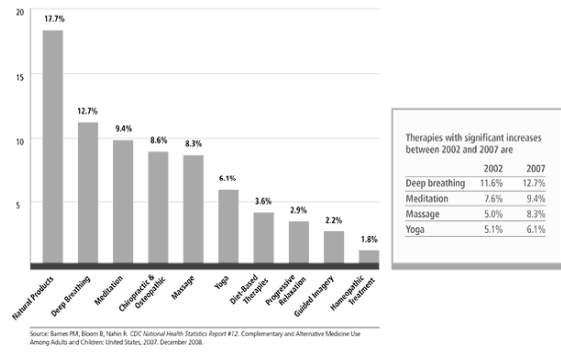


Supplements in Primary Care

Linda E. Chun, MD,
 Clinical Assistant Professor
 Department of Pediatrics
 Department of Internal Medicine
 Nationwide Children's Hospital
 Ohio State University Medical Center

10 Most Common CAM Therapies Among Adults - 2007



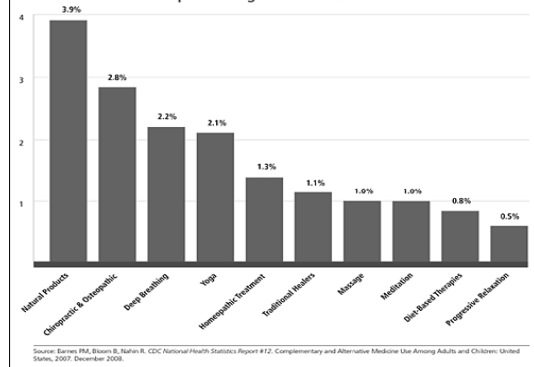
<http://nccam.nih.gov/news/camstats/2007>

NATURAL PRODUCTS

- 2007 National Health Interview Survey
- U.S public spent approximately \$33.9 billion out-of-pocket on CAM
- Visits to CAM practitioners and CAM products, classes, materials
- \$14.8 billion spent on nonvitamin, nonmineral, natural products
- Equivalent to 1/3 of out-of-pocket spending on prescription drugs

<http://nccam.nih.gov/news/camstats/costs>

10 Most Common Therapies Among Children - 2007



<http://nccam.nih.gov/news/camstats/2007>

HERBAL MEDICINE

- About 80% of the earth's populations use plant medicine as primary source of healing
- Herbs some of the first medicines
- Chemistry of plants more complex than that of pharmaceutical agents
- Different parts of the same plant can have different qualities

BOTANICALS



- Important part of integrative medicine
- Patients may prefer more natural approach to care
- Prescription medications often with intolerable side effects
- In general, effects of herbs tend to be milder and slower in onset
- Herbs with milder adverse effects compared to pharmaceuticals

HERBAL MEDICINE

- Vast majority of evidence originated from direct experience or observation
- Increasing number of randomized controlled trials
- Study single standardized herb or phytopharmaceutical
- May not truly reflect practice of herbal medicine (individualized treatments)



BOTANICALS

- Not FDA regulated
- Dietary Supplement Health and Education Act of 1994
 - ingredients in dietary supplements not subject to premarket safety evals required of food ingredients
 - must meet other safety provisions
- What is needed to improve botanical quality?
 - program for certification of botanical activity
 - validated method to detect contaminants or adulterants

HERBS AND PATIENTS

- Ask - patients often do not disclose use
- Use only products that have passed quality testing on consumerlabs.com (independent testing group)
- Watch for adverse effects
- Watch for drug interactions
- Use standardized products
- Probably should avoid during pregnancy



BOTANICAL LABELS

- Serving size is a suggestion
- No established % daily value
- Servings per container
- Common name and botanical name
- Plant part
- Quantity of starting material and of extract
- Extract ratio – provides strength of product
- Standardization – indicates active compound
- Other ingredients

HERBAL PREPARATIONS

- Whole herb, fresh or dried
 - Flower, stem, or root
 - Can have tea, infusion (hot), decoction (boiled)
- Extracts and tinctures
 - alcohol or water solvent
 - solid extracts made by evaporating tincture, residue dried, made into capsules
- Essential oils for aromatherapy, topical



BOTANICAL LABELS

- Herbal supplement with multiple ingredients:
 - Amounts of each herb listed unless a proprietary blend
 - Manufacturer
 - Packer
 - Distributor
 - Lot #
 - Expiration date

