

THIS MONTHS TOPIC IS...VITAMIN D!

EVERYTHING YOU NEED TO KNOW ABOUT THIS UNIQUE NUTRIENT

WHY VITAMIN D??

New research shows that vitamin D can help prevent a wide range of diseases including colon, breast, prostate and pancreatic cancers, diabetes, Crohn's disease, rheumatoid arthritis, osteoporosis, multiple sclerosis, inflammatory bowel disease, ulcerative colitis, asthma, lupus and more! The current daily recommended amount may even be increased from 200-600 IU all the way to 1000-2000 IU per day! Keep reading to learn more about this VERY important vitamin!

First of all...what is vitamin D?

Vitamin D is a fat soluble vitamin, which means that it needs fat to be absorbed! Vitamin D is unique because not only is it found in some foods, but it can be produced by our bodies when our skin is exposed to sunlight. That is pretty amazing! There are a few different forms of vitamin D, and our kidneys and liver help to convert the vitamin D into a form that our body can use, or an active form.

How much vitamin D do we need in one day?

As we age, it becomes harder for our skin to make vitamin D. Therefore, as we age, we need more vitamin D. Below is a quick breakdown of the numbers... (the IU means international units)

Currently the daily recommendations are as follows.....

Pregnancy: 200 IU

Birth to age 50: 200 IU

Ages 50-70: 400 IU

Ages 71+ 600 IU

(Both men and women)

But because of new research, the recommended amount could increase to between 1000-2000 IU per day!!



What are food sources of vitamin D?

Cod liver oil, 1 tablespoon: 1360 IU

Salmon, cooked, 3.5 oz: 360 IU

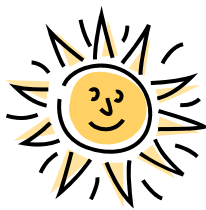
Tuna, canned, 3.5 oz: 200 IU

Milk, 1 cup: 98 IU

Fortified cereals, $\frac{1}{2}$ cup: 40 IU

Fortified orange juice (varies)

Fortified yogurt (varies)



TIPS!



- Eat more vitamin D fortified products such as milk, orange juice and yogurt, especially during the winter months.
- Some dairy products are not fortified...ice creams and cheese may not contain vitamin D, so check nutrition labels!
- Spend 10-15 minutes outside daily or at least 2 times per week with face, arms, legs or back exposed to sun (without sunscreen).
- Talk to a health professional if you believe that you are at risk for deficiency and may benefit from taking vitamin D supplements.

- Exercise and walk outdoors during the spring, summer and fall months.

Are you consuming enough vitamin D? Who is at risk for insufficiency?

- **Breastfed infants:** Human milk alone cannot meet the infant's daily requirement of vitamin D. Breast milk provides 25 IU per liter, however the recommended amount is 200 IU per day. Breastfed infants should receive a supplement of 200 IU daily to avoid deficiency. Without enough vitamin D, the baby's bones may not be able to form properly, causing weak bones and a disease called rickets. Infant formulas are fortified with vitamin D due to the 1980 Infant Formula Act. Infants consuming formula do not need supplementation.

- **Older adults:** As we age, our skin does not make vitamin D as efficiently. Research shows that up to 90% of older adults have vitamin D insufficiency. Other factors include decreased consumption of dairy products, possibly due to lactose intolerance, and limited sun exposure.



- **Limited sun exposure:** We can obtain vitamin D through sunlight, so individuals with limited sunlight exposure are at risk. The homebound and sick, individuals in facilities such as nursing homes and those who wear robes or head coverings for religious reasons are all at risk for vitamin D deficiency.

- **Skin color:** The darker a person's skin, the harder it is for the skin to produce vitamin D after sun exposure. It is recommended that

African Americans and other individuals with darker skin consume adequate vitamin D through their diet or talk to a health professional about supplementation.



- **Fat malabsorption:** Vitamin D is a fat soluble vitamin and therefore needs fat to be absorbed. Patients with conditions such as pancreatic enzyme deficiency, Crohn's disease, cystic fibrosis, celiac sprue and liver disease are all at risk for fat malabsorption and therefore vitamin D deficiency.

RECENT RESEARCH

What is new?

