can decrease salivary flow which will increase dental caries
- Once eating disorder is controlled, appearance of parotid enlargement will reduce
- Educate the patient about the intake of high CHO diet and its role in dental caries
- Continual consumption of diet beverages in presence of limited salivary flow may result in dental erosion and dentinal hypersensitivity.
- Use models and intraoral photographs to help with patient education

Homecare Instructions

- Stress importance of regular dental visits
- Discourage from brushing after vomiting
- Rinse with 1tsp of baking soda mixed with 8 oz water after vomiting
- NO TAP H₂O--rinsing with tap water could decrease the buffering capacity of the saliva
- Instruct them on the use of a tongue cleaner to removed acidic residue from tongue
- Instruct on using a soft bristle brush
- Use desensitizing toothpastes to provide pain relief of hypersensitivity
- Saliva substitutes to help control dry mouth
- Recommend sugarless gums and mints w/ xylitol
- Custom trays and/or mouth guard can be fabricated for use during out of control binge and purge episodes.
- 1.1% neutral fluoride gel can be used for hypersensitivity
- .2% sodium fluoride rinse can also be used
- Stannous is contraindicated due to low pH

Other Dental conditions and strategies during adolescence:

- Mouthguard use
- Orthodontics
- Tobacco cessation

General Nutrition strategies for the adolescent patient:

- Encourage nutritionally adequate diet
 - Dietary choices: fast food, decreased consumption of fruits, veggies, dairy and whole grains
- Discourage consumption of empty calorie foods: soft drinks, refined sugars/processed
- Calcium iron and zinc are essential nutrients
- Address acid beverage consumption: sports drinks, diet drinks, flavored waters

Early (ages 19-50) to Middle Adulthood (ages 51-70)

Oral contraceptive use

- Gingivitis
- Weight gain

Pregnancy

- Morning sickness
- Pregnancy granuloma
- Gingivitis
- Acid Reflux

Dental conditions and strategies during pregnancy

- ✓ Plaque control during pregnancy
- ✓ Periodontitis (LBW)
- ✓ Elective treatment during pregnancy
- ✓ Temporomandibular Disorder
- ✓ Early Childhood caries—educating mothers

Nutrition strategies during pregnancy:

- ✓ Nutrition needs increase during pregnancy—however, “eating for two” is not good advice.
- ✓ Discourage consumption of empty calorie foods—often these are caries causing as well.
- ✓ Food first—prenatal supplementation as recommended by physician
- ✓ RDA for protein needs increase. 34-46 gms are recommended for non pregnant woman. 71 g are recommended for pregnant woman.
- ✓ RDA for CHOs increased to 175 grams per day (130 for non pregnant woman) ; prevents ketosis
- ✓ Folate needs of non pregnant woman are 400 micrograms; pregnant woman needs at least 600 micrograms. Spina bifida and cleft mouth can result from folate deficiency.
- ✓ Vitamin B12, iron and zinc are important nutrients during pregnancy

Menopause

- As estrogen declines, so do the bones ..and maybe the teeth
- Rate of bone loss predicts tooth loss—for every 1% per year decrease in whole body bone mineral density, the risk of tooth loss increase more than 4x. (North American Menopause Society. Menopause Practise: A Clinician’s Guide. 3rd ed; 2007)
- Need for iron decreases after menopause. Post menopausal women should take a multivitamin that is iron free.

Hormone Replacement Therapy (HRT)

- ❖ Estrogen replacement improves bone density in postmenopausal women with moderate or advance periodontal disease. Those received HRT have significantly less gingival inflammation, lower plaque scores and less loss of attachment. Civitelli R, Pilgram TK, Dotson M, et al. Arch Intern Med 2002; 162: 1409-1415.
- ❖ Studies of the Nurses' Health Study and Framingham cohorts suggest that hormone therapy protects against tooth loss in postmenopausal women.
- ❖ However, controversy still remains as to whether or not it has a positive or negative whole body impact.

