Vitamin D Summary

- Recommend patients get their vitamin D tested, and supplement with D3 if they are not in the optimal range, especially patients with depression or seasonal affective disorder.
- Unlikely to be as life changing as B-complex can be, but is really important support for many people.

Minerals

- Magnesium
- Calcium

Magnesium

- Essential nutrient for mental health that is VERY commonly deficient.
- Critical for the relaxation of nerve cells and muscle cells.
- Most useful in anxiety, ADHD, bipolar, anger/irritability, and associated pain syndromes such as headaches, migraines, fibromyalgia, back pain, and sciatica.

Mark Hyman, MD

- Functional Medicine Doctor
- Author of "The UltraMind Solution"
- www.drhyman.com has a huge library of video and written resources
- http://drhyman.com/blog/2010/05/20/magnesium-the-most-powerful-relaxation-mineral-available/
- https://www.youtube.com/watch?v=GUWL1o2hSrs

Mental Emotional Signs of Possible Magnesium Deficiency

- Anxiety
- Panic attacks
- Irritability and Anger
- Difficulty focusing
- Poor sleep
- Heightened sensitivity to pain

UltraWellness TV

This Week: Magnesium: The most powerful relaxation mineral available...
**Physical Signs of Possible Magnesium Deficiency**
- Restless leg syndrome, muscle cramps, are almost always magnesium deficiency
- High blood pressure
- Heart palpitations
- Constipation
- Headaches, migraines and tension headaches
- Muscle stiffness, fibromyalgia, trigger point tenderness, sometimes back pain and scatica

**Why Magnesium Deficiency is so common**
- 1) We consume too much of the foods that do not contain magnesium, and not enough of the foods that do (too much processed food, not enough vegetables and beans/legumes)
- 2) Food sources of Magnesium contain less magnesium than they used to because of modern farming practices
- 3) Over consumption of Calcium induces a relative Magnesium deficiency

**Best Sources of Magnesium**
- Yet another reason to eat lots of green vegetables, which are the richest sources of magnesium
- Beans and Legumes
- Nuts
- Whole grains

**Supplementing Magnesium**
- RDA 300-400mg per day
- Many people need more to function optimally
- Magnesium supplements can stimulate bowel function, a positive benefit when constipation is an issue, but sometimes a problem when people who need more magnesium reach "bowel tolerance"
- Use Mg glycinate (most absorbable form) when bowels are oversensitive (colitis, IBS-D)
- When constipation an issue: Use Mg citrate (most effective) or Mg oxide (will require higher doses but is cheapest)

**Calcium**
- Most famous nutrient, particularly for bones
- Important in a most of the same neurological and muscular functions as magnesium
- Not as commonly deficient as Magnesium: For every 1 case of Calcium deficiency - 1 see at least 20 cases of Calcium Excess creating Magnesium deficiency

**Problems of Too Much Calcium: More is NOT Better**
- Consumption of high amounts of Calcium without adequate amounts of Magnesium, Zinc, and other trace minerals leads to imbalance
- Signs are similar to Mag deficiency - often Magnesium deficiency is relative to Calcium consumption
- Building evidence that supplementation over 500mg per day increases risk of heart disease
**Sources of Calcium**
- Dairy
- Tofu, tempeh, soy
- Leafy greens
- Broccoli
- Supplements
- Antacids/Heartburn relief meds (Tums)

**How Much Calcium is Enough, and Too Much?**
- RDA is 1000-1200mg per day
- The RDA includes dietary Calcium, is NOT a supplement recommendation
- Calcium citrate more absorbable than Calcium carbonate, so requires a smaller amount

**Calcium Summary**
- Generally limit Calcium supplementation to 500mg per day, unless diet is extremely deficient, or the patient has been told otherwise by her doctor, AND clearly understands doctor's instructions
- Remember to count Tums as a supplement
- Never exceed 1200mg per day in total Calcium
- Never supplement Calcium alone - the other minerals are equally important

**Balancing Minerals**
- The best way is a whole foods diet rich in vegetables, particularly leafy greens, nuts, beans and legumes, with small amounts of organic dairy and soy
- If supplementing Calcium, supplement other minerals as well - Magnesium supplementation generally should be equal to Calcium (occasionally a 2:1 Cal:Mag ratio is better tolerated)
- Remember the other minerals too: Potassium, Zinc, Chromium, Boron

**Case**
- 64 year old woman with headaches, severe constipation, anxiety, extremely rigid thinking and ritual behaviors bordering on OCD, worsening over the past several years
- Had been told she had “severe osteoporosis” and put on 1200mg of Calcium per day.
- Magnesium 500mg per day, along with Calcium 200mg, vitamin D 5000iu, and B-complex 50 I per day resolved constipation, headaches, and 50-75% improvement in mental/emotional symptoms

**Assessment Tool**
- NaturallyMindedProgram.com
- Patients take an online quiz, and receive an individualized guide to help you and them to know what their underlying imbalance is, and what are the most important interventions to focus on first
**The Physical Basis of Mental Health: Advanced**

**Blood Sugar**
- Maintaining healthy blood sugar is critical for brain function.
- Blood sugar swings, both high and low can cause symptoms, both mild and severe.
- Hypoglycemia is when blood sugar drops, creating shakiness, irritability, and declined cognitive function. When severe, such as in diabetes, it is a medical emergency that lead to death.
- Extremely common in children and adults.
- Blood sugar levels that are normal on typical lab screening may still be poorly regulated enough to cause symptoms.
- Testing for reactive hypoglycemia requires a glucose tolerance test, not just a fasting glucose.

**Signs of Blood Sugar Regulation Problems**
- Shakiness, irritability or moodiness, and/or decreased cognitive function such as inability to focus or difficulty making decisions, particularly if a meal is late or skipped, or 1-2 hours after eating a sugar-laden heavy meal or snack.
- Ask the people around you: your family/friends/colleagues are more likely to notice these symptoms than you are.
- Waking hungry in the middle of the night.
- Feeling exhausted after eating sugar.
- Craving alcohol after eating sugar.
- Sleepiness after lunch.
- Diabetes.
- Being very thin.

**Maintaining Healthy Blood Sugar**
- Diet: balanced protein, carbs and fat, and fiber at EVERY meal. Avoid meals/snacks that are mostly sugar or starches.
- Eat regularly: 3 meals and 2-3 snacks (or 5-6 small meals per day).
- Protein with every meal.
- Exercise.

**Blood Sugar Bottom Line**
- Consider in all cases of ADHD, especially in kids, bipolar, anxiety, and irritability.
- Even if blood sugar is not the root cause of the problem, it often becomes an exacerbating cause, and balancing will reduce the overall severity of symptoms and allow other therapies to work more effectively.
- Treat with diet modification.
- Support adrenals.