Supplement Facts		
Serving Size 1 Capsule		
	Amount per serving	% Daily Value
Proprietary Blend	119.5 mg	*
Bauhinia Purpurea L. (Leaf and Pod), Bacopa Monniera (Leaf), 1,3-Dimethylamylamine (Geranium [Stem]), Cistus Oligophyllum (Whole Plant Extract), Rauwolfscine (Rauwolfia Canescens L. (Leaf and Root))		
Caffeine	100 mg	*
* Daily value not established		

Courtesy of <http://www.anthonyroberts.info>

SAFETY

- Interactions with prescription medications
 - i.e. affect cytochrome P450 enzymes?
- Metabolism and clearance of botanical compounds in children not same as in adults
- Contamination
 - Intentional and unintentional
 - Bacteria, heavy metals, pesticides, herbicides, medications, other supplements



SAFETY CONCERNS

- Any herb used incorrectly can be dangerous
- Hepatic, renal, electrolyte abnormalities with chronic use:
 - Comfrey, chaparral, licorice
- Potential life threatening adverse effects:
 - Mistletoe, digitalis, ephedra, pennyroyal essential oil
- Watch herbs containing pyrrolizidine alkaloids
- Accidental ingestion of essential oils (pediatrics)

FINDING QUALITY PRODUCTS

- Look for product seals
- Confirm identity and quantity of ingredients on label
- Confirm product free of contaminants and undeclared ingredients
- Demonstrate conformance to industry GMPs
- GMP released June 2007



HERBS AND ADVERSE CARDIOVASCULAR EFFECTS

- Garlic - ↑ bleeding tendency
- Ginkgo - ↑ bleeding tendency & platelet dysfunction
- Ginger - platelet dysfunction
- Ginseng - HTN
- Kava - platelet dysfunction
- Dong quai - ↑ bleeding tendency
- Yohimbine - HTN, arrhythmia



CARDIOVASCULAR DRUG INTERACTIONS

- Warfarin
 - Dong quai, Garlic - case reports of increased INR*
 - Ginkgo - case report of CNS hemorrhage
 - Ginseng - case report of decreased INR
 - St. John's wort - CYP3A4 induction (decrease effect)

*inconsistent information regarding warfarin and garlic interaction found

Review by Valli in 2002
Journal of the American College of Cardiology



10 POPULAR BOTANICALS

1. Echinacea
2. St. John's Wort
3. Black Cohosh
4. Ginger
5. Cinnamon
6. Turmeric
7. Saw Palmetto
8. Valerian
9. Lemon Balm
10. Peppermint oil



This is St. John's Wort

CARDIOVASCULAR DRUG INTERACTIONS

- Anti-platelet drugs
 - Dong quai, Kava, Ginger, Ginkgo - in vitro antiplatelet activity
 - Garlic - case reports of increased bleeding time
 - Ginkgo - case reports of hemorrhage
- Digoxin
 - Herbal laxatives (buckthorn, senna) – potassium loss leading to digoxin toxicity
 - St. John's wort - reduces digoxin serum levels
 - Ginseng (Siberian): possible interference



ECHINACEA *E. augustifolia, E. purpurea*

PRIMARY USE: supportive therapy for colds and infections of respiratory and urinary tracts, enhancing immune response

Some studies show use shortens durations of URIs
Cochrane review 2000

PROPOSED ACTION: immune-modulating, anti-inflammatory

DOSE: dried powdered herb cap: 1 gram tid



ECHINACEA
E. augustifolia, E. purpurea

CONTRAINDICATIONS: German Commission E contraindicates in progressive systemic diseases like TB, leukocytosis, collagenosis, MS, HIV/AIDS, autoimmune disease (theoretical risk)

ADVERSE EFFECTS: allergy is rare but can occur, particularly atopic individuals

DRUG INTERACTIONS: probable CYP3A4 inducer, caution when co-administered with drugs dependent on CYP3A4 or CYP1A2



ST. JOHN'S WORT
Hypericum perforatum

CONTRAINDICATIONS: not for severe depression

ADVERSE EFFECTS: may cause increased sensitivity to sunlight, anxiety, dry mouth, dizziness, gastrointestinal symptoms, fatigue, headache, sexual dysfunction

DRUG INTERACTIONS: Numerous, induces cytochrome P450 CYP3A4, P-glycoprotein
Anticoagulants, cyclosporine, digoxin, OCP, protease inhibitors, statins, SSRIs, irinotecan



ST. JOHN'S WORT
Hypericum perforatum

PRIMARY USE: mild to moderate depression, anxiety, OCD, PMS, herpes
NOT severe depression –not appropriate
NIH RCT 2002 - JAMA

PROPOSED ACTION: antidepressant, antiviral and antimicrobial when used topically

DOSE: dose used in clinical trials: 500-1800 mg/d
Standardized to 0.3% hypericin, 2-5% hyperforin, or both



BLACK COHOSH
Actaea racemosa

PRIMARY USE: menopausal symptoms, PMS, dysmenorrhea
Studies are mixed – long-term data not yet available

PROPOSED ACTION: estrogen modulating, antirheumatic, spasmolytic

DOSE: standardized to 26-deoxyactein (1 mg in each 20mg dose of extract)
Clinical trials use Remifemin 20-80mg bid



BLACK COHOSH
Actaea racemosa

CONTRAINDICATIONS: pregnancy/lactation, controversy over safety in persons with history of estrogen dependent tumors

ADVERSE EFFECTS: low incidence of headaches, GI complaints, heaviness in legs, weight problems. Some reports of possible hepatotoxicity (no conclusive link per NIH). One case report of seizures.

DRUG INTERACTIONS: monitor on BP meds, anti-platelet agents (trace amount of salicylic acid in herb)



GINGER
Zingiber officinale

CONTRAINDICATIONS: active gallstone disease
German Commission E contraindicates use in pregnancy, although studies have shown short-term use is safe

ADVERSE EFFECTS: bloating, gas, heartburn, nausea, potentially ulcerogenic, may cause contact dermatitis

DRUG INTERACTIONS:
anticoagulants/antiplatelet agents

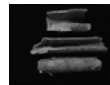


GINGER
Zingiber officinale

PRIMARY USE: nausea and vomiting (motion sickness, pregnancy, post-operative), dyspepsia, osteoarthritis

PROPOSED ACTION: antiemetic, anti-inflammatory, antiplatelet, digestive stimulant

DOSE: dried ginger 2-4 grams/day
Clinical trials for n/v in pregnancy used 1 gm/d

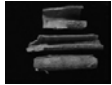


CINNAMON
Cinnamomum cassia

PRIMARY USE: Diabetes mellitus type 2, hypercholesterolemia, GI upset
NIH studies currently – DM, PCOS

PROPOSED ACTION: attenuates insulin resistance, lipid-lowering effects, antioxidant, antimicrobial

DOSE:
1-4 grams/day of cinnamon bark extract



CINNAMON
Cinnamomum cassia

CONTRAINDICATIONS: ulcers, pregnancy, essential oil should not be ingested

ADVERSE EFFECTS: GI irritation

DRUG INTERACTIONS: caution with diabetes medications



TURMERIC
Curcuma longa

CONTRAINDICATIONS: gallstone disease, avoid in pregnancy

ADVERSE EFFECTS: indigestion, nausea, diarrhea

DRUG INTERACTIONS: caution with antiplatelet drugs and anticoagulants



TURMERIC
Curcuma longa

PRIMARY USE: inflammatory diseases or conditions, arthritis, dyspepsia
Much recent attention – studies to come

PROPOSED ACTION: curcuminoids with anti-inflammatory, anticancer, antioxidant properties. Inhibits TNF alpha

DOSE: standardized extracts 95% curcuminoids, 1-2 grams daily
Piperine (found in black pepper) enhances absorption



SAW PALMETTO
Serenoa repens

PRIMARY USE: mild to moderate BPH, cystitis

Several small studies suggest improvement in BPH symptoms. Large study in 2006 showed no effect in mod to severe BPH

PROPOSED ACTION: anti-inflammatory, antiprostatic, interferes with conversion of testosterone

DOSE: if using capsules, liposterolic extract 160-320 mg/day



SAW PALMETTO
Serenoa repens

CONTRAINDICATIONS: none

ADVERSE EFFECTS: generally mild, may cause GI upset

DRUG INTERACTIONS: none

Note: does not affect PSA levels



VALERIAN
Valeriana officinalis

CONTRAINDICATIONS: none aside from use in children under age 3

ADVERSE EFFECTS: mild. Headaches, GI upset, some people experience restlessness and stimulation. No evidence of potentiation with alcohol ingestion.

