1. Good nutrition for healthy bones
   Â What do we need?
   Â How do we get it?

2. Dairy alternatives and bone health
   Â What are dairy alternatives?
   Â Why are they beneficial?

3. Incorporating dairy alternatives into a bone-health-smart diet

4. Q&A
Good nutrition for healthy bones
Canada’s Food Guide Recommendations

Recommended number of Food Guide servings per day:

<table>
<thead>
<tr>
<th></th>
<th>CHILDREN</th>
<th></th>
<th></th>
<th>TEENS</th>
<th></th>
<th></th>
<th>ADULTS</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2-3</td>
<td>4-8</td>
<td>9-13</td>
<td>14-18 Years</td>
<td>19-50 Years</td>
<td>51+ Years</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Girls and Boys</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vegetables and Fruit</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>7-8</td>
<td>8-10</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>Grain Products</td>
<td>3</td>
<td>4</td>
<td>6</td>
<td>6</td>
<td>7</td>
<td>6-7</td>
<td>8</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Milk and Alternatives</td>
<td>2</td>
<td>2</td>
<td>3-4</td>
<td>3-4</td>
<td>3-4</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Meat and Alternatives</td>
<td>1</td>
<td>1</td>
<td>1-2</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
</tbody>
</table>

The eating pattern also includes a small amount (30 to 45 mL or 2 to 3 tbsp) of unsaturated fat each day.
Calcium

- 99% of the body’s calcium is stored in the bones and teeth
- Calcium supports bone structure and function
- Our bones are constantly being remodelled – calcium is needed to form new bone

<table>
<thead>
<tr>
<th>Age</th>
<th>Daily requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 to 8</td>
<td>1,000 mg</td>
</tr>
<tr>
<td>9 to 18</td>
<td>1,300 mg</td>
</tr>
<tr>
<td>19 to 50*</td>
<td>1,000 mg</td>
</tr>
<tr>
<td>50+*</td>
<td>1,200 mg</td>
</tr>
<tr>
<td>Pregnant or lactating women 18+*</td>
<td>1,000 mg</td>
</tr>
</tbody>
</table>

*Osteoporosis Canada recommendations

If there is not enough calcium in our diet, the body takes calcium from bone.

When this happens, bones become more fragile.
Where do we get calcium in our diets?

Fortified non-dairy beverages, including fortified almond, soy, cashew and rice beverages

Dairy products such as cheese, yogurt, milk, ice cream, etc.

Fortified products such as orange juice, oatmeal, etc.

Dark green leafy vegetables, including broccoli, bok choy and kale

Sardines and canned salmon (with bones)

Tofu (with calcium sulfate)

Visit our website for a list of various calcium-rich foods: www.osteoporosis.ca/osteoporosis-and-you/nutrition/calcium-requirements
## Calcium in foods

<table>
<thead>
<tr>
<th>Food</th>
<th>Portion</th>
<th>Calcium</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fortified soy, almond, cashew and rice</td>
<td>1 cup (250 mL)</td>
<td>300 mg</td>
</tr>
<tr>
<td>beverages</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Milk, whole, 2%, 1%, skim, chocolate</td>
<td>1 cup(250 mL)</td>
<td>300 mg</td>
</tr>
<tr>
<td>Fortified orange juice</td>
<td>1 cup(250 mL)</td>
<td>300 mg</td>
</tr>
<tr>
<td>Yogurt</td>
<td>¾ cup (175 mL)</td>
<td>300 mg</td>
</tr>
<tr>
<td>Cheese</td>
<td>1.5oz (50 g)</td>
<td>300 mg</td>
</tr>
<tr>
<td>Salmon, canned, with bones</td>
<td>2.5oz (75 g)</td>
<td>200 mg</td>
</tr>
<tr>
<td>Tofu (calcium sulfate)</td>
<td>¾ cup (150 g)</td>
<td>250 mg</td>
</tr>
<tr>
<td>Almonds</td>
<td>¼ cup (60 mL)</td>
<td>100 mg</td>
</tr>
<tr>
<td>Broccoli</td>
<td>½ cup (125 mL)</td>
<td>20 mg</td>
</tr>
<tr>
<td>Kale</td>
<td>½ cup (125 mL)</td>
<td>50 mg</td>
</tr>
<tr>
<td>Cream cheese</td>
<td>1 tbsp (15 mL)</td>
<td>14 mg</td>
</tr>
</tbody>
</table>
Osteoporosis Canada strongly recommends obtaining calcium from food sources whenever possible.

