



VITAMIN D -
MORE THAN JUST THE SUNSHINE
VITAMIN
A NUTRITION IN-SERVICE FOR STAFF

“Those who bring sunshine into the lives of others
cannot keep it from themselves.”
~ James M. Barrie



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A lesson on the health benefits of vitamin D intake and WIC clients who may be more at risk for vitamin D deficiency.

- Who:** Participants: WIC Staff, range of 2-15 participants with a varying degree of maternal, infant and child nutrition knowledge and WIC experience.
Leader: WIC RD/Nutritionist
- Why:** There are many health issues associated with inadequate vitamin D levels. By identifying vitamin D sources, WIC staff can assist clients in improving their own vitamin D intake.
- When:** A monthly in-service that is designed to be 30 to 60 minutes - depending on the discussion and the number of staff attending.
- Where:** The session was designed for a WIC classroom, meeting room or large office depending on the size of the group.
- What:** By the end of this session staff will have:
- Identified vitamin D sources and vitamin D content of food.
 - Analyzed personal vitamin D intake.
 - Examined health issues associated with deficient vitamin D levels.
 - Reviewed vitamin D recommendations.
 - Reviewed the WIC risk associated with vitamin D.
 - Practiced Ask, Provide, Ask to discuss the importance of vitamin D.
- Materials Needed:** Copies of:
- Vitamin D In-service *Participant Copy*
 - Vitamin D In-service *Feedback Form*
 - Vitamin D Content of Food (Best Sources)
 - Vitamin D Scenarios (enough cut out for all staff pairs to have one scenario)
- Optional Activity:
Food products or labels showing vitamin D content (see suggestions)

Background Please review before leading group:

Reading for Leaders:

- Washington State WIC Manual, Volume 1, Chapter 14 - Nutrition Risk Criteria - Inadequate Vitamin and Mineral Supplementation

For further review and consult:

- <http://www.nal.usda.gov/wicworks>: Select WIC Topics A-Z, Select Topic; Vitamins and Minerals; University of Florida Extension: "Facts about Vitamin D"
- <http://www.meritcare.com>: Search "Cathy Breedon", Select MeritCare/Cathy Breedon: Handouts from Workshops; "Vitamin D : It's Not Just for Bones Anymore"
- <http://www.ajcn.org>. Search in Keywords for: "Vitamin D: importance in the prevention of cancers, type 1 diabetes, heart disease, and osteoporosis; 2004;79:362-71"

How:

- Schedule in-service.
- Review background information.
- Review in-service *Leader Copy* (*italicized print indicates leader speaking*).
- Prepare materials needed.
- Have fun!

Introduction/Warm-Up**1 minute**

Welcome! I will be the leader for this month's nutrition training. I encourage all of you to participate. Together we can explore our topic and discover strategies to support our WIC clients.

By the end of this session you will have:

- *Identified vitamin D sources and vitamin D content of food.*
- *Analyzed personal vitamin D intake.*
- *Examined health issues associated with deficient vitamin D levels.*
- *Reviewed vitamin D recommendations.*
- *Reviewed the WIC risk associated with vitamin D.*
- *Practiced Ask, Provide, Ask to discuss the importance of vitamin D.*

Part 1**2 minutes****Vitamin D and sunshine**

Why is vitamin D called the "sunshine" vitamin?

Hear responses.

Who would like to read the following regarding sunlight and vitamin D?

The major source of vitamin D is exposure to direct sunlight; our bodies make vitamin D in the skin. The following situations may result in too little vitamin D production.

- Clothing blocks sunlight – A particular concern for cultural/religious groups that wear clothes and scarves that cover nearly all the skin.
- Living in the northern part of the country – There is an inadequate angle of light rays from November through February to produce optimal amounts of vitamin D at latitudes above 42 degrees (that includes Washington State).
- Spending little or no time outside - Hot climate or unsafe neighborhood.
- Skin color – Melanin is a filter that decreases absorption of UV light. Dark skin makes less vitamin D with the same amount of light exposure.
- Aging skin – Elderly people have a decreased ability to produce vitamin D.
- Use of sunscreens – Sunscreens block UV light so they interfere with vitamin D absorption.

