Iodine in Pregnancy

- Many reproductive aged women in US have **marginal iodine** status; **salt in processed** foods is **not iodized**.

- Deficiency associated with pregnancy loss and prematurity, and poor neurodevelopment in the baby.

- Mild to moderate iodine deficiency is associated with **higher incidence of ADHD** and **lower IQ** in the baby.

- American Thyroid Association recommends pregnant/lactating women supplement: 150 mcg/d potassium iodide.

Children on ADHD Medication

- ≤3.0%
- 3.1% - 5.0%
- 5.1% - 7.0%
- 7.1% - 9.0%
- ≥ 9.1%
CDC 2nd National Report on Biochemical Indicators of Diet and Nutrition. The WHO recommends that the median UI in pregnancy be 150-249 mcg/L.
B Vitamins

• The B-vitamins are important for the metabolism of carbohydrates, fats and proteins and play a vital role in the production of fuel and energy for the body.

• There are eight B-vitamins that partner together, which is why you almost always want to take them together in balanced amounts.

Stephen Ilyas, and Joanna Moncrieff BJP 2012;200:393-398
Vitamin B6
(Pyroxidal-5-Phosphate)

- Critically involved in production of serotonin, dopamine, melatonin, hemoglobin, protein metabolism, energy production, and more.

- Deficiency: depression; impaired cognition, attention, memory, and sleep. Increased risk for heart disease, stroke and colorectal cancer.

- Common OTC analgesics and oral contraceptives lower B6 levels.

- 30 MILLION Americans are deficient in B6.

- Need ~6 mg per day to maintain normal serum level.

Larsson SC, et al. JAMA 2010; 303(11):107783
To Get 1.5mg of B6 in Food

• 2.5 bananas
• 12 Tbsp. roasted sunflower seeds
• 8 ounces chicken breast
• 8 ounces sockeye salmon
• ~5 ounces cooked tuna
• ~5 ounces beef liver
• 3.5 cups raw diced avocado
• 3 cups sweet potatoes
• 15 cups of milk OR
• 20 Tbsp. peanut butter
Vitamin B12

- Found in animal and fortified foods.
- Deficiency: sore tongue, constipation, anemia, depression, low energy, neurological disorders (numbness/tingling feet, difficulty walking, memory loss, dementia)
- **Metformin** is a drug commonly used to treat **type 2 diabetes**. It **lowers vitamin B12** levels significantly within months of starting therapy.
- **18 million Americans are deficient in vitamin B12**

Vitamin C

• Potent antioxidant, activates folate, needed to convert tryptophan to serotonin, cofactor in synthesis of carnitine, thyroxin, norepinephrine, dopamine and needed for immune cell function

• **Vitamin C levels decline rapidly during periods of emotional and physical strain, and illness.**

• As levels fall, collagen synthesis impaired: **bruise** more easily, **skin** becomes **thick and dry**, **wounds** take longer to heal, **joints hurt**, fatigue.

• Recommended 200 mg 1-2 times daily.
Figure H.1.f. Prevalence estimates of vitamin C deficiency (serum concentrations less than 11.4 μmol/L) and low vitamin C concentrations (11.4-23 μmol/L) in the U.S. population aged 6 years and older by age group, National Health & Nutrition Examination Survey, 2003-2006.

Error bars represent 95% of confidence intervals. *Prevalence in children is significantly lower than prevalence in persons 20 years and older (p <0.05).
Zinc

- Marginal zinc deficiency can diminish the activity of important immune cells.

- WHO estimates **marginal zinc status** results in **the deaths of > 500,000 children** under the age **five**

- Not effectively stored, must be continuously replaced in the diet.

- Zinc concentrations high in prostate gland, testes, and sperm. Deficiency might contribute to lower testosterone and infertility in men.

- Vegetarians need 50% more zinc due to lower absorption of zinc from plant foods.

- You need ~15 mg per day.
Vitamin D

- Vitamin D interacts with more than 1000 genes
- Vitally important for calcium regulation (bones, heart, etc.)
- Studies show that higher blood levels of vitamin D improve breast cancer survival and reduce risk of colorectal cancer.
- Low vitamin D in adults causes muscle weakness and lower back and hip pain.
- Obesity increases the risk of deficiency.


Copyright © 2016 Integrative Medicine Concept, LLC. All Rights Reserved.
**Intestine**

- \( \text{Ca}^{2+} \)  
  - Increases the uptake of \( \text{Ca}^{2+} \) and the production of osteocalcin.

**Inactive Osteocalcin**

- Vitamin D3  
  - Co-factor for the enzymes that activates osteocalcin.

**Active Osteocalcin**

- Vitamin K2  
  - Calcium incorporated into bone.

**Bone**

- \( \text{Ca}^{2+} \)  
  - \( \text{Ca}^{2+} \)  
  - \( \text{Ca}^{2+} \)  
  - \( \text{Ca}^{2+} \)
Vitamin D

CDC found:
• ~90 million Americans are vitamin D deficient
• Most individuals should take 1,000-2,000 IU vitamin D3 per day with dinner

To get 600 IU/d Vitamin D3:
• 3-4 ounces sockeye salmon, cooked
• 11.4 ounces water-packed tuna
• 26 oil-packed sardines
• 15 large eggs
• 5 cups fortified milk
• 30-45 ounces yogurt
Choline

- Water soluble nutrient in the **B-vitamin family** that is necessary to prevent non-alcoholic fatty liver disease.

- It is also crucial during **pregnancy** and the first **three years of a child’s life**.

- Deficiency may be associated with permanent changes in brain function that negatively impact intelligence, memory, mood regulation, and stress response.

- DV is 550 mg per day.
INVEST WISELY