It is important to eat a well-balanced diet made up of all four food groups in Canada’s Food Guide.

If your diet is giving you enough calcium, do not take extra in supplements.

Calculate the amount of calcium you are getting in your diet with the Calculate my Calcium tool online.
Calcium loss
Some foods can cause the body to lose calcium

Â Salt:
- Too much can cause calcium loss in urine. Reduce salt intake by:
  - Cooking with a only pinch of salt
  - Limiting use of prepackaged foods
  - Reducing amount of fast food eaten

Â Caffeine:
- Can contribute to calcium loss through the kidneys
- Limit caffeinated beverages to a maximum of 4 cups
- Above 4 cups, take extra calcium or substitute decaffeinated products
- Make your coffee beverage a latte or cappuccino to take advantage of milk/non-dairy beverage consumption

Â Oxalates: Found in some vegetable like spinach

Â Phytates: Found in whole grains, can interfere with absorption
Vitamin D

- Vitamin D helps to build stronger bones by increasing the absorption of calcium by **as much as 30%**
- Vitamin D also **improves the function of muscles**, which will improve balance and **help to prevent falls**
- There are few natural sources of vitamin D
- As we age, the skin’s ability to make vitamin D decreases

**Osteoporosis Canada recommends routine vitamin D supplementation year-round for all adults.**

<table>
<thead>
<tr>
<th>Age</th>
<th>Daily intake</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adults 19-50</td>
<td>400 - 1,000 IU</td>
</tr>
<tr>
<td>Adults 50+</td>
<td>800 - 2,000 IU</td>
</tr>
<tr>
<td>Adults with osteoporosis</td>
<td>800 - 2,000 IU</td>
</tr>
<tr>
<td>Pregnant or lactating</td>
<td>400 - 1,000 IU</td>
</tr>
<tr>
<td>women (18+)</td>
<td></td>
</tr>
</tbody>
</table>
Where do we get vitamin D in our diets?

Foods that contain vitamin D include:

- Fortified non-dairy beverages, including fortified almond, soy, cashew and rice beverages
- Dairy products
- Mushrooms exposed to UV light
- Fish oils
- Eggs
- Salmon and sardines
- Chicken livers
- Margarine
Dairy alternatives and bone health
What are dairy alternatives?

If dairy products are not a regular part of your diet due to sensitivities or dietary preferences, there are other alternative food sources that are high in calcium. These include:

- Fortified non-dairy beverages, including soy, almond, cashew and rice beverages (check nutrition labels)
- Calcium-fortified orange juice (check nutrition labels)
- Canned salmon or canned sardines (eaten with bones)
What are fortified non-dairy beverages?

- Non-dairy beverages that are “fortified” or “enriched” have added vitamins and minerals, such as calcium and vitamin D.

- Some of the most popular types of fortified non-dairy beverages are soy, almond, cashew and rice.

- Fortified soy beverages are classified as part of the Milk and Alternatives food group on Canada’s Food Guide.
Are fortified non-dairy beverages comparable to dairy milk?

- Calcium from dairy milk is 35% bioavailable. Calcium from soy beverages is 25% bioavailable.

- Soy beverages are the most nutritionally equivalent to milk.

- Fortified non-dairy beverages contain more vitamin B12 than dairy milk (50% daily value vs. 20% daily value).

