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LAB & SUPPLEMENT CONSIDERATIONS

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Today's Objectives

- (1) To understand that research is limited in the area of supplements, especially within MS and supplementation.
- (2) To identify possible considerations of supplementation for individuals with MS.
- (3) To review areas of concern for some supplements more commonly heard of related to MS.



Dietary supplements are not studied rigorously like approved medications and sometimes little is know regarding risks vs. possible benefits.



Always talk to your physician regarding your individual supplement considerations.

But allow this presentation to start the conversation.

When possible, always test lab values to understand your current individual state.

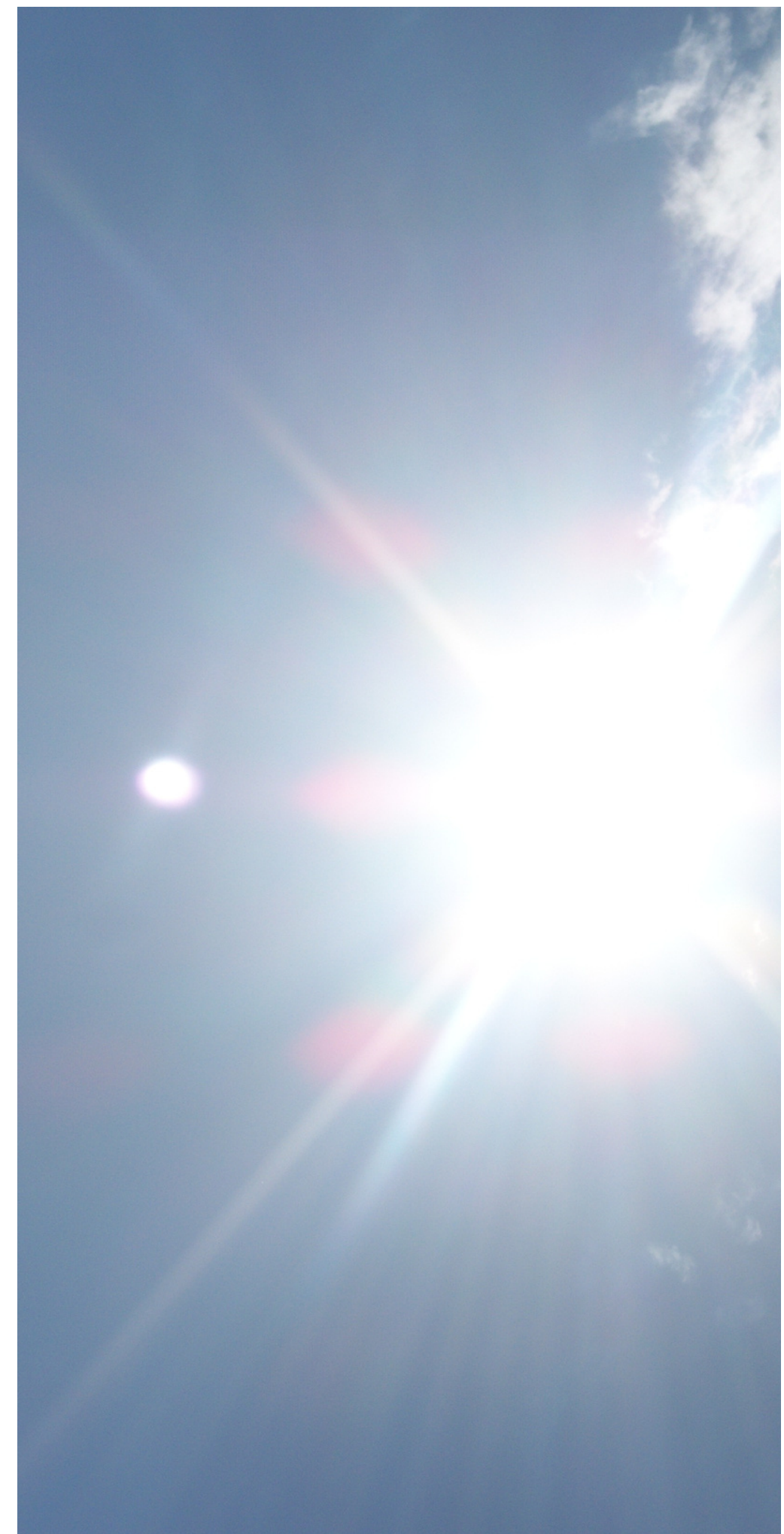




Vitamin D

Vitamin D - The Sunshine Vitamin

- A hormone (or, chemical messenger)
- Important role in absorption of calcium & bone growth
- Also, important role in cell, neuromuscular & immune function.