What stands out to you about this information regarding sunlight and vitamin D?

Part 2**8 minutes****Determining your own intake**

In pairs, write down as many food sources of vitamin D that you can think of.

Call group back. Distribute handout: **Vitamin D Content of Foods (Best Sources)**.

Did anyone come up with all the best sources?

What stands out to you about the list?

Responses may include:

How few foods contain vitamin D

Not found in all dairy foods – only those fortified

No consistency of fortification in categories: orange juice, yogurt and cereal

Now let's take a look at the levels of vitamin D associated with each item. Think about what you ate yesterday.

Using the values listed on the handout; determine the amount of vitamin D in your diet for this one day from food sources.

Allow time for participants to add up their values.

Who would like to share what they found surprising about their own intake?

Part 3**5 minutes****Recommended intake**

Review the following regarding recommended levels of Vitamin D.

In 2003 the American Academy of Pediatrics issued the following recommendation regarding vitamin D supplementation:

“It is recommended that all infants, including those who are exclusively breastfed, have a minimum intake of 200 International Units (IU) of vitamin D per day beginning during the first 2 months of life. In addition, it is recommended that an intake of 200 IU of vitamin D per day be continued throughout childhood and adolescence.”

Current Recommended Daily Allowance's (RDA's)	RDA
Infants (0 to 12 months)	200 IU
Children and Adults (9 yr – 50 yr)	200 IU
Adults (50 – 70 yr)	400 IU
Adults (> 70 yr)	600-800 IU

There has been recent research that indicates a higher RDA for vitamin D is needed. Researchers at Boston University indicated that “The recommended adequate intakes for vitamin D are inadequate, and in the absence of exposure to adequate sunlight, a minimum of 1000 International Units (IU) of vitamin D is required to maintain a healthy concentration (of hydroxyl vitamin D) in the blood.”

For most adults, 400 IU has been the dietary goal for people with “average” sun exposure. For people with little sun exposure or those living in the north, the intake goal is 800-1000 IU/day. Note: 1 cup of fortified milk or soy beverage provides about 100 IU of vitamin D.

What questions do you have about the recommended vitamin D intake?

Which Washington State WIC nutrition risks pertain to vitamin D intake?

Inadequate Vitamin / Mineral Supplementation

- Breastfed infants who are ingesting less than 500 mL (16.9 ounces) per day of vitamin D fortified formula and are not taking a supplement of 200 IU of vitamin D. (Note: Inadequate vitamin D content in breastmilk is due to inadequate levels in mothers, not due to breastmilk being inherently inadequate).
- Non-breastfed infants who are ingesting less than 500 mL (16.9 ounces) of vitamin D fortified formula and are not taking a supplement of 200 IU of vitamin D.

Part 4

5 minutes

Health issues and vitamin D deficiency

Please listen as we read the following information about potential health issues associated with deficient vitamin D levels. Circle what you find most interesting.

It is well known that vitamin D is needed for normal absorption of calcium and phosphorus. It also helps put these minerals into bones and teeth, making them stronger. Vitamin D is important for preventing rickets (a bone deformity disease) in infants and children.

But in recent years, research has documented the potential roles for vitamin D in the prevention or progression of conditions such as:

- Arthritis: osteo and rheumatoid
- Cancer (prostate, colon, breast and pancreas)
- Diabetes
- Osteoporosis
- Heart Disease
- Lupus and Fibromyalgia
- Inflammatory Bowel Disease

- Multiple Sclerosis
- Pregnancy Issues:
 - Impaired fetal development
 - Pregnancy Induced Hypertension

Additionally, the use of certain medications has been shown to increase the need for vitamin D. Included in this group are seizure control medications such as Tegretol and Dilantin. Medical conditions that result in poor absorption of nutrients (cystic fibrosis, inflammatory bowel disease, and celiac disease) also increase the need for vitamin D.

Who would like to share what they circled?