What researchers are discovering about vitamin D and its possible benefits

Vitamin D and cancer

Vitamin D insufficiency has been linked with several different types of cancers including breast, prostate, pancreatic and colon cancers. Vitamin D is important in the regulation of cell growth, cell function and cell death, all of which are involved in the progression of cancer. In one study about prostate cancer and vitamin D, it was found that a sufficient amount of vitamin D in the prostate is associated with decreased cell growth and therefore decreased cancer. Extremely high amounts of vitamin D are not good either, as excessive amounts of vitamin D may also cause prostate cancer. In another study about pancreatic cancer, results showed a 41% increased risk of this cancer in people who consumed less than 150 IU of Vitamin D per day.

Vitamin D and Multiple Sclerosis (MS)

The chance of developing multiple sclerosis depends on where a person lives on this planet. Incidence is lower in tropical regions closer to the equator and increases with distance from the equator. This suggests that vitamin D received from sunlight may have an impact on whether or not a person develops multiple sclerosis. In a study about women and MS, it was found that women who took vitamin supplements that contained vitamin D had a 40% lower risk of developing the disease than women who did not take supplements with vitamin D. For women who already had MS, the progression of the disease was slowed when vitamin D was added. When supplementation was stopped, the symptoms often got worse.



Vitamin D and osteoporosis

Vitamin D plays an important role in bone health because it helps absorb calcium into the bones. It is especially important for older adults to consume the recommended amount of vitamin D since the ability to produce

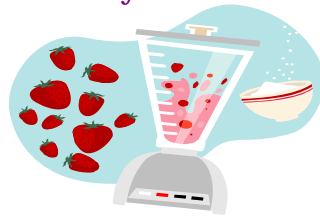
vitamin D following sun exposure decreases as a person ages. When there is not enough vitamin D, calcium is pulled out of the bones to maintain adequate levels in the blood. This makes the bones weak and brittle, causing an increased risk of osteoporosis. In one study, 64% of postmenopausal women with osteoporosis had inadequate vitamin D levels. Younger women and men also need adequate vitamin D to help slow the progression of bone loss, and in turn, osteoporosis.

Immune Function and Vitamin D

Vitamin D may also be associated with regulating our body's immune system. Vitamin D deficiency is linked with autoimmune diseases such as Inflammatory Bowel Disease, asthma, ulcerative colitis, Crohn's disease, rheumatoid arthritis, lupus and type 1 diabetes. Although more research is needed, vitamin D can act like an immunosuppressive hormone, and therefore can decrease inflammation that occurs in the body. Calcium may also be involved in the regulation of the immune system...another great reason to keep consuming those dairy products rich in both calcium and vitamin D!

FRUIT SMOOTHIE RECIPES

Here are a few smoothie recipes to try...keep in mind that 1 cup of milk provides 100 IU of the vitamin D, 6 oz of **fortified** yogurt provides 80 IU and **fortified** orange juice (calcium plus vitamin D) provides 100 IU of vitamin D in 1 cup. Make sure you read the nutrition labels! Enjoy!

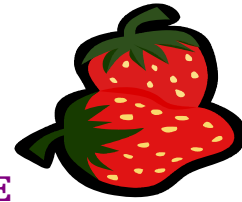


RASPBERRY SMOOTHIE

1 cup milk
½ cup raspberry yogurt
1 cup raspberries
honey to taste

ORANGE BANANA SMOOTHIE

1 cup orange juice
½ cup vanilla yogurt
½ cup frozen banana slices



STRAWBERRY-BANANA SMOOTHIE

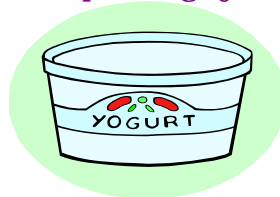
1 banana
1 cup skim milk
1 cup yogurt (strawberry or banana)
4 large strawberries

TRIPLE BERRY SMOOTHIE

$\frac{1}{2}$ cup strawberries
 $\frac{1}{2}$ cup blueberries
 $\frac{1}{2}$ cup raspberries
1 banana
 $\frac{1}{2}$ cup yogurt (your choice)
1 cup skim milk
 $\frac{1}{2}$ cup ice cubes

ORANGE BERRY SMOOTHIE

$\frac{1}{4}$ cup berries (your choice)
 $\frac{1}{2}$ cup skim milk
 $\frac{3}{4}$ cup orange juice



These recipes are just a few ideas to get you started. Do not be afraid to be creative with your smoothies...keeping in mind the three key ingredients in these recipes with vitamin D: milk, **fortified** yogurt and **fortified** orange juice!