Osteoporosis

- ❖ "Silent disease"—not seen or felt by a patient
- ❖ No longer an older woman's disease
- ❖ Fractures incidence is usually higher in white females and lower for other ethnic groups in US
- ❖ Rate of osteoporosis related fractures is expected to greater than 3 million by 2025
- ❖ Among women over 45 years of age, osteoporosis accounts for more days being spent in hospital than any other disease including diabetes, myocardial infarction, and breast cancer
- ❖ Calcium needs Women ages 19-50: 500 mg two times daily (total 1000 mg taken morning and night to ensure proper absorption). Women ages 51 and older: 600 mg two times daily (total 1200 mg taken morning and night to ensure proper absorption)

Bisphosphonate Use

Risk Factors for bisphosphonate associated osteocrosis of the jaw

Drug related risk factors
Potency of bisphosphonates Intravenous result greater exposure than oral route Duration of the therapy: longer > issue
Local risk factors
<i>Dentoalveolar surgery including but not limited to:</i> Tooth extraction Dental implant Periapical surgery Peridontal surgery alone or involving osseous surgery
<i>Local Anatomy:</i> Mandible: lingual tori, mylohyoid ridge Maxilla: palatal tori
<i>Concurrent oral disease: inflammatory dental disease</i>

Demographic and systemic factors
Age Caucasian race Cancer diagnosis Osteopenia or osteoporosis diagnosis simultaneous with cancer diagnosis
Others thought to be risk factors
Corticosteroid therapy Diabetes Smoking Alcohol use Poor oral hygiene Chemotherapeutic drugs

American Association of Oral and Maxillofacial Surgeons Position Paper on Bisphosphonate Related Osteonecrosis of the Jaws. *J Oral Maxillofacial Surg* 2007; 65: 369-376.

Older Adulthood (those >70)

Graying of America

- In 2030, over 72 million Americans are expected to be of retirement age
- Women live longer than men so--they represent the larger portion of the 65+ age group, as well as 85+ group
- Living longer brings health complications—women are often more susceptible
- Research indicates that periodontal health may negatively impact systemic health.
- Osteoporosis, stroke, rheumatoid arthritis and diabetes mellitus are more prevalent among older women than men.
- Senile dementia also occurs more frequently in women.

Nutrition strategies during older adulthood:

- ✓ Macronutrient needs do not change from young adults' needs; some micronutrient needs do
- ✓ Vitamin D, B6, B12 and zinc needs increase
- ✓ No more than 1500 mg sodium daily; try to get 4700 mg potassium daily
- ✓ Recommend daily multivitamin/mineral supplement low in iron
- ✓ Decrease total energy consumption; increase diet's nutrient density
- ✓ Reduce fat intake—consume healthy fats (omega 3s, mono and polysaturated)
- ✓ Consume foods rich in fiber
- ✓ Consume adequate fluid
- ✓ Do not consume excess protein—lean choices

OTHER Female Issues—not lifecycle specific:

Cardiovascular Disease—no longer a “man’s disease”.

- Coronary heart disease, high blood pressure and stroke are leading cause of death among American women.
- *Risk factors:* Elevated BP , smokers, elevated cholesterol, diabetes, obesity and physical inactivity

Connections to oral health

- Xerostomia, gingival hyperplasia and taste impairment due to meds
- Oral bacteria and inflammatory process; periodontal disease

Recommendations for your patients:

- Smoking cessation
- Weight control
- Encourage health habits: reduce saturated fat, increased dietary intake of fruits, veggies, and low fat dairy
- Moderate consumption of alcohol
- Daily exercise

Diabetes

- Seventh leading cause of death among American women and the fourth leading cause of death among Hispanic, African-American and American Indian.
- Women with diabetes can experience 2-4x higher risk of heart issues than those without
- At risk patients: over age 45, family history, overweight, elevated cholesterol or elevated BP

Connections to oral health

- Increased risk of periodontal disease and attachment loss
- Blood glucose control

Recommendations for at risk patients:

- Adopt a healthier diet
- Increase daily physical activity
- Encourage health habits: reduce saturated fat, increased dietary intake of fruits, veggies, and low fat dairy
- Moderate consumption of alcohol
- Daily exercise

Stress

- Job related
- Family related
- Life in general

NOTES: