

Navigating Supplements: Vitamins, Herbs, and Minerals

Esther Yang, PharmD

Trista Tam, PharmD

PGY-1 Pharmacy Residents

Kaiser Permanente | Redwood City | South San Francisco

Navigating Supplements: Vitamins, Herbs, and Minerals

What are supplements?

Why should I care about supplements?

Common Supplements

How do I make the best decision for *me*?

What are supplements?

What are supplements?



Dietary supplement:¹

A product taken by mouth that contains one or more ingredients (such as vitamins or amino acids) that are meant to **supplement one's diet and are not considered food**

Vitamins & Minerals:

Our bodies need them, but can't make them

Herbs:

Plants make them, and our bodies might find them useful

What are supplements?

Dietary Supplements

Vitamins

Vitamin A, B*, C, D, E

*Vitamin B has many names
(thiamine, riboflavin, niacin, etc)

Minerals

Calcium

Chloride

Magnesium

Phosphorus

Potassium

Sodium

Herbs

St. John's Wort

Ginkgo Biloba

Ginseng

Garlic

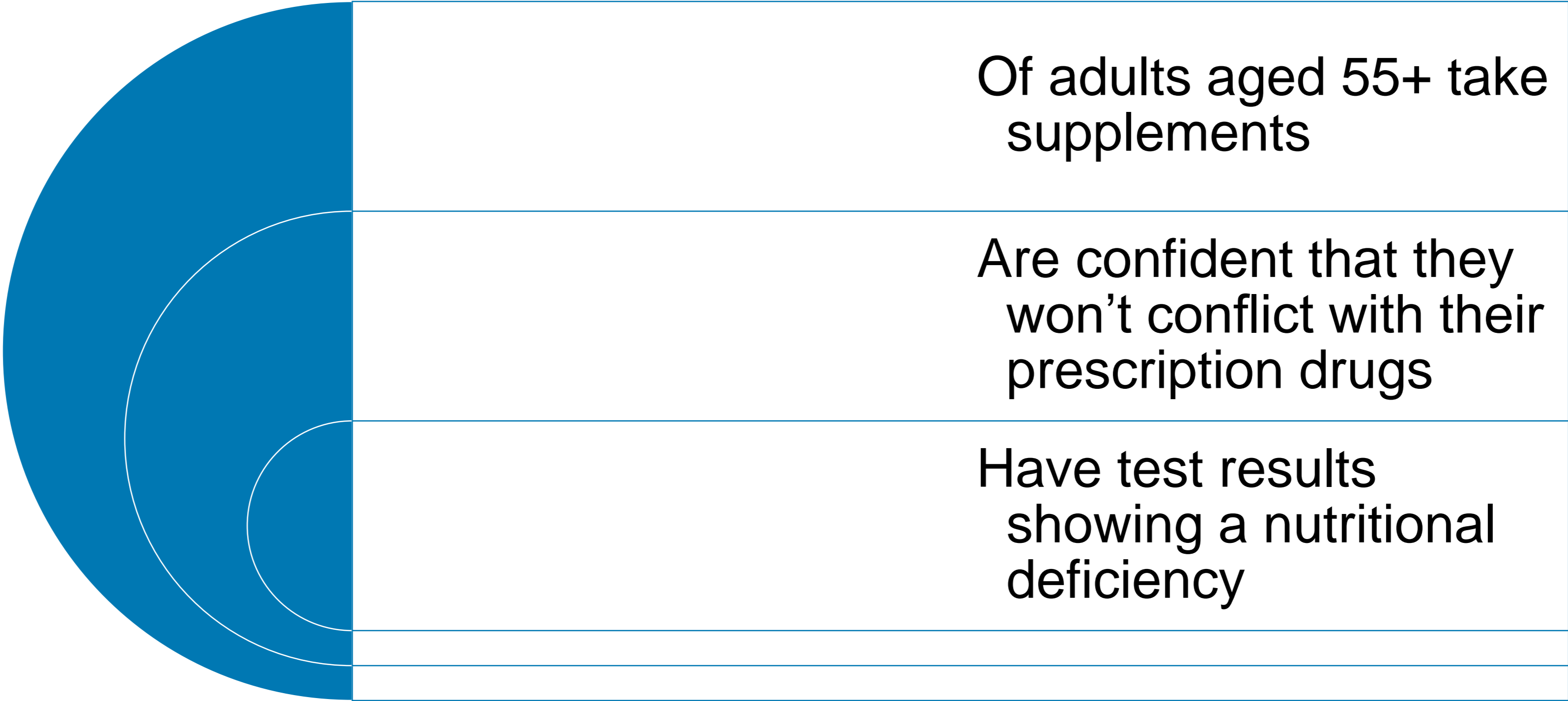
Ginger

Valerian Root

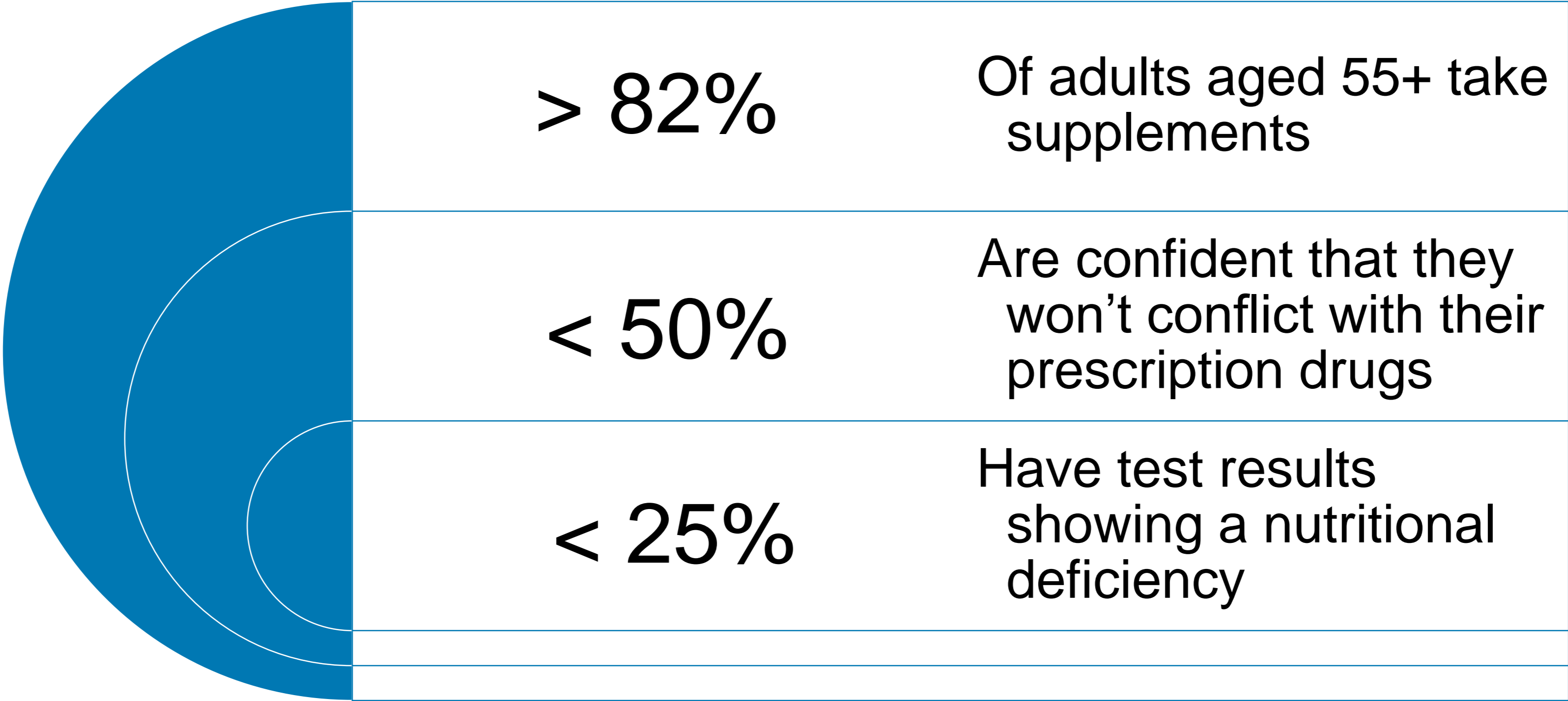
Turmeric

Why should I care about supplements?

