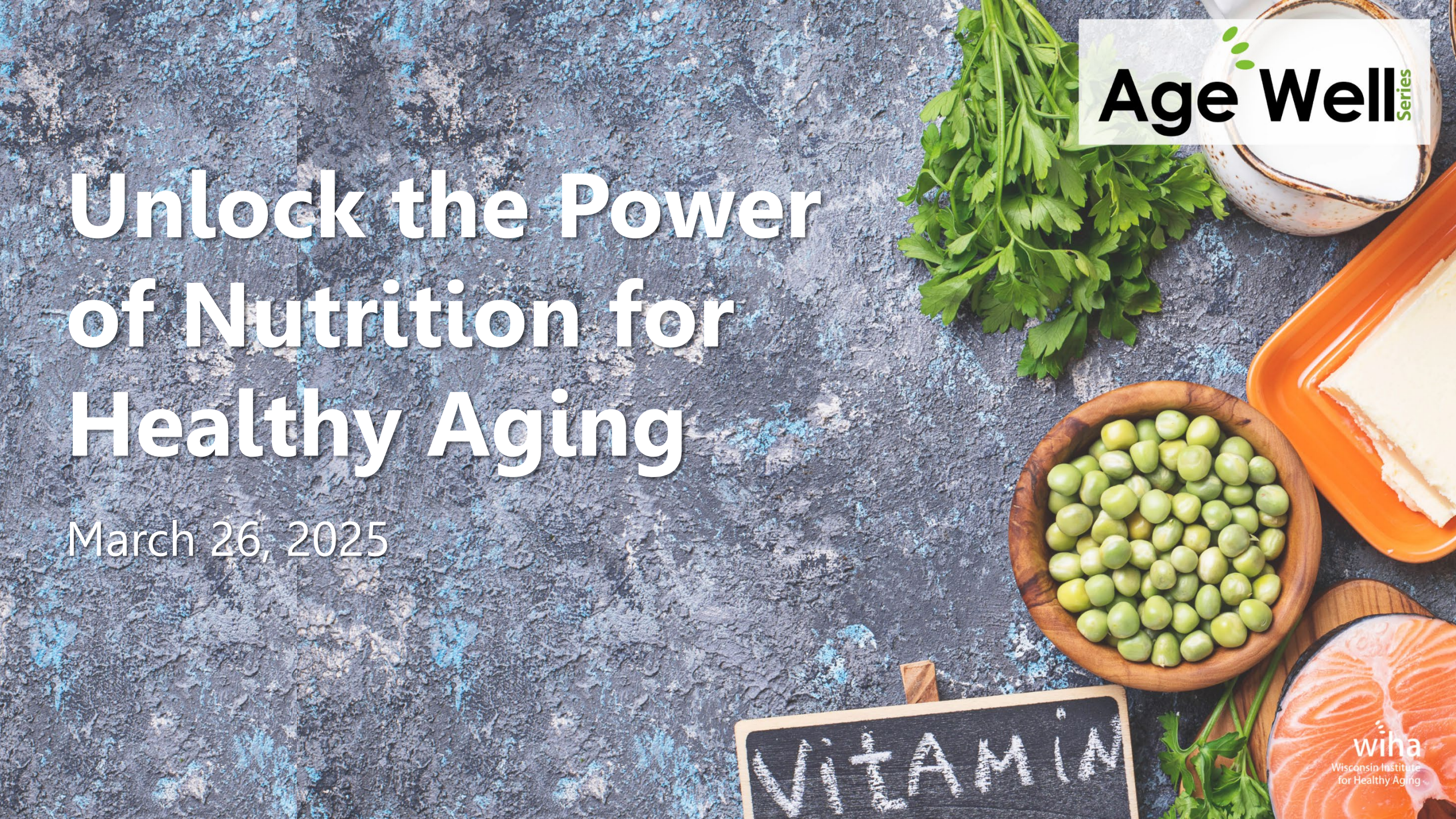
Age Well Series

Unlock the Power of Nutrition for Healthy Aging

March 26, 2025



wiha
Wisconsin Institute for Healthy Aging

About WIHA

- **Mission**: To improve the health and well-being of all people as we age by disseminating evidence-based programs and practices and by engaging in collaborative public health strategies in Wisconsin and beyond.
- https://wihealthyaging.org
- **Age Well Newsletter**

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Introduction to Speaker

Pam VanKampen

Registered Dietician

Greater Wisconsin Agency on Aging Resources (GWAAR)

GWaar
Greater Wisconsin
Agency on Aging Resources, Inc.

UNLOCK THE POWER OF NUTRITION FOR HEALTHY AGING. VITAMINS & MINERALS

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Agenda

Vitamins & Minerals Overview

Interactions with Meds

Closer Look at Nutrients of Concern

Questions & Answers

Lemono image from iStock

Can our bodies make vitamins & minerals?

Your body can make some vitamins but not all of them, and it can't make minerals at all.

Vitamins: Your body makes a few, like vitamin D (from sunlight) and vitamin K (made by gut bacteria). **But most vitamins must come from food.**

Minerals: Your body cannot make minerals. You have to get them from food or water. Examples include calcium (for bones) and iron (for blood).

That's why eating a variety of healthy foods is important!

Vitamins & Minerals

- **<u>Vitamins</u> help your body work properly, like turning food into energy, keeping your immune system strong, and helping your body heal.**
  - Examples include vitamin C (helps with healing) and vitamin D (keeps bones strong).
- **<u>Minerals</u> help with things like building strong bones, keeping your heart beating, and making sure your muscles and nerves work properly.**
  - Examples include calcium (for strong bones) and iron (helps carry oxygen in your blood). (1)

Did you Know:

You get vitamins and minerals from food, and sometimes people take supplements if they don't get enough.

The word "vitamin" originates from the **Latin word "vita" meaning "life"** combined **with "amine"** (compounds containing nitrogen).

Image by ivabalk from Pixabay

WATER-SOLUBLE VITAMINS

This means they are **not stored** in the body.

It is important to consume adequate amounts through diet or supplementation to maintain optimal health.

FAT-SOLUBLE VITAMINS (A, D, E, & K)

They are absorbed with the other fats from the food you eat. They go with the fats and **are stored in your body's fat tissue and liver.**

Fat-soluble vitamins can stay in your body for a while. When they're stored in your body's fat, they **can be stored for up to 6 months** until your body needs them.

Consult a healthcare professional before taking supplements, especially if you have any underlying health conditions or are taking medication.

Tell your doctor all the Over-the-Counter vitamins, minerals, and supplements you take even if they don’t ask!

Nutrients of Concern for Older Adults

- Calcium
- Vitamin D
- Potassium
- Magnesium
- Vitamin B12
- Iron
- Vitamin A
- Vitamin C

Vitamin and Mineral Supplement Fact Sheets

This collection of fact sheets and other resources from the NIH Office of Dietary Supplements (ODS) and other federal government sources provides information about dietary supplements and their ingredients. These include vitamins, minerals, herbs and botanicals, probiotics, and more. Many of these resources are available in versions written for health professionals and for consumers (in both English and Spanish).

Show:

- (•) All Federal Resources
- ( ) Only ODS Resources

Browse by letter:

5 A B C D E F G H I K L M N O P Q R S T V W Y Z

A

- Antioxidants
- Vitamin A

Want More Information?

The Office of Dietary Supplements has a wealth of information.

