Osteoporosis is a condition in which the inside of the bones becomes porous and over time this decreases bone mass. The bones weaken and make them more likely to fracture. Osteoporosis is a silent disease that can begin early in life and progresses slowly over the years. All bones may become fragile, but the hip, spine, and wrist are most common. Osteoporosis can also change a person’s posture. As the spinal bones collapse, some people can no longer stand straight and they develop a hunched-over appearance.

Women are at greater risk than men. Their bones are lighter and smaller. Women typically consume less calcium-rich foods and often they eat less to control their weight. During menopause bone loss increases when estrogen levels decrease. Osteoporosis is preventable, yet one in two women is at risk of developing fractures caused by osteoporosis.

**For Bone Health and To Prevent Osteoporosis:**
1. Get enough calcium. See the below advice on recommended daily allowances.
2. Include a good intake of vitamin D, 800 IU daily, the amount found in most multivitamins (safe intake up to 2000 IU a day). Vitamin D helps the body absorb and use calcium. It also helps optimize bone mineralization, the strengthening of bones.
3. Quit smoking and avoid excess alcohol; both can cause calcium loss.
4. Do weight-bearing exercise (e.g., walking, jogging, dancing) and muscle strengthening exercises (e.g. lifting weights). This will strengthen bones and keep muscles strong to prevent falls.
5. Discuss the effects of other medications you take with your provider because some medications can increase your risk of osteoporosis or bone calcium loss.
6. If you are lactose intolerant, consider live culture yogurt, or calcium fortified food products that contain little to no lactose.
7. Avoid dieting.

**Bones and Age:**
It is **never** too early or too late to take care of your bones:

- **During adolescence:** Nearly half of all bone mass is formed during the teen years.
- **If you are in your 20's:** You are still in the prime bone-building years. You can continue to add bone tissue to make them denser and stronger by vigorous exercise. You can boost your daily deposits of calcium before peak bone mass is reached.
- **If you are 30-35:** You have reached your peak bone density and now you need to preserve it with exercise and optimal calcium intake. Both activities will help you maintain your bone density.
- **If you are 36-50:** Continue to exercise daily and take 1000 mg of calcium each day.
- **If you are over 50:** You need to start thinking about options to protect your bones and to slow bone loss. There is a sharp decline in the production of estrogen. This female hormone plays a role in preserving a positive calcium balance in our bones. Increase your daily calcium intake to 1200 mg.
**Recommended Daily Allowance for Calcium in Women**

<table>
<thead>
<tr>
<th>Age Range</th>
<th>Calcium Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ages 1 through 8</td>
<td>800 mg</td>
</tr>
<tr>
<td>Ages 9 through 18</td>
<td>1,300 mg</td>
</tr>
<tr>
<td>Ages 19 through 50</td>
<td>1,000 mg</td>
</tr>
<tr>
<td>Ages 51 through 64</td>
<td>1,200 mg</td>
</tr>
<tr>
<td>Ages 50 through 64 if not taking estrogen or over age 64</td>
<td>1,500 mg</td>
</tr>
<tr>
<td>Pregnant and lactating women</td>
<td>1,500 mg</td>
</tr>
<tr>
<td>Using Depo-Provera</td>
<td>1,200 mg</td>
</tr>
</tbody>
</table>

