### Vitamins Minerals  Chapter 12

<table>
<thead>
<tr>
<th>Water soluble</th>
<th>Role</th>
<th>RDA</th>
<th>Source</th>
<th>Deficiency</th>
<th>Toxicity</th>
<th>Clinical Use</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>B₁ Thiamin</strong></td>
<td>intermediary metabolism</td>
<td>1.2mg ♂ 1.1mg ♀</td>
<td>meat grains legumes</td>
<td>beriberi</td>
<td>not toxic</td>
<td>tx: alcoholism peripheral neuritis</td>
</tr>
<tr>
<td><strong>B₂ Riboflavin</strong></td>
<td>coenzymes redox rxns</td>
<td>1.2mg ♂ 1.1mg ♀</td>
<td>dairy meat</td>
<td>angular cheilosis</td>
<td>not toxic</td>
<td>deficiency seen in alcoholics</td>
</tr>
<tr>
<td><strong>B₃ Niacin</strong></td>
<td>metabolism redox rxns</td>
<td>16mg ♂ 14mg ♀</td>
<td>meat legumes grains</td>
<td>pellagra (rough skin) “3-D’s” (diarrhea,dermatitis,dementia)</td>
<td>GI distress pruritis flushing</td>
<td>tx: hyperlipidemia</td>
</tr>
<tr>
<td><strong>B₆ Pyridoxine</strong></td>
<td>metabolism</td>
<td>1- 1.7 mg</td>
<td>meat eggs legumes grains</td>
<td>angular cheilosis stomatitis glossitis</td>
<td>not toxic (neuropathy with IV OD)</td>
<td>drug interactions can create B₆ deficiency</td>
</tr>
<tr>
<td><strong>Folic acid</strong></td>
<td>metabolism</td>
<td>400μg</td>
<td>meats fruits veggies</td>
<td>megaloblastic anemia (most common deficiency in USA)</td>
<td>not toxic, possible allergy</td>
<td>can create B₁₂ deficiency</td>
</tr>
<tr>
<td><strong>B₁₂ Cyanocobalamin</strong></td>
<td>metabolism fats, carbs</td>
<td>2.4 µg</td>
<td>micro-organisms</td>
<td>megaloblastic anemia (deficiency can result from pernicious anemia)</td>
<td>not toxic, possible allergy</td>
<td>vegans, gastrectomy =B₁₂ deficiency</td>
</tr>
<tr>
<td><strong>Pantothenic acid</strong></td>
<td>make acetyl-Co-A metabolism gluconeogenesis hormones</td>
<td>5-7 mg</td>
<td>egg yolks bran yeast liver</td>
<td>rare in humans (deficiency can develop with liver disease or alcoholism)</td>
<td>not toxic</td>
<td>↑ GI motility</td>
</tr>
<tr>
<td><strong>Biotin</strong></td>
<td>metabolism</td>
<td>25-35µg</td>
<td>milk egg yolks liver GI microbes</td>
<td>rare antiinfectives can create deficiency</td>
<td>not toxic</td>
<td>Tx: infant dermatitis</td>
</tr>
<tr>
<td><strong>Vitamin C</strong> (ascorbic acid)</td>
<td>redox rxns CT synthesis</td>
<td>90mg ♂ 70mg ♀</td>
<td>citrus fruits</td>
<td>scurvy stones in urinary tract</td>
<td>not toxic</td>
<td>used with Fe supplement (cold? cancer?)</td>
</tr>
</tbody>
</table>

### Lipid soluble

| Vitamin A | vision | 700-1300 RE | carotenes | night blindness | hypervitaminosis A hyperostosis **gingivitis** | Pregnancy Cat X Tx: acne |
| Vitamin D | bone formation | 5-15 µg | sunlight / skin | abnormal Ca⁺⁺ metabolism, rickets | abnormal Ca⁺⁺ metabolism | tx: rickets |
| Vitamin E | antioxidant | 10-20 mg | vegetable oils fish oil | anemia | not toxic ? | Tx: hemolytic anemia (newborn) much use with no clinical evidence |
| Vitamin K | synthesis of clotting factors | 60-120µg | green veggies egg yolks liver | hypoprothrombinemia → hemorrhage | rare, hemolytic anemia, hemolysis | tx :hypoprothrombinemia from coumadin, ↓ clot factors in hepatic disease |

### Selected Minerals

| Iron (Fe) | hemoglobin - O₂ | 8mg ♂ 8-27mg ♀ | red meats organ meats yeast egg yolks | anemia | GI distress bleeding hemochromatosis | tx: deficiency |
| Zinc (Zn) | transport of CO₂ elimination of lactic acid | 11mg ♂ 8mg ♀ | seafood meat | slow growth slow healing | impaired lymphocyte and PMN function | ↓duration of cold wound healing |
| Calcium (Ca) | proper function of: nervous system muscular system skeletal system | 1000 - 1300 mg | dairy products | osteoporosis tetany paresthesias cramps convulsions | not toxic | tx: deficiency |
INFECTIONOUS LESIONS

1. ANUG (Acute Necrotizing Ulcerative Gingivitis)
   Description:

   Tx:

2. Herpes Infections
   Description:

   Primary infection:

   Recurrent infection:

   Tx:

3. Candidiasis
   Description:

   Tx:

   Topical:

   Systemic:

4. Angular Chelitis / Chelosis
   Description:

   Tx:

5. Alveolar Osteitis
   Description:

   Tx:
IMMUNE REACTIONS
1. Recurrent Aphthous Stomatitis
   Description:

   Tx:

2. Lichen Planus
   Description:

   Tx:

MISCELLANEOUS ORAL CONDITIONS
1. Geographic Tongue (Benign Migratory Glossitis)
   Description:

   Tx:

2. Burning Mouth or Tongue
   Description:

   Tx:

INFLAMMATION
1. Pericoronitis:
   Description:

   Tx:

2. Postirradiation Caries
3. Root Sensitivity
   Description:

   Tx:

4. Actinic Lip Changes
   Description:

   Tx:

DRUG-INDUCED ORAL SIDE EFFECTS
1. Xerostomia
   Description:

   Tx:

2. Lichenoid-Like Lesions

3. Lupus-Like Lesions

4. Erythema Multiforme - Like

5. Stains

6. Gingival Enlargement (Gingival Hyperplasia)
   Drugs:
DRUGS USED TO TREAT ORAL LESIONS

Corticosteroids

Antiinfectives
   Antibiotics

Antifungals

Antivirals

Palliative Tx
   Topical local anesthetics

Systemic analgesics

DH 250

Hygiene-Related Oral Disorders Chapter 14

Dental Caries

Gingivitis

Tooth Hypersensitivity

Periodontal Disease 🤔🤔🤔🤔 screenings?