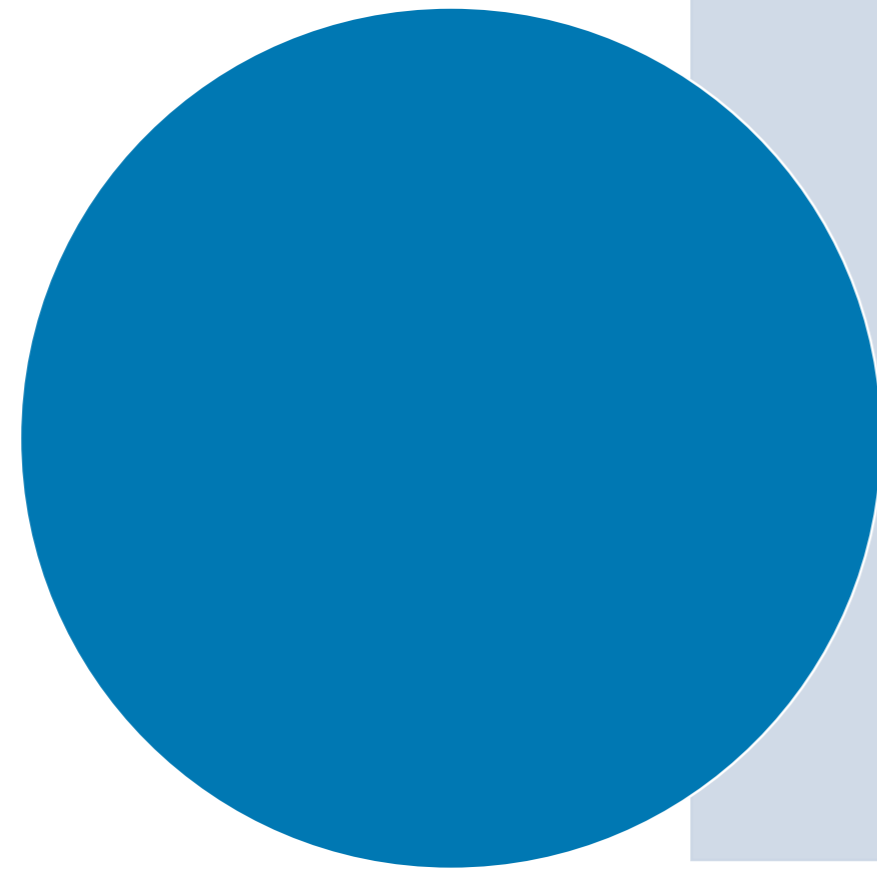
Why should I care about supplements?



Why should I care about supplements?



Why should I care about supplements?



Estimated number of
emergency room visits /
year in the US related to
dietary supplements

Why should I care about supplements?

20,000

Estimated number of emergency room visits / year in the US related to dietary supplements

Multivitamins

Iron

Weight loss supplements

Supplements for sleep, anxiety

Geller AI, Shehab N, Weidle NJ, et al. Emergency Department Visits for Adverse Events Related to Dietary Supplements. *N Engl J Med.* 2015;373(16):1531–1540. doi:10.1056/NEJMsa1504267

Common Supplements

Fish Oil/Omega 3 Fatty Acids

Potential benefits

- Lower risk of heart disease
- Improve cholesterol levels

Common doses

- There are many formulations available, follow the directions on the package label
- 1.1-1.6 grams per day

Pointers from a pharmacist

- Refrigerate or freeze to decrease fishy burps
- Monitor with cholesterol labs
- If you are on a blood thinner, talk to your provider before starting