Studies

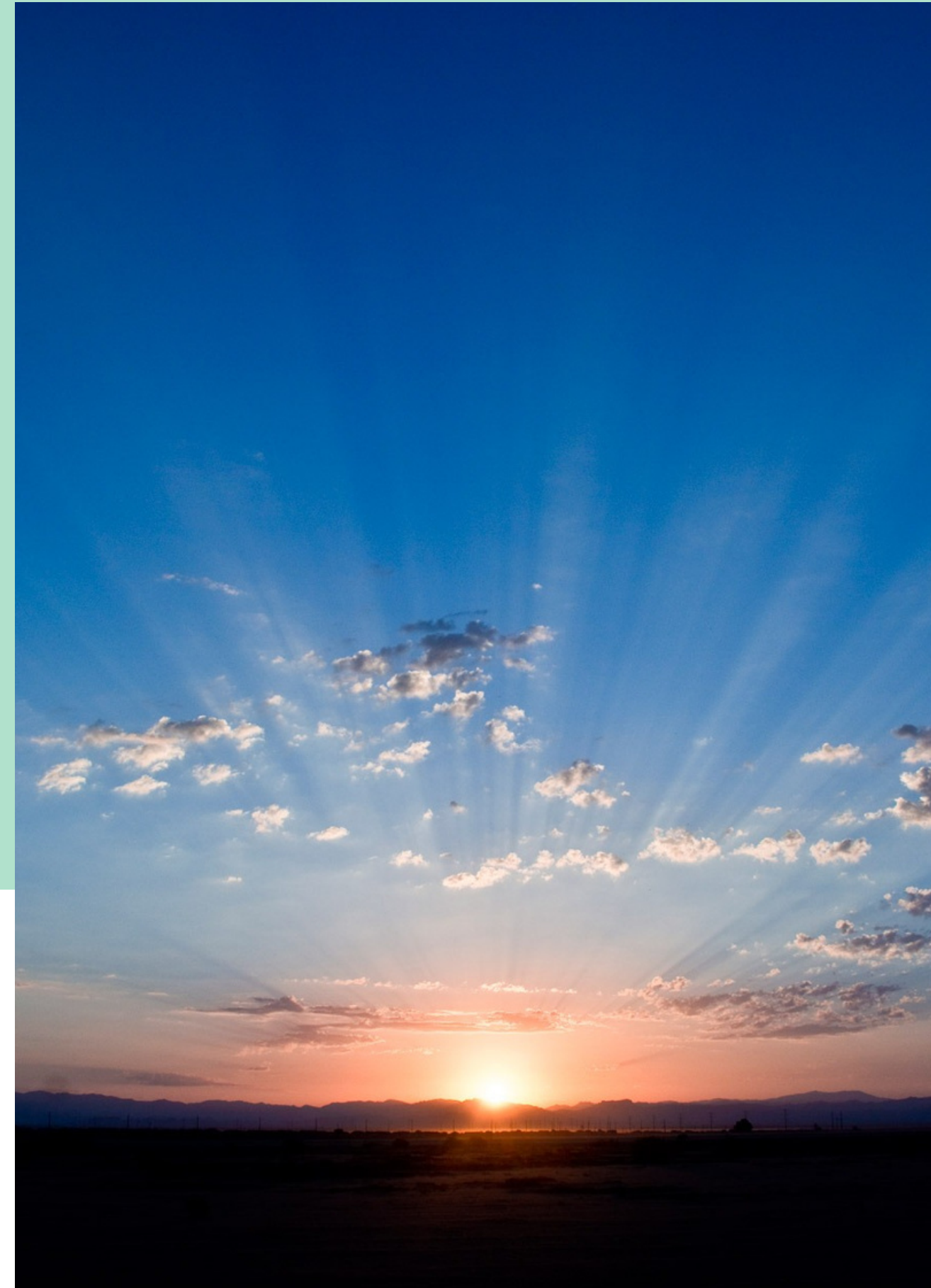
Higher vitamin D levels associated with lower risk of developing MS.

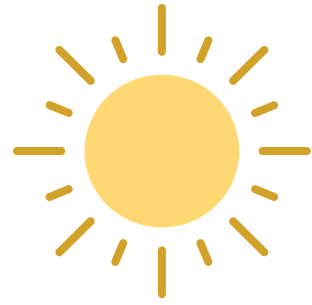
Vitamin D may alter immune function in ways that have beneficial effects on the course of MS.

Low vitamin D levels are associated with increased risk of relapse, exacerbations, and new MRI lesions.

Low vitamin D levels are associated with increased levels of disability.

This information is suggestive, but not definitive.





Discuss with your healthcare provider about
blood testing of vitamin D.

**Consider supplementation based on individual
result.**

Antioxidants

Preliminary evidence suggests that the damage caused by free radicals may be involved in the disease process of MS.



No well-documented studies of people with MS showing clinical benefit with antioxidant supplements.

Potential and theoretical risk of taking antioxidant supplements (immune system stimulation).





Best course of action -
get antioxidants through
your food!



Omega-3 Supplementation

Studies - Omega-3

Some studies found a reduction in MS incidence and progression.

Thought to play a role in the immune response.

Further studies are needed to assess the possible benefit of supplementation.



Omega-3 fatty acids
(especially EPA and DHA)
have been found to decrease
inflammatory mediators
(such as C-Reactive Protein) in
autoimmune diseases. (1,2)



Discuss with your healthcare provider about
omega-3 index testing.