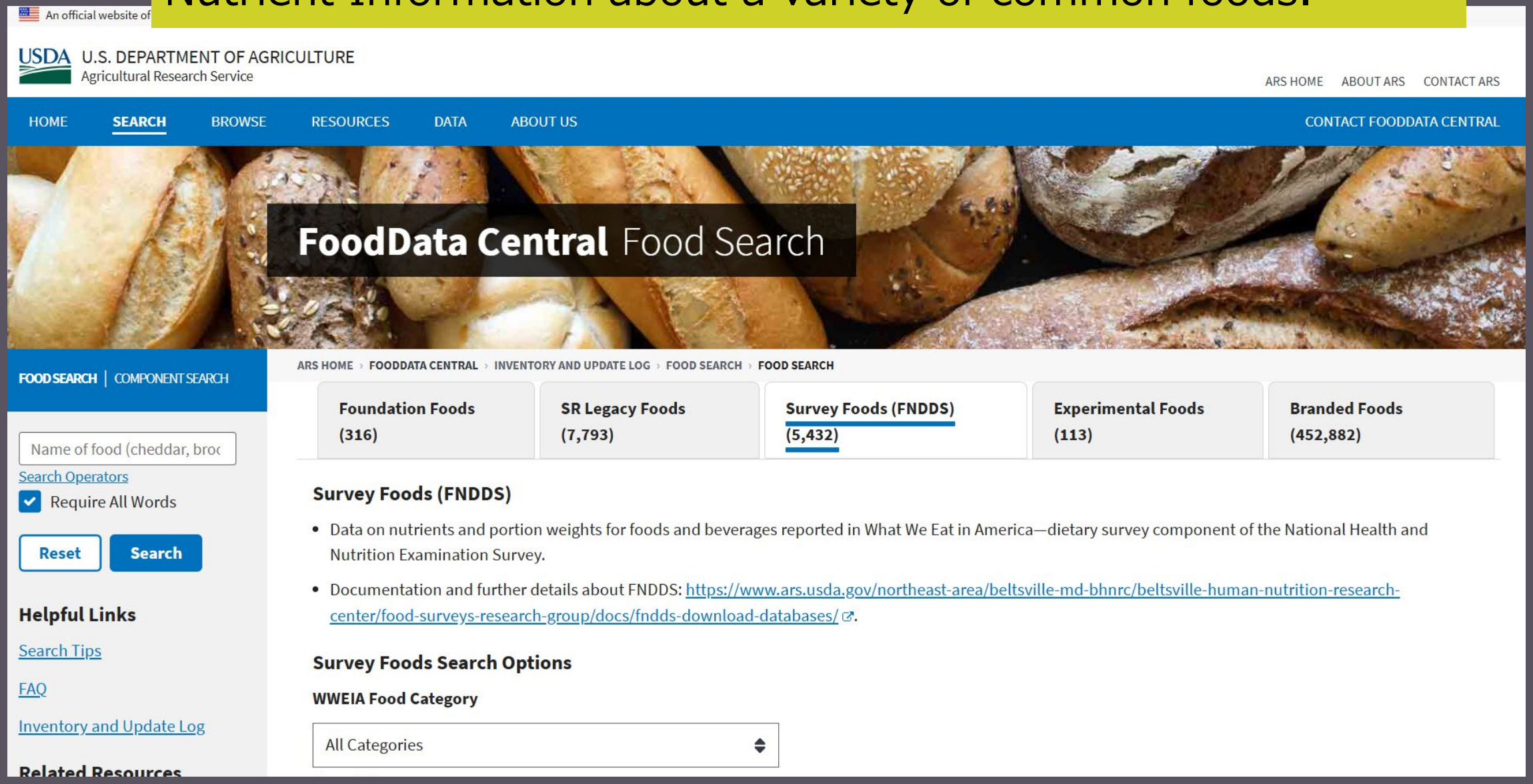
HTTPS://ODS.OD.NIH.GOV/FACTSHEETS/LIST-VITAMINSMINERALS/

- Botanical Dietary Supplements: Background Information
- Vitamin and Mineral Fact Sheets
- Botanical Supplement Fact Sheets
- Frequently Asked Questions
- Dietary Supplements: What You Need to Know
- ODS Videos
- Información en español

Supplements for Specific Purposes

- Alzheimer's disease

https://fdc.nal.usda.gov/food-search visit to see detailed Nutrient Information about a variety of common foods.



Why do medications work differently in older adults?

As we age, our bodies change. This can affect how medications absorb into our bodies.

