



Nutrition and Bone Health

Lesson 3: Calcium-fortified Foods

Getting Started

1. Review lesson plan before each session.
2. Copy handouts and post-test questions:
 - a. Activity - Food Names
 - b. Calcium-fortified Foods
 - c. Regular Orange Juice Nutrition Facts
 - d. Tropicana Pure Premium® Calcium Orange Juice Nutrition Facts
 - e. Lesson 3: Calcium-fortified Foods Post-test
 - f. Lesson on Exercise (must download separately as an individual lesson from NOAHhnet Osteoporosis lesson plans)
3. Gather supplies needed for lesson and activities.

Supplies Needed

1. Yellow poster board (any bright, colorful poster board will work).
2. Tape and scissors.
3. One carton or can of frozen concentrate calcium-fortified orange juice - cover label or pour into another container.
4. One carton or can of frozen concentrate regular orange juice - cover label or pour into another container.
5. Five sets of small cups for sampling orange juice - they need to be different in some way to distinguish between the fortified juice and regular juice (recommend 3 ounce cups, such as Dixie® cups or similar cups).
6. Two pitchers - one for regular juice and one for fortified juice.
7. Empty boxes of calcium-fortified foods to show as examples (cereals, cereal bars, oatmeal, yogurt cups, etc.).

Beginning the Lesson

1. Introduce yourself by name and the organization you represent.
2. Summarize the lesson by reading the objectives.
3. Let the group know the lesson will be informal and they can ask questions anytime.

Objectives – The participants will:

1. Learn the difference between calcium-fortified foods and foods that naturally supply calcium.
2. Understand how to read food labels for calcium.
3. Be given a handout of high calcium sources and good calcium sources.



Script

Introduction

We have been talking about how important calcium rich foods are for strong bones and healthy bodies. Let's review what we have learned thus far. Can someone tell me the name of the disease known as the "silent killer"? (*Osteoporosis*) What does this disease do to your bones? (*It makes them brittle and easy to break or fracture*). That's right! You're doing good so far; keep it up! We also learned four things to do to protect your bones. Can any of you name these? They are:

1. Talk to your doctor. Have any of you talked to your doctor about your medicines, family history of osteoporosis, having a bone mineral density test, exercise, smoking or alcohol?
2. Take calcium and vitamin D. Today we are going to talk about how to choose fortified foods that supply these two important nutrients.
3. Take action. This reminds us to stay active. We can stay active by doing exercises such as walking, dancing, gardening and lifting weights. We'll practice some exercises today, too.
4. Take care. This means preventing falls, and avoiding tripping or slipping. We will talk more about this in another session.

Last time we talked about calcium-rich foods, such as dairy foods, that help us get the calcium and vitamin D we need. We also found out that many older adults don't get all the calcium and vitamin D they need from dairy foods, leafy greens and fish. So if this describes you, you might want choose calcium-fortified foods to help get the calcium you need.

Fortified Foods

Today we will be talking about calcium-fortified foods. Can anyone tell me what calcium-fortified means (*wait for response*)? Great! Calcium-fortified means calcium has been added to a food that does not normally have calcium, **or** a larger amount of calcium has been added to a food to make it more nutritious. Today we will look at some products that are calcium-fortified.

Calcium-Fortified Foods

(*Refer participants to "Calcium-fortified Foods Handout."*) Here is a handout with some calcium-fortified foods. One of the best calcium-fortified foods is calcium-fortified orange juice. It supplies as much calcium as a cup of milk and it has other important nutrients such as vitamin C, folic acid and healthy phytochemicals. Can someone tell me what phytochemicals are (*allow*



the participants to comment)? Phytochemicals give fruits and vegetables their bright colors. They also work with vitamins and minerals to keep your body healthy. So remember calcium-fortified orange juice is easy to drink with breakfast or as a snack, is filled with nutrients and usually costs the same as regular orange juice!