DRUG INTERACTIONS: may potentiate effects of other CNS depressants



VALERIAN
Valeriana officinalis

PRIMARY USE: insomnia, stress, anxiety, nervous tension

Research suggests may be helpful for insomnia, but not enough evidence overall

PROPOSED ACTION: anxiolytic, mild sedative, hypnotic

DOSE: usually standardized to 0.3-0.8% valerenic acid, doses in studies range 300-600 mg/day



LEMON BALM
Melissa officinalis

PRIMARY USE: insomnia, anxiety, cold sores, dyspepsia, Alzheimer's disease
Most studies – in combination with other herbs

PROPOSED ACTION: anxiolytic, sedative, antibacterial, antiviral, enhance mental functioning

DOSE: herbal teas, essential oil, topical creams, extract 300-500 mg 3x daily or PRN



LEMON BALM
Melissa officinalis

CONTRAINDICATIONS: none

ADVERSE EFFECTS: mild GI effects

DRUG INTERACTIONS: thyroid medications, caution with CNS depressants

Commonly used with valerian, hops, chamomile



PEPPERMINT OIL
Mentha x piperita

CONTRAINDICATIONS: GERD or gastric ulcers, avoid in pregnancy

ADVERSE EFFECTS: mild, possible GERD, headache

DRUG INTERACTIONS: cytochrome P450 inhibitor, cyclosporine, antacids, H2 blockers, PPI



PEPPERMINT OIL
Mentha x piperita

PRIMARY USE: nausea, indigestion, IBS, URI symptoms

Studies for IBS mixed – some evidence it may be modestly effective

PROPOSED ACTION: anti-spasmodic, antiseptic

DOSE: enteric coated capsules between meals



HERBS

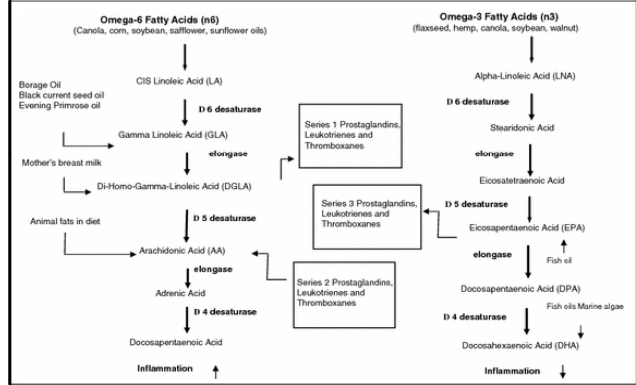


- Natural products most common CAM therapy used by US adults and children
- Increasing research being conducted
- Potential adverse effects
- Quality concerns – educate yourself and your patients
- Many potential benefits
- More treatment options for your patients

Supplements in Primary Care

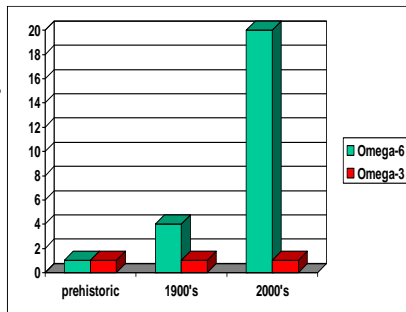
Ruslana V. Kurpita, MD, DABHM
 Clinical Assistant Professor
 Department of Family Medicine
 Ohio State University Medical Center

Metabolic Pathway of Essential Fatty Acids



Essential Fatty Acids

Linoleic/Alpha-linoleic ratio in Western diets is 20:1 to 40:1 – ideal thought to be 4:1 to 1:1



Metabolic Pathway of Essential Fatty Acids

- **Delta 6 desaturase (D6D)**
 - Rate limiting enzyme
 - Both LA (omega-6) and ALA (omega-3 – soy, flax) depend on D6D
 - Limited quantity



Delta 6 desaturase (D6D)

- **Function impaired by**
 - Excess cholesterol, sugar and alcohol consumption
 - Trans-fats
 - Stress hormones
 - Smoking
 - Gender
 - Aging
 - Cofactor deficiency – Mg, Zn, biotin, Vit B3, B6 and C
 - Diabetes
- **Only 0.2-8% of ALA is converted to EPA and only about 0.5% to DHA (in studies on humans)**