- **It takes longer for your body to break down medications.**
- Treatment for one condition may affect another.
- **Your** activity level **and diet can influence how well certain medications work in your body.**

- **Start Low, Go Slow!**
- **Monitor how you feel, especially with new meds/supplements.**
- **Discuss any changes you make in your diet and exercise routine with your doctor!**

Vitamin	Drug/Medication	Interaction Effect
Vitamin D	**Digoxin**	If you have too much vitamin D, it can raise your calcium levels, which might make you more sensitive to harmful effects
Vitamin C & Vitamin K	**Warfarin (Coumadin)**	Taking extremely high doses of vitamins might reduce or block the effects of medications that help with blood clotting problems
Vitamin B12	Cimetidine– Common brand: **Tagamet** Famotidine- Common brand: **Pepcid or Zantac** Omeprazole– Common brands: **Prilosec** Metformin– Common brands: **Glucophage or Fortamet**	Taking them together might make it harder for your body to absorb the vitamin.
Vitamin A	Aluminum hydroxide – Common brands: **Amphojel** Cholestyramine – Common brands: **Questran, Prevalite**	Taking them together might make it harder for your body to absorb Vit. A Taking extremely high doses of vitamins might thin your blood and increase the risk of bleeding.

Mineral	Drug/Medication	Interaction Effect
Calcium	1. Ciprofloxacin- **(Cipro) or tetracycline** 2. Digoxin- **(Lanoxin, Digitek)** **3. Hydrochlorothiazide-** (HydroDIURIL, Esidrix, Inzirqo, Microzide) **4. Laxative (abuse)** 5. Phenytoin- **(Dilantin)** **6. Verapamil-** (Calan, Verelan)	1. Taking them together might make the medication work less effectively and make it harder for your body to absorb calcium. 2. & 3. Taking vitamin D at the same time with these meds may raise calcium levels too much, which could increase the risk of harmful side effects. 4. **Reduces calcium absorption.** 5. Taken together may decrease both drug & calcium levels. 6. Taking **calcium & vitamin D together with these meds may counter antiarrhythmic effects.**
Iron	**1. Calcium Carbonate** **2. Ciprofloxacin- (Cipro) or tetracycline**	1. To optimize absorption, **it's best to take iron and calcium supplements at different times, ideally 1-2 hours apart,** as calcium can interfere with iron absorption. 2. Taking them together might make the medication work less effectively and make it harder for your body to absorb Iron.

Mineral	Drug/Medication	Interaction Effect
Magnesium	1. Ciprofloxacin- (Cipro) or tetracycline **2. Alcohol (wine, beer, spirits)**	1. Taking them together might make the medication work less effectively and make it harder for your body to absorb calcium. 2. **Reduces mineral absorption.**
Potassium	Furosemide **(Lasix)** Hydrochlorothiazide **or HCTZ** (Esidrix, Hydrodiuril) Spironolactone **(Aldactone)** Eplerenone **(Inspra)** Ramipril **(Altace)** Losartan **(Cozaar)** Alcohol (wine, beer, spirits)	Medications can waste potassium, monitor potassium levels. Reduces mineral absorption.

Teresa Otto iStock image

As we age, **we may not eat enough nutritious foods**, which can lead to vitamin and mineral shortages and increase the risk of health problems.

Even though you need **fewer calories**, our bodies **require more of certain nutrients—like calcium, vitamin D, zinc, iron, and vitamin B12—because we don't absorb them as well as we used to.**

Let’s Take a Closer Look

fcafotodigital

Image by Tonda Tran from Pixabay

VITAMIN A

Promotes the health of the eyes and supports vision, immune function, and skin health.

FOOD SOURCES

Beef liver, some fish, milk, dark leafy green & yellow veggies & fruits (carrots, sweet potatoes, broccoli, spinach, squash, apricots, cantaloupe & mangoes) and fortified grains.

Image by Tom from Pixabay

VITAMIN A

Recommended Intake:

900 & 700 mcg/day for males & females over 19 respectively.

Upper Limit: 3000 mcg/day.

DEFICIENCY:

Is rare in the US.

Night blindness, dry eyes, poor immune function.

Image by Welcome to all and thank you for your visit ! ツ from Pixabay

VITAMIN B-6

Essential for protein metabolism and amino acid synthesis.

Plays a role in brain function, mood regulation, immune system health, and blood cell formation.

Helps regulate blood sugar levels and supports nerve function.