<https://healthy.kaiserpermanente.org/health-wellness/drug-encyclopedia/drug.omega-3-dha-epa-fish-oil-100-mg-160-mg-1-000-mg-capsule.563419>

<http://hhp-blog.s3.amazonaws.com/2013/07/Fish-capsules.jpg>

Fish Oil – *Natural Medicines Database*, Therapeutic Research Faculty

Co-enzyme Q10 (CoQ10)

Potential benefits

- Heart failure symptoms
- Angina
- High blood pressure

Common doses

- 90-200 mg per day

Pointers from a pharmacist

- There isn't strong evidence for use of CoQ10
- Talk to your doctor or pharmacist if you are on blood thinners.
- May affect diabetes or blood pressure
- CoQ10 is found in certain foods: fish, animal liver



<https://healthy.kaiserpermanente.org/health-wellness/drug-encyclopedia/drug.coenzyme-q10-ubiquinol-100-mg-capsule.573841>

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4112525/>

Co-enzyme Q10 – *Natural Medicines Database*, Therapeutic Research Faculty

Glucosamine and Chondroitin

Potential benefits

- Joint pain in knee and hips

Common doses

- Glucosamine – 500 mg 3 times daily
- Chondroitin – 400 mg 3 times daily
- Some formulations contain MSM

Pointers from a pharmacist

- May take 4-8 weeks to notice an effect
- Do not use if allergic to shellfish
- May affect diabetes control
- If you are on a blood thinner, talk to your provider before starting



[https://mydoctor.kaiserpermanente.org/ncal/Images/Glucosamine%20and%20Chondroitin%20\(915800099\)_tcm75-14357.pdf](https://mydoctor.kaiserpermanente.org/ncal/Images/Glucosamine%20and%20Chondroitin%20(915800099)_tcm75-14357.pdf)
N-acetyl Glucosamine, Chondroitin Sulfate – *Natural Medicines Database*, Therapeutic Research Faculty

Vitamin C

Potential benefits

- Prevent low levels of Vitamin C
- Slightly shorter or more mild common colds

Common daily doses

Vitamin	Females	Males	Maximum
Vitamin C	75 mg	90 mg	2,000 mg

Pointers from a pharmacist

- The best way to get Vitamin C is through the diet (citrus fruits, tomatoes, broccoli)

Role in COVID-19

- Currently, there is not enough evidence to recommend Vitamin C to treat or prevent COVID-19



<https://healthy.kaiserpermanente.org/health-wellness/drug-encyclopedia/drug.vitamin-c-er-1-000-mg-tablet-extended-release.437225?kpSearch=vitamin+c>
<https://ods.od.nih.gov/factsheets/VitaminC-Consumer/>
<https://www.covid19treatmentguidelines.nih.gov/adjunctive-therapy/vitamin-c/>

Vitamin B12

Potential benefits

- Vitamin B 12 deficiency in those who don't absorb it well
 - Taking acid-suppressing medications or metformin for long periods of time
- Maintain your metabolism, blood cells, and nerves

Common doses

- Varies based on reason for use and blood levels

Pointers from a pharmacist

- Diet – animal sources only



Calcium & Vitamin D

Potential benefits

- Strong bones

Common daily doses

	Men	Women
Calcium	1000-1200 mg	1200 mg
Vitamin D	800-1000 IU	

Pointers from a pharmacist

- May need lab tests
- Prescription Vitamin D is not the same as OTC
- There are different types of calcium
- May interact with some medications

Role in COVID-19

- Currently, there is not enough evidence to recommend Vitamin D to treat or prevent COVID-19



Calcium, Vitamin D – *Natural Medicines Database*, Therapeutic Research Faculty

National Osteoporosis Foundation, <https://www.nof.org/patients/treatment/calciumvitamin-d/>

NIH COVID-19 Treatment Guidelines, <https://www.covid19treatmentguidelines.nih.gov/adjunctive-therapy/vitamin-d/>

Zinc

Potential benefits

- Zinc deficiency, helps the immune system and wound healing
- Lozenge/syrup: slightly shorter common colds if taken within 24 hours of coming down with a cold