OMEGA 3 FATTY ACIDS

- **Antiatherosclerotic** – may make arteries more elastic, reduce the risk of high blood pressure triggering plaque rupture
- **Improve endothelial function**
- **Increase vasodilatation**
- **Reduce triglycerides level, raise HDL, decrease Lp (a), and increase particle size of LDL**
- **Decrease free radical production**



Omega-3 essential fatty acid (Alpha-linoleic)

**EPA (eicosapentaenoic acid)
DHA (docosahexaenoic acid)**

- **Effects:**
 - **Antiarrhythmic** – electrically stabilize the heart muscle cells
 - **Anti-inflammatory** – convert into anti-inflammatory eicosanoids (prostaglandins and leukotriens) – may stabilize arterial plaque. EPA inhibits D5D enzyme which converts DGLA to arachidonic acid
 - **Antithrombotic** – decrease stickiness of platelets, reduce risk of forming a blood clot. Decrease fibrinogen and blood viscosity



OMEGA 3 FATTY ACIDS

- **Anti-cancer effects** – reduce inflammation and angiogenesis, decrease oncogenes expression, induce cell differentiation, suppress NFkB, suppress apoptosis blocker bcl-2, reduce cachexia
- **DHA** – reduces insulin resistance in overweight patients (improves cell membrane receptor function and signal transduction)





Omega 3 Fish Oil

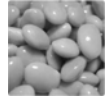
- Low omega-3 levels in plasma and red blood cells are associated with depression. Epidemiological research suggests eating fish lowers the risk of depression and suicide.
- Higher fish and fish oil intake has been linked to decreased risk of developing Alzheimer's disease in population studies.
- Might slow cognitive decline in patients with very mild cognitive dysfunction.



Safety of fatty acid supplementation

• ALA (flax, soy)

- Nine cohort and case control studies show association between either ALA intake or ALA blood content and prostate cancer with mechanism not understood
- In vitro data shows that ALA promotes prostate cancer



Omega 3 Fish Oil



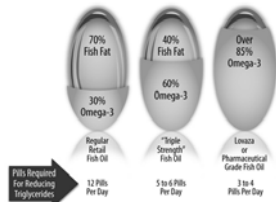
- Other uses:
 - Abdominal, menstrual cramping, dysmenorrhea, menorrhagia, joints, cognitive impairment, skin
 - Dose:
 - 2000-3000 mg po bid-tid (use triple strength only – EPA/DHA should be > 50% of serving size)
- SFx: Gen well tolerated; fishy burp (keep in freezer), doses > 3 g/day may have anti-platelet activity

Safety of fatty acid supplementation

• Fish oil

- Concerns about increased bleeding time in the scientific literature, but there are no published reports
- May increase LDL by approximately 5% in those with elevated triglycerides, but the additional LDL is large particles – less pathogenic

Purchasing considerations



- Liquid Fish oil - more concentrated, more economical
- Capsules
 - Concentration on EPA/DHA should be >50% of the capsule
 - Majority of capsules offer 20-30%, some 50-60% and only a few offer >70%
 - Lovaza (Omacor) – 1gm caps – 840mg of EPA+DHA

Purchasing considerations

- Choose a company independently certified for quality manufacturing by NSF, NPA, USP or TGA
- Choose brand that passed independent analysis by www.consumerlab.com
- Not Consumer Reports testing – they do not specify methodology in their report

Purchasing considerations

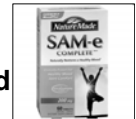
- Quality control
- Choose brand that has testing from www.ifosprogram.com
- Watch for
 - Mercury less than 10 ppb
 - Dioxins (total) less than 1 ppt
 - Oxidation (total) less than 13meq/L
 - PCB's (total) less than 45 ppb



SAMe



- Indications:
 - Depression, OA
- Dose:
 - Depression 400-800 mg po bid
 - OA 200 mg po bid
- Comments:
 - Produced endogenously by ATP activation of methionine; SAMe synthesis is closely linked to B12 and folate metabolism



SAMe

- **Mech:** associated with increased serotonin turnover and elevated dopamine and norepinephrine levels; beneficial in OA due to analgesic and anti-inflammatory effects.
- **SFx:** Associated with higher doses: flatulence, nausea, vomiting, diarrhea, constipation, dry mouth, headache, mild sleep disturbance, loss of appetite, sweating

Melatonin

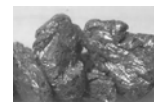
- **Comments:**
 - Endogenously produced in pineal gland from tryptophan.
 - Light inhibits melatonin secretion, and darkness stimulates secretion.
 - Hot water feet soaks stimulate production of melatonin
- **SFx:**
 - Gen well tolerated; daytime drowsiness(20%), headache(7.8%), and dizziness(4%).
 - In perimenopausal women, melatonin has caused a resumption of spotting or menstrual flow.