Part 5**10 minutes****Practice Using Ask, Provide, Ask**

Use Ask, Provide, Ask.

Ask...Ask what the client knows, or would like to know

Provide...Offer information in a neutral, nonjudgmental manner

Ask...Ask about the client's thoughts, feelings, and reactions

Now let's practice using Ask, Provide, Ask.

Divide up into groups of two or three. Distribute a scenario card to each group.

Decide who will be the client and who will be the WIC staff.

Share the scenario with your group. Role-play the scenario on the cards.

Practice using Ask, Provide, Ask. You have five minutes.

After 5 minutes, call the group back.

What part of this activity will be most useful in your work with clients?

What will you do when you get back to your desk to help you implement this information?

Closing**1 minute**

Thanks for participating today. We heard some great discussion and ideas that will help us to better serve our WIC clients.

Please fill out a Feedback Form – your input is greatly appreciated.

Collect Feedback Forms.

Make any notes you have as a leader.

Review participants' Feedback Forms.

Document this training.

Optional Activity (May be most effective when done between Part 2 and Part 3)

Set out products or labels from products supplemented with vitamin D*.

In groups of two to three, review the labels of these products. Identify how much vitamin D is in the product. What are your thoughts about these products as sources of vitamin D?

Allow time for discussion.

Call group back and hear their thoughts.

***Ideas for obtaining products for review:**

- Check to see if there is money available in WIC budget to purchase samples.
- Prior to training ask participants to check at home to see if they have any vitamin D fortified foods and would be willing to bring in the containers.
- Obtain photos and label information from web sites.
- Gather label information from products at grocery store.

Potential Products:

Yoplait yogurt

Other yogurts (check labels)

Yogurt Smoothies (check labels)

Orange Juice (check labels)

Cereal (check labels)

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Learning Objectives

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Part 1

Vitamin D and sunshine

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Part 2

Determining your own intake

In pairs, write down as many food sources of vitamin D you can think of.

Using the values listed on the handout, **Vitamin D Content of Foods (Best Sources)**; determine the amount of vitamin D in your diet for this one day from food sources. We will hear some of your results.

Part 3

Recommended intake

Review the following regarding recommended levels of vitamin D:

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Closing

Thanks for participating today.

Please fill out a Feedback Form - your input is greatly appreciated.

Vitamin D Content of Foods (Best Sources):

Food	Serving Size	Average IU of Vitamin D
Egg Yolk	1 yolk	27
Liver (beef or chicken)	3 oz.	42
Some Fortified Cereals (check label)	1 cup	40-60
Vitamin D fortified Milk	1 cup	100
Some Fortified Yogurts (check label)	1 cup	100
Some Fortified Orange Juice	1 cup	100
Shrimp	3 oz.	127
Tuna	3 oz.	150
Salmon	3 oz.	340
Multi-vitamin and Mineral Supplement	1 tablet	400 Amount varies, check label

Vitamin D Scenarios

(Copy and cut out)

Sally is a client who has come to the clinic with her two year old very bundled up for the cold weather; Sally states he doesn't drink much milk, but likes it on cereal in the morning.

Alonza is talking to you and mentions her family lives in an upstairs apartment; getting outside to play is not always easy with 3 young children. She states she doesn't buy all her WIC milk since they just don't use it.

Georgia states she was recently diagnosed with lactose intolerance and doesn't like to drink milk.

Cecilia is a postpartum client & when discussing her new weight loss plan, mentions she is only drinking about one cup of milk per day.

It is a typical cloudy, gray day and Seraphina, a breastfeeding mom, states she doesn't like to drink milk, but really likes cheese, ice-cream and yogurt.

Angie is talking to you on a sunny, summer day and states she is very careful about using sunscreen on her children. They drink more juice than milk when it is hot outside.

You see a Lila with her new, fully breastfed baby. Lila is not certain about giving her baby a supplement and she can't seem to remember to take her own either.

Jason, a single father, mentions that his children prefer yogurt and cheese and so he is not concerned when they don't drink their milk.