FOOD SOURCES

Meat (especially beef liver, poultry and fish), Beans & veggies, Potatoes, Bananas, nuts, and, Whole grains (in the US cereals are fortified with B6)

Groups at Higher Risk:

- People whose **kidneys do not work properly**, on kidney dialysis and those who have had a kidney transplant
- People with **autoimmune disorders**, rheumatoid arthritis, celiac disease, Crohn's disease, ulcerative colitis, or inflammatory bowel disease
- People with **alcohol dependence**

VITAMIN B-6

Recommended Intake:

1.7 mg/day & 1.5 mg/day for males & females over 51 respectively.

Upper Limit: 100 mg/day.

DEFICIENCY:

Irritability, depression, Weakness, Nerve damage (e.g., numbness, tingling), Anemia, weakened immunity, Skin problems (itchy rash)

iStock:vaaseenaa

Image by Виктория from Pixabay

VITAMIN B12

Critical for DNA synthesis and regeneration of methionine for protein synthesis and preventing homocysteine accumulation.

Supports nerve function, red blood cell formation, and energy production.

FOOD SOURCES

Animal products (meat, eggs, dairy, fish), fortified plant milks, fortified cereals, fortified nutritional yeast, some soy-based meat substitutes.

There is an estimated **10% to 30% malabsorption from food in adults 50+.**

Experts advise most of the **requirements be met through fortified foods or a supplement**, since the crystalline form of B12 is better absorbed by the body. (1)

VITAMIN B12

Recommended Intake: 2.4 mcg/day

Blood test: *The methylmalonic acid test* is more accurate because it assesses active B12.

DEFICIENCY:

Fatigue, anemia (megaloblastic & pernicious), numbness/tingling, neurological issues (dementia, depression), loss of bone density,

Common in Vegans/Vegetarians, older adults, and those with digestive disorders.

Glossitis:

Swollen, Red, Smooth, Sore tongue

Nutrient Deficiency: B12, Riboflavin, Folate, Niacin, B6, Biotin, Iron

Possible Non-nutrient related causes: Celiac disease, infection, Sjogren syndrome, Low-estrogen, dentures.

Henadzi Pechan image iStock

Image by AS Photograpy from Pixabay

VITAMIN C

Antioxidant that protects your cells from damage. It makes collagen, a powerful protein that helps wounds heal.

It helps your body absorb iron.

It supports your immune system to protect you from disease.

FOOD SOURCES

Kiwi, Bell peppers, Strawberries, Citrus fruits & juices, Tomatoes, Potatoes, Broccoli.

Image by eszej from Pixabay

VITAMIN C

Recommended Intake: 90 mg/day and 75 mg/day for males & females over 19 respectively. **Smokers need more.**

Upper Limit: 2000 mg/day (higher doses could cause diarrhea/GI issues)

DEFICIENCY:

Bleeding gums, Loose teeth, Slow wound healing.

Scurvy is rare in the US, however, it can still occur in individuals with dietary restrictions, malnutrition, or certain medical conditions.

As you get older, your body needs more vitamin D to keep your bones and muscles healthy.

Blood test:

25-Hydroxvitamin D status

VITAMIN D

Vitamin D helps the body absorb calcium, keeps bones strong, helps your muscles move, and supports the immune system.

Low vitamin D levels have been linked to slow-healing wounds.

FOOD SOURCES

Fish, egg yolk, mushrooms, vitamin D fortified foods, milks, and juices.

“Sunshine Vitamin”

Image by Jill Wellington from Pixabay

VITAMIN D

Recommended Intake: 800-1000 IU

Deficiency: Bone & Joint pain (Back, hips, ribs), muscle weakness & cramps, increased risk of fractures.

CAUTIONS: UPPER LIMIT 4000 IU/DAY

Excess vitamin D can cause calcium buildup (hypercalcemia). Hypercalcemia means there is too much calcium in your blood. **Symptoms:** nausea, weakness, confusion, and kidney problems.

Calcium Carbonate:

- Most popular version used in supplements and fortified foods.
- 40% calcium.
- Take with Food, this helps stimulate the production of stomach acid, which is necessary for the absorption of Calcium carbonate, requires stomach acid for absorption.

Calcium Citrate:

- 21% calcium
- Take with or without food.
- Better tolerated if you have kidney disorders or diminished stomach acid when taken without food.

For both types, limit to 500 mg 2-3 times a day for best utilization.