The Facts about Vitamin D Supplementation

Are you concerned that you may have vitamin D insufficiency?

Ask your doctor to check your 25-hydroxyvitamin D level. This value can determine if your body has enough vitamin D. The value should be between 40-

60 ng/mL to be considered a healthy level. This is a good amount to possibly help prevent many of the diseases associated with vitamin D insufficiency. For more information, please take the brochures on display in the UMHHC cafeteria for the facts about vitamin D insufficiency and recent research about vitamin D and disease prevention.

Will my doctor give me a prescription?

Here at UMHHC, doctors can prescribe vitamin D₂, also called ergocalciferol. For vitamin D deficiencies, up to 50,000 IU taken once per week is recommended.

Do I need a prescription?

You can also buy vitamin D from a drugstore. This form of vitamin D called vitamin D₃ or cholecalciferol does not require a prescription. Some researchers prefer this form because it is more potent than the prescription form, vitamin D₂. However, make sure to check with your doctor before starting any new supplements.

How much is recommended?

Recent studies suggest that adults can safely take up to 2000 IU of vitamin D₃ from a pill each day. If you eat 2-3 vitamin D fortified products every day, you can take around 1000 IU per day instead.

Other examples of over-the-counter vitamin D supplementation.....

- Some calcium supplements contain 200 IU of vitamin D₃
- Most Women's and Men's formula daily vitamins contain 400 IU vitamin D₃
- Remember to check nutritional labels and look at the ingredients for cholecalciferol (vitamin D₃)

Due to recent research, the recommended dietary intake for adults may increase to 1000-2000 IU per day, so keep on the look out for these changes!

ARE YOU READY FOR SPRING????

Stop by the "This Month's Healthy Eating Tip" bulletin board in the University Hospital cafeteria to enter to win a pair of sunglasses!! Be prepared to go outside this spring and get your daily dose of vitamin D...the unique vitamin that you do not have to eat to receive! So go outside and enjoy the sun!



For further information about vitamin D, please visit the following websites:

<http://ods.od.nih.gov/factsheets/vitamind.asp>

www.vitamindcouncil.com

<http://www.dairycouncilofca.org/PDFs/vitaminD.pdf>

http://www.mayoclinic.com/health/vitamin-d/NS_patient-vitamind

http://www.eatright.org/ada/files/Tropicana_Fact_Sheet.pdf

References

Holick, MF. Vitamin D Deficiency. *N Engl J Med.* 2007; 357:266-281.

Skinner HG, Michaud DS, Giovannucci E, et al. Vitamin D Intake and the Risk for Pancreatic Cancer in Two Cohort Studies. *Cancer Epidemiol Biomarkers Prev.* 2006; 15: 1688-1695.

Cantorna MT, Zhu Y, Froicu M, et al. Vitamin D status, 1,25-hydroxyvitamin D₃ and the immune system. *Am J Clin Nutr.* 2004; 80: 1717S-1720S.

Deluca HF, Cantorna MT. Vitamin D: its role and uses in immunology. *FASEB Journal.* 2001; 15: 2579-2585.

Lou YR, Qiao S, Talonpoika R, et al. The Role of Vitamin D₃ metabolism in prostate cancer. *Journal of Steroid Biochemistry and Molecular Biology.* 2004; 92: 317-325.

Munger KL, Zhnag SM, O'Reilly M, et al. Vitamin D intake and incidence of multiple sclerosis. *Neurology.* 2006; 62: 60-65.

Lips P, Hosking D, Lippuner K, et al. The prevalence of vitamin D inadequacy amongst women with osteoporosis: an international epidemiological investigation. *Journal of Internal Medicine.* 2006; 260: 245-254.

Visser M, et al. Low serum concentrations of 25-hydroxyvitamin D in older persons and the risk of nursing home admission. *Am J Clin Nutr.* 2006; 84: 616-622.