**Maximum Level of Calcium or Tolerable Upper Intake of Calcium**

2000 mg per day

**Calcium Supplements**

<table>
<thead>
<tr>
<th>Supplement</th>
<th>mg of calcium</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calcium Carbonate</td>
<td></td>
</tr>
<tr>
<td>Generic chewables</td>
<td>200 to 600</td>
</tr>
<tr>
<td>Caltrate 600</td>
<td>600</td>
</tr>
<tr>
<td>OsCal 500, chewable</td>
<td>500</td>
</tr>
<tr>
<td>Tums:</td>
<td></td>
</tr>
<tr>
<td>Regular Chewable</td>
<td>200</td>
</tr>
<tr>
<td>E-X Chewable</td>
<td>300</td>
</tr>
<tr>
<td>Ultra 500</td>
<td>500</td>
</tr>
<tr>
<td>Viactiv Chews</td>
<td>500</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Supplement</th>
<th>mg of calcium</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calcium Citrate</td>
<td></td>
</tr>
<tr>
<td>Citracal 950</td>
<td>200 (at CSHC)</td>
</tr>
<tr>
<td>Liquitab</td>
<td>500</td>
</tr>
<tr>
<td>Nutraverscent</td>
<td>500</td>
</tr>
</tbody>
</table>

**Note:** Calcium is best absorbed in divided doses and taken with food. Calcium supplements are not equivalent to food sources and calcium fortified foods are not equivalent to dairy products but they are still helpful.

**Recommended Resources**

SHS Advice Nurse – 530.752.9649
SHS Appointment Desk – 530.752.2349
Mayo Clinic – [www.mayo Clinic.com](http://www.mayoClinic.com)

*Adapted and revised with permission from “Bone Health/Calcium/Osteoporosis,” Seattle and King County, 2001.*
Where Do You Stand With Your Calcium Balance?

Count your daily calcium intake:

1. Take credit for calcium in your diet’s every day basic foods .................. 172 mg
2. Take extra credit for calcium-rich food you eat every day:
   - Milk, whole - 1 cup ........................................ 291 mg
   - Milk, 2% reduced fat - 1 cup ................................ 297 mg
   - Milk, 1% lowfat-1 cup ...................................... 313 mg
   - Milk, Skim fat free-1 cup .................................. 316 mg
   - Milk, chocolate - 1 cup ..................................... 280 mg
   - Soy Milk-calcium fortified-1cup .......................... 300 mg
   - Tofu 1/2 cup ...................................................... 150 mg
   - Orange Juice Ca-fortified- 1 cup ......................... 300 mg
   - Eggnog, commercial - 1 cup ............................... 330 mg
   - Yogurt – 1cup ..................................................... 343-415 mg
   - Monterey Jack Cheese 1/3 cup ............................ 300 mg
   - Cheddar cheese 1/3 cup .................................... 300 mg
   - Mozzarella cheese 1/3 cup ................................ 300 mg
   - Swiss cheese 1/3 cup ........................................ 300 mg
   - Parmesan cheese –1/4 cup .................................. 300 mg
   - Provolone cheese - 1 ounce .............................. 214 mg
   - Swiss cheese - 1 ounce ..................................... 272 mg
   - Cottage cheese- 1 cup ...................................... 150 mg
   - Almonds – 1/4 cup ............................................ 100 mg
   - Kale - 1 cup ...................................................... 206 mg
   - Collards - 1 cup ............................................... 357 mg
   - Sardines, canned - 3 ounces .............................. 372 mg
   - Blue cheese - 1 ounce ....................................... 150 mg
   - Broccoli - 1 stalk ............................................. 158 mg
   - Spinach - 1 cup ................................................ 167 mg
   - Ice cream, regular - 1 cup ................................. 176 mg
   - Ice cream, soft - 1 cup ...................................... 237 mg
   - Café latte- 12 oz ............................................... 412 mg
   - Café mocha- 12 oz .......................................... 337 mg
   - Cappuccino- 12 oz ............................................ 262 mg
   - Cheese Pizza 1 slice ........................................ 116 mg
   - Macaroni and cheese 1 cup ................................ 300 mg
   - Calcium fortified bread 1 slice .......................... 150 mg

YOUR TOTAL .....................................................

Add 1 and 2 to figure your daily calcium intake. If your calcium intake is over 1000 mg daily, congratulations! If it is under 1000 mg, you run the risk of putting your body in negative calcium balance.

To correct, either change your diet to include more calcium-rich foods or take a calcium supplement.

[Handouts: Bone Health] WCC 05/09