- Most non-dairy beverages are slightly lower in sodium (by 10-20 mg per serving), all are low in saturated fats and contain more unsaturated fats than milk.
Are fortified non-dairy beverages comparable to dairy milk?

Non-dairy beverages are fortified with vitamin D2 from plant origin rather than D3 which is from animal origin.

Soy beverages contain more magnesium at 15% daily value vs. 6%.

The protein content varies between beverages with milk at 9 g, soy at 6 g, almond at 1 g and rice at 0 g per serving.

Unsweetened almond beverages are significantly lower in carbohydrates.

All non-dairy beverages are lactose-free and cholesterol-free.
All about fortified soy beverages

- Creamy and rich with a slight beany taste
- Excellent source of calcium, vitamin D and protein
- Soy protein is a complete protein containing all essential amino acids
- Can contribute to heart health by helping to improve vascular function and control blood pressure
- Source of 14 essential nutrients as a nutritionally adequate alternative to milk
- 25 g of soy protein per day helps lower LDL cholesterol, making it heart healthy
- Soy isoflavones help improve calcium absorption, improve the health of arteries and may help prevent breast and prostate cancer
- Source of magnesium – 15% of daily value
All about fortified almond beverages

- A real nutty taste
- Lower in calories than 2% milk*
- Low fat
- Excellent source of calcium and vitamin D
- Source of Vitamin E, a dietary antioxidant
- Source of 9 essential nutrients
- Source of unsaturated fats

*Per 250 mL serving: Unsweetened, Unsweetened Vanilla, Original, Vanilla and Coconut almond varieties, 30-80 calories; 2% partly skimmed milk, 130 calories; 1% partly skimmed milk, 110 calories. Chocolate almond, 110 calories; 2% partly skimmed chocolate milk, 200 calories; 7% partly skimmed chocolate milk, 170 calories. Milk data from Canadian Nutrient File, 2012.
All about fortified cashew beverages

Â Creamy and naturally salty. If you love cashews, you’ll love cashew beverages
Â Lower in calories than 2% milk*
Â Low in fat helping to maintain healthy body weight
Â Source of 8 essential nutrients
Â Source of magnesium, a factor in energy metabolism, tissue formation and bone development
Â Source of zinc, a factor in energy metabolism and tissue formation

*Per 250 mL serving: Unsweetened and Original cashew varieties, 30-50 calories; 2% partly skimmed milk, 130 calories. Milk data from Canadian Nutrient File, 2012.
All about fortified rice beverages

- Light, refreshing taste with a hint of natural sweetness
- Low in fat
- Excellent source of calcium, vitamin D and vitamin B12
- No sugar added
- Source of 7 or more essential nutrients
- Some rice beverages offer a serving of whole grains
Incorporating fortified dairy alternatives into a bone-health-smart diet
Benefits of fortified non-dairy beverages

- Each type of beverage can be incorporated into a healthy diet in a variety of different ways, depending on your needs and preferences (examples to follow)
- Easy to find in the refrigerated section of grocery stores, usually near the dairy case. Some are also available in shelf-stable formats for convenience
- Versatile
- All can be heated
- Most are interchangeable with milk in a 1:1 ratio in recipes
- Some may add different flavours to dishes when cooking
- Soy creamers are available for coffee to prevent separation
Usage tips

**Soy:**
- By the glass
- Coffee and lattes
- Sauces and soups
- Ideal for vegan and vegetarian diets
- Blended in smoothies
- On cereal
- Replace dairy milk 1:1 in recipes

**Almond:**
- By the glass
- On cereal
- Blended in smoothies
- Baking
- Creamy soups and side dishes
Usage tips

**Cashew:**
- By the glass
- On cereal
- Blended in smoothies
- Baking
- Creamy soups and side dishes

**Rice:**
- By the glass
- On cereal
- Baking and cooking sweet dishes
- Ideal for allergen-free cooking
Evaluation

www.surveymonkey.com/s/earthsown
To get your Earth’s Own recipe booklet with coupons, visit:

www.earthsown.com/booklet
Questions?