CALCIUM

Most abundant mineral in the body. Strengthens bones/teeth, and supports muscle & nerve function.

Take Calcium supplements and medicines 2 hours apart. There is potential to interact with several meds.

FOOD SOURCES

Milk and dairy

Plant Sources: Spinach, Kale, Broccoli…but you have to eat a lot ~4 to 5 cups to equal 8 oz of milk or yogurt.

Lactose Intolerant?

Image by JackieLou DL from Pixabay

Cheese, especially aged and yogurt may be better tolerated.

- **Be aware of the sodium content of cheese and yogurt with added sugars.**
- ***Dietary salt increases urinary calcium losses.***

Fortified Foods: good alternative and can have as much calcium as milk.

One study reported that if all adults with **osteoporosis in the US took calcium & vitamin D supplements, ~$4 billion per year** would be saved **by reducing fractures by 14%.**

CALCIUM

Recommended Intake:

1200 mg/day for adults 51+ (males 51 to 70 1000 mg/day)

Upper Limit: 2000 mg/day.

DEFICIENCY:

Chronic low intake=low bone mass and risk for osteoporosis & falls.

Diuretic use, renal failure, and bariatric surgery reduce calcium absorption.

Iron Supplements can reduce absorption of levodopa (med for Parkinson Ds and Restless Leg Syndrome) and **Levothyroxine** (treat goiter, hypothyroidism). **Take 4 hours apart.**

IRON

Supports **red blood cell production** and **oxygen transport.**

FOOD SOURCES

Heme Iron: Meat, fish, poultry (Liver, red meat) ***(well absorbed)***

Non-Heme: Legumes, dark leafy greens, iron-fortified bread, flour, breakfast cereals. ***(Absorption depends on your iron status).***

Vit. C can enhance absorption.

Vegetarians & Vegans:

Nonheme iron is less bioavailable so need **1.8 times more. (14.4 mg/day)**

IRON

Recommended intake: adults 51+

8 mg/day

Upper limit: 45 mg/day

DEFICIENCY

Many causes: Poor diet, malabsorption disorders, and blood loss.

Mild to Severe (Iron Deficiency Anemia) if not treated…

- Weakness, fatigue, difficulty concentrating, impaired cognitive function, reduced immunity, limited work & exercise capacity, and inability to properly regulate body temperature.

Koilonychia (Spoon Nails)

Koilonychia is indented nails. Instead of growing straight, your nails look concave, like spoons. In many people, koilonychia is a **sign of chronic iron deficiency anemia** due to: malnutrition, celiac disease, GI Blood loss, etc.

Usually, you can get rid of spoon nails by treating the underlying cause.

https://youtu.be/_OzQnxmoKFE?si=CehqV6cJ1C8aEe7F

ALOPECIA (PATCHY HAIR LOSS)

NUTRIENT DEFICIENCY: ZINC, BIOTIN, IRON

Increased Risk: Asthma, Thyroid Disease, Rheumatoid arthritis, Irritable Bowel Disease, Lupus, hereditary.

iStock:juankphoto

Image by Андрей from Pixabay

POTASSIUM

Your body needs potassium for almost everything it does. (Essential mineral & electrolyte)

Regulates fluid balance, muscle contractions, heart & kidney function. **Potassium blunts the effects of high sodium intakes on blood pressure.**

~90% of daily intake is excreted daily and needs to be replaced!

FOOD SOURCES

Fruits: Dried apricots, prunes, raisins, orange juice, and bananas

Vegetables: Acorn squash, potatoes, spinach, tomatoes, and broccoli

Lentils & Beans, soybeans, and nuts

Milk and yogurt, and Meats, poultry, and fish

POTASSIUM

Recommended Intake: 3400 mg/day for men and 2600 mg/day for women.

Excessive intake can cause heart issues, especially with kidney disease.

Amounts in Food

Potato (w/skin) **926 mg**

Lentils 1 cup **731 mg**

Prune Jc. 1 cup **707 mg**

Kidney beans 1 cup **607 mg**

Yogurt, Plain, 1 cup **531 mg**

Banana, medium, **422 mg**

Tomato juice, 6 oz, **395 mg**

Milk, 2%, 1 cup **342 mg**

DEFICIENCY

Getting too little potassium can increase blood pressure, deplete calcium in bones, and increase the risk of kidney stones.