Melatonin

- **Indications:**
 - circadian rhythm disorders, sleep-wake cycle disturbance, improved sleep latency, but not efficiency
 - Light inhibits melatonin secretion, and darkness stimulates secretion.
 - Hot water feet soaks stimulate production of melatonin
- **Dose:** 0.3 – 5 mg po qhs (immediate and sustained forms available)



Calcium

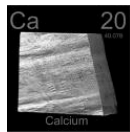
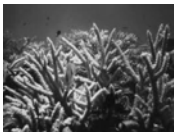


Facts:

- We start losing our bone density at age 30 y/o
- Calcium supplementation is associated with 12% reduction in fractures
- Dietary sources give the greatest benefit
- Calcium taken with food, and in divided doses improves absorption

NIH guidelines on Ca+

- Women < 65 using HRT: 1,000 mgs
- Menopausal women not on HRT: 1,500 mgs
- All women over 65: 1,500 mgs



Magnesium

- Indications:
 - Osteoporosis
 - PMS
 - Migraines
 - Muscle aches/cramps
 - Anxiety
 - Constipation
- Dose: magnesium Oxide 250 mg po bid-tid
- Sfx: diarrhea if taken in high doses (topical magnesium can be considered)



A Little Extra Magnesium
to Keep Your Cells Younger

Skeletal and hormonal effects of magnesium deficiency. Rude RK, Singer FR, Gruber HE. J Am Coll Nutr. 2009 Apr;28(2):131-41.

Calcium

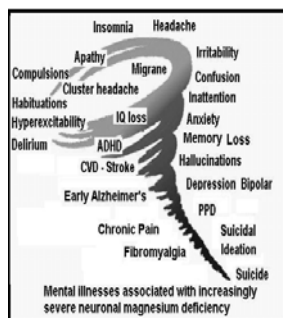
- Can uncover magnesium deficiency – constipation while taking
- May need magnesium replacement at the same time



Magnesium

- RBC magnesium level more accurate reflexion
- Keep serum level at 2.5
- Best tolerated 30 min after meal or at bedtime (also assists with sleep) (try to avoid Ca+Mg forms)

Magnesium



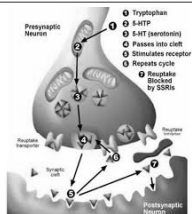
- RBC magnesium level more accurate reflexion
- Keep serum level at 2.5
- Best tolerated 30 min after meal or at bedtime (also assists with sleep) (try to avoid Ca+Mg forms)

Adrenal support

- Check cortisol and DHEA serum levels
- Short term DHEA replacement often will normalize cortisol levels
- Long term high doses associated with
 - BP elevation
 - prostate, testicular ca
 - overandrogenization in women due to conversion to testosterone

5-HTP (5-hydroxytryptophan)

- Indications:
 - insomnia, depression, anxiety
- Dose:
 - 300-400 mg at HS
- Mechanism:
 - increases serotonin levels
 - caution in conjunction with SSRI and St. John's Wort
- Dietary sources:
 - meat, fish, beans and eggs



Adrenal support

- Dosing
 - 10-25 mg PO daily for women
 - 25-50 mg PO daily for men
- Maintain serum levels
 - 200-400 mcg/dl women
 - 400-600 mcg/dl men
- Once feel better - wean and start Rhodiola (Rhodiola rosea) – can be taken long term

Vitamin D



- Vitamin D deficiency is now associated with increased risk for breast cancer, ovarian cancer, celiac disease, kidney disease, immunological problems, and inflammation response.
- Ethnicities having darker complexions are at highest risk, with African Americans at the greatest risk

Scientific documentation of the relationship of vitamin D deficiency and the development of cancer. Edlich R, Mason SS, Chase ME, Fisher AL, Gubler K, Long WB 3rd, Giesy JD, Foley ML.J Environ Pathol Toxicol Oncol. 2009;28(2):133-41.