There are many other calcium-fortified foods such as cereals and snack foods. However, compared to orange juice they may be more expensive (such as the snack foods), have too much calcium in one serving (such as some cereals with 100% of the Daily Value), or have little other nutritional value (such as sweets or other junk food).

Percent Daily Value for Calcium (% DV)

Read labels carefully when you are shopping for calcium-fortified foods. Let's learn how to read labels for calcium. On food labels, calcium is shown as a percentage of the Daily Value (% DV) for calcium. The % DV for calcium is based on 1000 mg. That means 100% equals 1,000 mg of calcium. Look at your handout that is titled **Tropicana Pure Premium Calcium® Orange Juice** and find where it says “% Daily Value of Calcium / Pure Premium Calcium.” The label uses % DV to show the amount of calcium a food supplies based on the reference value of 1,000 mg calcium daily for most adults. We haven't talked about % DV before so let's look at this handout and go over it.

First, can anyone remember how much calcium adults age 51 and older need everyday (*1,200 mg*)? Very good! Remember, older adults need more calcium than younger adults because your bones are more likely to break as you get older. From looking at your handout, what % DV for calcium does the “Pure Premium Calcium” supply (*35%*)? Right! An easy way to change **% DV of calcium** to **milligrams of calcium** is to take away the % sign and add one zero. (*Note - this only works for calcium!*) By looking at the same handout, can anyone tell me how many milligrams of calcium one serving of this orange juice has (*350 mg*)? Great! If you drank one serving of this orange juice at breakfast you could subtract 350 mg of calcium from your daily total of 1,200 mg - 350 down and 850 more to go!

Now look at your other handout titled **Regular Orange Juice** and find where it says “% Daily Value of calcium / Regular Orange Juice.” How many milligrams of calcium does the regular orange juice supply (*20 mg*)? There is about 15 times more calcium in the calcium-fortified juice than in the regular orange juice.

What kind of orange juice do you think is best for your bones? (*calcium-fortified OJ*) Let's have a taste test to see if you can tell the difference between calcium-fortified orange juice and regular orange juice. (*Before giving each participant an opportunity to taste the juices, ask if anyone is*



allergic to orange juice. Pour each participant two small cups, one with calcium-fortified juice and one with regular juice. After everyone has tasted his or her sample identify which was which. Remind them that calcium-fortified juice usually does not cost more than regular orange juice and that frozen concentrated calcium-fortified orange juice may be the least expensive option. Also, when particular brands are on sale, all products with that brand name are often on sale, making the calcium-rich product the same price as the regular orange juice.)

Note to speaker: Some national brands of calcium-fortified orange juice are now also fortified with vitamin D. Tropicana® and Minute Maid® are two brands that supply 100 IU of vitamin D in an eight ounce (one cup) serving of calcium-fortified orange juice. This is the same amount supplied in eight ounces (one cup) of milk.

Calcium Sources

Let's look at three different groups of calcium-containing foods. The Food and Drug Administration (FDA) made these groups to control how calcium products could be labeled and sold.

1. *High calcium foods* or *foods rich in calcium* - contain 200 mg (20% DV) or more of calcium per serving.
2. *Good source of calcium* foods - contain 100 to 199 mg (10 to 19% DV) calcium per serving.
3. *Other calcium* containing foods - contain less than 100 mg (<10% DV) calcium per serving.

Let's look on your handout to see which calcium-fortified food fits in each group.

Activity

To remember what we learned about calcium-fortified foods we are going to play a game. I'm passing out names of different foods. I want you and a partner (this can also be done as a group effort) to decide if the food **could be** a calcium-fortified food or if it is **naturally high in calcium**. When you and your partner agree, raise your hand and tell me what group your food belongs in and I will tape your food under the correct heading on our poster board.

Always remember to read food labels closely when deciding whether a food is a calcium-fortified food or not. For example, not ALL waffles are calcium-fortified and not ALL types of V-8® juice are calcium-fortified. Look for 'Calcium' written on the container if you want a calcium-fortified food. *(Please continue to remind the participants of this throughout the game and when reading over the "Calcium-fortified Foods" handout.)*



Answer key:

Calcium-fortified foods: graham crackers, waffles, V-8[®] juice and cereal

Foods naturally high in calcium: yogurt, milk, cheese, ice cream, salmon with bones and sardines

Have a great day and remember to choose foods high in calcium!