Weakness, muscle cramps, & irregular heartbeat.

Image by Omi Sido from Pixabay

MAGNESIUM

Supports muscle/nerve function, bone health, energy, and muscle contraction (normal heart rhythm).

Visit: https://fallsfreewi.org/

FOOD SOURCES

Pumpkin seeds, Chia Seeds, Nuts (Almonds, cashews), Whole Grains, Leafy greens, Beans, Avocados

Image by MYCCF from Pixabay

At Higher Risk:
Older adults taking **multiple meds, or** have a **low dietary intake.**

Decreased intestinal absorption due to **age-related decrease in vitamin D metabolism** that stimulates its absorption.

Chronic alcoholism can promote increases in urinary excretion.

MAGNESIUM

Recommended Intake: Males 420 mg/day, Females 320 mg/day.

Upper Limit for supplements:
350 mg/day (no upper limit for food sources)

DEFICIENCY

Muscle cramps/weakness, fatigue, irregular heartbeat, mood changes, slurred speech, nausea, and lethargy.

Consult a healthcare professional before taking supplements, especially if you have any underlying health conditions or are taking medication.

Don’t self-medicate and please communicate with your doctor.

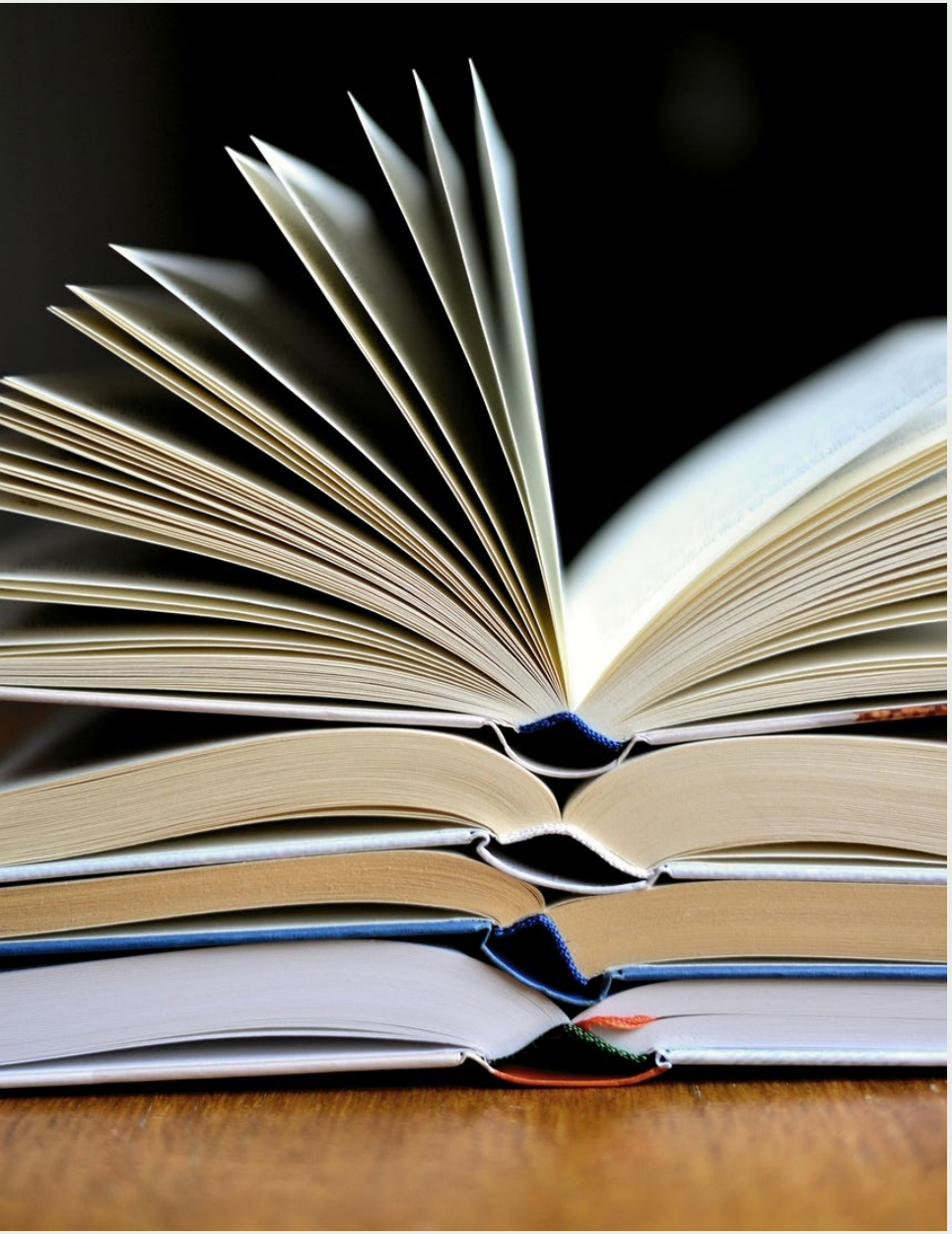


Image by congerdesign from Pixabay

REFERENCES

1. Health Professionals Guide to Dietary Supplements. Taylor Wallace, PhD. 2024.

2. Nutrition Care of the Older Adult, 4th Edition. Academy of Nutrition & Dietetics. 2025.

RESOURCES

NIH Office of Dietary Supplements

https://ods.od.nih.gov/factsheets/list-VitaminsMinerals/

USDA FoodData. Visit to see detailed Nutrient Information about a variety of common foods.
https://fdc.nal.usda.gov/food-search

THANK YOU!

If you have any questions, feel free to email me.

It was an honor presenting again as part of WIHA's Age Well Series.

Pam VanKampen, RDN, CD

Nutrition Program Specialist

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Feedback

- Share your thoughts
- Those who complete the eval live will be entered to win a t-shirt!

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Q&A

Next for Age Well Series

- 3 Exciting Webinars!
  - April 8
  - April 24
  - May 20

Age Well Series

Habits of Healthy Aging

Free Webinar

