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

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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

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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 Practice: 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)
- 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 osteoderisis of the jaw

<table>
<thead>
<tr>
<th>Drug related risk factors</th>
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</thead>
<tbody>
<tr>
<td>Potency of bisphosphonates</td>
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<tr>
<td>Intravenous result greater exposure than oral route</td>
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<tr>
<td>Duration of the therapy: longer&gt; issue</td>
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<table>
<thead>
<tr>
<th>Local risk factors</th>
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<tbody>
<tr>
<td>Dentoalveolar surgery including but not limited to:</td>
</tr>
<tr>
<td>Tooth extraction</td>
</tr>
<tr>
<td>Dental implant</td>
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<tr>
<td>Periapical surgery</td>
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<tr>
<td>Peridontal surgery alone or involving osseous surgery</td>
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</tbody>
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<table>
<thead>
<tr>
<th>Local Anatomy:</th>
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<tbody>
<tr>
<td>Mandible: lingual tori, mylohyoid ridge</td>
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<tr>
<td>Maxilla: palatal tori</td>
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Concurrent oral disease: inflammatory dental disease
**Demographic and systemic factors**

<table>
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<tr>
<th>Age</th>
<th>Caucasian race</th>
<th>Cancer diagnosis</th>
<th>Osteopenia or osteoporosis diagnosis simultaneous with cancer diagnosis</th>
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**Others thought to be risk factors**

- Corticosteroid therapy
- Diabetes
- Smoking
- Alcohol use
- Poor oral hygiene
- Chemotherapeutic drugs

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**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