Let's take action by practicing balance exercises.

(Refer to the handout "Lesson on Exercise")

References

Strategies for Osteoporosis. National Osteoporosis Foundation.

http://www.nof.org/prevention/strategies_calcium.htm.

National Institutes of Health. Office of Dietary Supplements. Dietary Supplement Fact Sheet: Calcium. <http://ods.od.nih.gov/factsheets/calcium.asp#h3>.

Martini, Ligia and Richard J Wood. "Relative bioavailability of calcium-rich dietary sources in the elderly." American Journal of Clinical Nutrition Dec 2002; 76: 1345 - 1350.

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The Food Stamp Program provides nutrition assistance to people with low income. It can help buy nutritious foods for a better diet. To find out more, contact your local food stamp office, food bank, or senior center.

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Activity - Food Names

Calcium-rich food

Calcium-fortified food

- **Graham crackers**
- **Yogurt**
- **Milk**
- **Waffles**



- **Cheese**
- **Ice cream**
- **V-8[®] juice**
- **Salmon with bones**
- **Cereal**
- **Sardines**



Calcium-fortified Foods

Calcium-Rich Foods

| | <u>% of DV</u> | <u>milligrams of Calcium</u> |
|-------------------------------------|----------------|------------------------------|
| 1 cup Minute Maid® OJ with Calcium | 30% | 300 mg |
| 1 cup Sunny Delight® with Calcium | 30% | 300 mg |
| 1 cup Tropicana® OJ with Calcium | 35% | 350 mg |
| 1 Kellogg's Nutri-Grain® cereal bar | 20% | 200 mg |
| 2 Kellogg's Eggo® frozen waffles | 30% | 300 mg |
| 1 cup Total® cereal | 100% | 1000 mg |
| 1 cup Harmony® cereal | 60% | 600 mg |
| 1 cup V-8® juice with added calcium | 30% | 300 mg |

Foods that are Good Calcium Sources

| | | |
|------------------------------------|-----|--------|
| 1/2 cup Kellogg's All Bran® cereal | 15% | 150 mg |
| 8 Honey® Maid Graham Crackers | 15% | 150 mg |
| 1 cup Cheerios® cereal | 10% | 100 mg |
| 1 cup Chex® cereals | 10% | 100 mg |



Regular Orange Juice

Nutrition Facts

| | |
|------------------------|------------------|
| Serving Size | 8 fl oz (240 mL) |
| Servings per Container | 8 |

Amount
Per Serving

| | |
|-------------------|-----|
| Calories | 110 |
| Calories from Fat | 0 |

% Daily Value of
calcium

| | |
|----------------------|----|
| Regular orange juice | 2% |
|----------------------|----|



Tropicana Pure Premium Calcium[®] Orange Juice

Nutrition Facts

| | |
|------------------------|------------------|
| Serving Size | 8 fl oz (240 mL) |
| Servings per Container | 8 |

Amount
Per Serving

| | |
|-------------------|-----|
| Calories | 110 |
| Calories from Fat | 0 |

| | |
|-----------------------------|-----|
| % Daily Value of calcium | |
| Pure Premium Calcium | 35% |



Lesson 3: Calcium-fortified Foods Post-test

| | |
|---------|-------|
| Date: | Name: |
| County: | Age: |

Please circle your answers.

Circle

- | | | |
|---|-----------|------------|
| 1. I drink calcium-fortified orange juice at least three times each week. | No | Yes |
| 2. I drink other juices fortified with calcium at least three times each week. | No | Yes |
| 3. I eat a cereal fortified with calcium at least three times each week. | No | Yes |
| 4. I plan to try a calcium-fortified food or juice in the next month. | No | Yes |
| 5. I learned something new from this lesson. | No | Yes |