Join us for an insightful presentation on the key habits that support a vibrant and healthy life as we age. Based on cutting-edge research from the SuperAging team at the University of Wisconsin-Madison, this talk will explore how lifestyle choices—such as staying active, eating well, fostering social connections, and prioritizing sleep—can enhance cognitive function and overall well-being. Don't miss this opportunity to learn practical strategies for aging with strength, clarity, and resilience!

April 8
11am-12pm

Presented by:

SuperAging RESEARCH INITIATIVE

Wisconsin Alzheimer's Disease Research Center
UNIVERSITY OF WISCONSIN SCHOOL OF MEDICINE AND PUBLIC HEALTH

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Wisconsin Institute for Healthy Aging
https://wihealthyaging.org

Next for Age Well Series

- 3 Exciting Webinars!
  - April 8
  - April 24
  - May 20

Join us as we hear from Dr. Nathaniel Chin as he covers answers to common questions about dementia, including what distinguishes normal aging from cognitive decline, the early signs to watch for, and steps that can help those living with dementia. We'll also discuss how to navigate conversations with loved ones and what to expect at a doctor's visit. Whether you're a caregiver, a family member, or simply looking to learn more, this presentation will equip you with knowledge and practical strategies to approach dementia with confidence and compassion.

Presenter: Dr. Nathaniel Chin, MD
UW Madison, Department of Medicine
Division of Geriatrics and Gerontology

April 24
12-1pm
FREE WEBINAR

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Wisconsin Institute for Healthy Aging
https://wihealthyaging.org

Next for Age Well Series

- 3 Exciting Webinars!
  - April 8
  - April 24
  - May 20

Join the Wisconsin Institute for Healthy Aging and Wisconsin Coalition for Social Connection as we host:

- Dr. Rebecca Radue, Geriatric Psychiatrist
- Danette Hopke, Behavioral Health Program Manager, UW-Madison Division of Extension
- Mark Miller, Outreach Coordinator, 988 Wisconsin Lifeline

Learn about the importance of taking care of our mental health and tools to help us stay connected and mentally well as we age.

Tuesday, May 20, 2025
2:00 p.m. - 3:00 p.m.
Virtual on Zoom

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