**Consider supplementation based on individual
result.**



Vitamin B12

Vitamin B12

Required for production of red blood cells and proper function of the nervous system.

Suggested to be a relationship between vitamin B12 and MS.

One should not supplement based on this association.



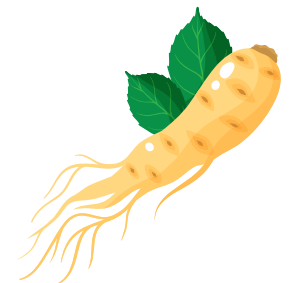


Discuss with your healthcare provider about vitamin B12 testing, preferably a uMMA.

Consider supplementation based on individual result.

Cautions

- **Zinc** - high supplementation can cause a copper deficiency - and potentially lead to copper-deficiency myelopathy (mimic the symptoms of MS).
- **Echinacea** - No study to investigate theoretical (stimulating immune system) risk in MS
- **Ginseng** - one small study reported improvement in fatigue. Further studies are needed. May stimulate immune system in detrimental ways.





Biotin

What About Biotin?

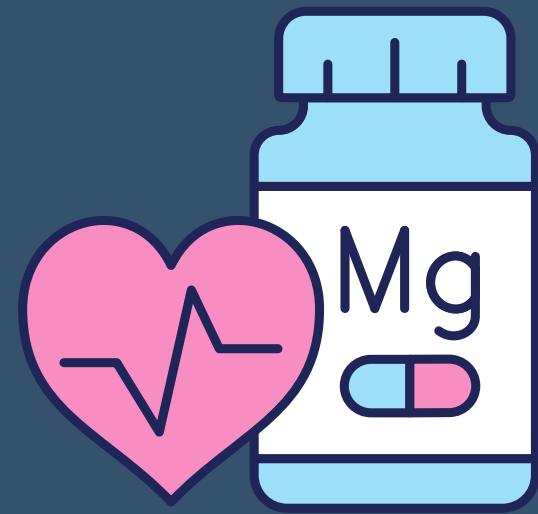
- Also known as B7
- Important for fatty acid synthesis, gluconeogenesis, and fatty acid catabolism.
- Considered "*Likely Safe*" when used orally and appropriately
 - Safely used in doses of up to 300 mg for up to 6 months.

What about MS Research?

Considered "*Possibly Ineffective*"

"High-dose biotin (300 mg daily) does not reduce disability in patients with progressive MS. It also does not seem to be linked to an increased risk for relapse."

"Although most earlier research suggested benefit, the highest quality evidence shows that high-dose biotin does not improve outcomes in progressive MS."



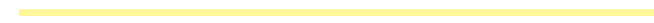
Magnesium

What About Magnesium Supplementation?

- Commonly used to improve sleep, mood/depression/anxiety, bowel movements, and more.
- More acute symptoms include - fatigue, muscle cramps, irregular heartbeat
- 2-15% of American's experience deficiency

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- Commonly used to improve sleep, mood/depression/anxiety, bowel movements, and more.
- More acute symptoms include - fatigue, muscle cramps, irregular heartbeat
- 2-15% of American's experience deficiency
- Foods: whole grains, nuts, seeds, legumes + fruits & vegetables



Dosing

- Considered "likely safe" when used orally and appropriately and used in doses below the UL of 350 mg daily.
- Higher doses may cause loose stools/diarrhea.

14–18 years	410 mg	360 mg
19–30 years	400 mg	310 mg
31–50 years	420 mg	320 mg
51+ years	420 mg	320 mg

Forms of Magnesium

Magnesium Citrate - to raise low levels + treat constipation

Magnesium Malate - less of a laxative effect; often used in more chronic conditions, but more research is needed

Magnesium Glycinate - calming effects, anxiety, depression, and insomnia.

Magnesium Sulfate - *Epsom salt*; typically dissolved in water to treat stress and sore muscles.



Ginkgo Biloba

- Some (but not all) studies show it may improve cognitive function in healthy people and those with dementia - but not among MS population.
- May improve fatigue (one small study).
- Considered "possibly ineffective" against MS - although considered "likely safe"
- Possible interaction with many different prescription meds.



Upcoming Nutrition Sessions*

with Alison Tierney, MS, RD, CSO

March 22nd
May 3rd
July 12th
September 6th
November 1st



All sessions held from 11 am - 12 pm
Wisconsin Metal Parts
*Dates subject to change.

Thank You

Q&A OPPORTUNITY

References:

1. Borges MC, Santos Fde M, Telles RW, Correia MI, Lanna CC. [Polyunsaturated omega-3 fatty acids and systemic lupus erythematosus: what do we know?]. *Rev Bras Reumatol* 2014;54(6):459-466.
2. Halade GV, Rahman MM, Bhattacharya A, Barnes JL, Chandrasekar B, Fernandes G. Docosahexaenoic acid-enriched fish oil attenuates kidney disease and prolongs median and maximal life span of autoimmune lupus-prone mice. *J Immunol*. 2010;184(9):5280-5286.