Common daily doses

	Men	Women	Maximum
Zinc	11 mg	8 mg	40 mg

Pointers from a pharmacist

- The best way to get zinc is through your diet (red meat, shellfish, poultry, beans)
- Supplements may interact with some medications

Role in COVID-19

- Currently, there is not enough evidence to recommend zinc to treat COVID-19
- It is not recommended to take more than 11 mg (men) and 8 mg (women) to prevent COVID-19



Turmeric

Potential benefits

- Reduced skin irritation
- Sprains and swelling
- Reduced pain from osteoarthritis

Common doses

- Depends on formula
- Can be taken by mouth or applied on skin

Pointers from a pharmacist

- Limited studies to support its benefits
- Can increase bleeding risk



Probiotics

Potential benefits

- Healthy gut

Common doses

- 100 million – 100 billion CFUs (colony forming units) daily

Pointers from a pharmacist

- There are lots of different brands available
- Pay attention to storage requirements – some require refrigeration



Melatonin

Potential benefits

- Helps with insomnia or jetlag

Common doses

- Doses range from 1 to 5 mg, depending on reason for using – consult your doctor or pharmacist

Pointers from a pharmacist

- Melatonin can cause sleepiness - be cautious and prevent falls
- Do not take melatonin when driving



What about targeted supplements?

- Many supplements are advertised as being specially designed for men or for women or for certain age groups
- A standard multivitamin is okay for most people who take a supplement

Women's formulas	<ul style="list-style-type: none">• Have extra iron• Some have extra calcium
Men's formulas	<ul style="list-style-type: none">• Lower in iron
Senior formulas	<ul style="list-style-type: none">• Less iron and vitamin K• More vitamin B12 and vitamin D



How do I make the best decisions for *me*?

Do I need a supplement?

The best way to get the vitamins and minerals you need is by eating a wide variety of healthy foods.

Certain people are more likely to need a supplement

They include:

- People who eat a lower-calorie diet
- People who are sick, injured, or recovering from surgery
- People who can't or don't eat a variety of foods, such as people who have food allergies or people who eat a vegetarian diet



Not all supplements are safe

- Some claims do not require preapproval by FDA
 - If it sounds too good to be true, *it probably is!*
- Under the Dietary Supplement Health and Education Act of 1994 (DSHEA), supplements do not have to be tested by the FDA to be marketed



True or False?

Supplements that have a “Seal of Approval” on the bottle are proven to be safe and effective by the FDA

FALSE

Supplement Seals

- Independent organizations can be hired to test and monitor the ingredient **potency** and **purity** of dietary supplements
 - This means that the product contains the ingredients advertised on the label and that it does not have dangerous contaminants
- They DO NOT evaluate effectiveness or safety of the supplement



1. <https://www.wholefoodsmagazine.com/sites/default/files/images/articles/2013/January/Certifications%20logos/USP.jpg>
2. <https://www.usp.org/verification-services/verified-mark> 3. <https://www.consumerlab.com/> 4. <http://www.nsf.org/> 5. <https://www.ul.com/>
6. <https://www.mayoclinic.org/healthy-lifestyle/nutrition-and-healthy-eating/in-depth/what-does-a-seal-of-approval-mean/art-20232616>

Some supplements can interact with the medications we are taking!

Some common examples include:

- Calcium and iron-containing supplements – can bind to some drugs if taken at the same time (*examples: thyroid medications, antibiotics*)
- St. John's Wort – can decrease the amount of some medications in your body
- Goldenseal – can increase the amount of some medications in your body
- Vitamin K, Fish Oil, and CoQ10, and others may affect how blood thinners work

**Talk to your doctor or pharmacist before
you start any new supplements!**

How to pick a supplement

1

Consult your doctor or your pharmacist

2

Consider the Recommended Dietary Allowance (RDA)

3

Check for allergens or intolerances (wheat, eggs, gelatin, etc)

4

Check the expiration date

Questions?

Esther Yang, PharmD (Esther.E.Yang@kp.org)
Trista Tam, PharmD (Trista.Y.Tam@kp.org)