Vitamin D

- Oral D 3 700-800 IU daily with or without Ca seems to reduce fracture risk in elderly people. NNT=27 to prevent one nonvertebral fracture, and NNT=45 to prevent one hip fracture (tx 2-5 yrs)
- Women with serum levels of about 52 ng/ml had a 50% lower risk of developing breast cancer compared to women with serum levels of less than 13 ng/ml, corresponding to about 4000 IU/day

Vitamin D



- 60-90% of individuals have serum vitamin D levels < 32. This includes those taking supplementation
- Approximate cost of the test \$20
- Low levels of vitamin D reduce Ca⁺ absorption to 10% of ingested dose
- Dose:
 - Current guidelines from the National Osteoporosis Foundation are 1,000 IU daily for adults at age 50 and older
 - 2000-4000 IU/day D3 maintenance
 - 50K IU D2 1-2x/wk x 12 wks for deficiency
- Vitamin D3 is absorbed best, and is available in liquid form

Vitamin D

- Healthy menopausal women who take supplemental calcium 1400-1500 mg/day plus vitamin D3 1100 IU/day have a 60% lower relative risk for developing cancer of any type; NNT=25

Vitamin D: what is an adequate vitamin D level and how much supplementation is necessary? Bischoff-Ferrari H Centre on Aging and Mobility, University of Zurich, Department of Rheumatology and Institute of Physical Medicine, Zurich, Switzerland.

Primary prevention of colorectal cancer. Chan AT, Giovannucci EL. Gastroenterology. 2010 Jun;138(6):2029-2043.e10. Review.

Strontium ranelate

- **Indications:** bone health
- **Dose:** 2 grams po daily, providing 680 mg elemental strontium
- **Comments:** Stimulates bone formation and reduce bone resorption. Reduced the risk of vertebral fractures by 40% in postmenopausal women with osteoporosis and a history of vertebral fracture. Increased BMD by 14% at the lumbar spine and 8% at the femoral neck.
- **SFx:** mild and transient nausea, diarrhea, headache, dermatitis, and eczema.

• *Strontium ranelate in osteoporosis. Reginster JY. Curr Pharm Des. 2002;8(21):1907-16. Review*
 • *Current and emerging pharmacologic therapies for the management of postmenopausal osteoporosis. Lewiecki EM. J Womens Health (Larchmt). 2009 Oct;18(10):1615-26. Review.*

Energy production

- **Aspartate and Malic acid 1 gm BID x 12wks**
 - improve levels of thiamine pyrophosphate (TPP) (low in mitochondrial dysfunction syndrome causes high levels of lactic acid, and muscle pain)
- **Carnitine**
 - only acetyl-L form is effective
 - D-L form can worsen symptoms
- **CoQ-10 100 mg BID**
 - improves exercise tolerance
 - is depleted by statin drugs





B-complex and Folic Acid

- **Indications:**
 - Menopause transition, helps with mood symptoms, bloating, energy level, concentration
 - Integrative Breast Care in women with dense breasts, family history of breast cancer, personal history of breast biopsy
- **Dose** B-100, or B-50 Time release 1-2 a day before meals, last dose should not be after 4-5 PM
- **SFx:** nausea



Folate, vitamin B12 and postmenopausal breast cancer in a prospective study of French women. Lajous M, Romieu J, Sabla S, Boutron-Ruault MC, Clavel-Chapelon F. Cancer Causes Control. 2006 Nov;17(9):1209-13

How to Find Quality Products

- **Look for Product Seals**
 - 
 - 
 - 
- **Confirm the identity and quantity of the ingredient declared on the label**
- **Confirm product is free of contaminants and undeclared ingredients**
- **Demonstrate conformance to industry GMPs** 
- **On-going monitoring**

USP Verified Mark

- **USP Dietary Supplement Verified Mark**
Allowed for finished products that:
 - Pass GMP inspection
 - Pass documentation review
 - Pass testing for strength, quality, purity
 - Pass post verification surveillance testing
 - Independent 3rd party certification



Reputable Web Recourses

- **Canada's Natural Health Products Compendium of Monographs**
www.hc-sc.gc.ca
- **Consumer Labs**
www.consumerlab.com/
- **Natural Medicine Comprehensive Database**
www.naturaldatabase.com/



Reading the Label

- **Statement of identity**
- **Net quantity**
- **Name and place of business**
- **Nutrition labeling**
- **Ingredient list**

Reputable Web Recourses

- **Consumer Reports Rating**
<http://www.consumerreports.org/health/home.htm>
- **Natural Standard**
<http://www.naturalstandard.com>
- **Office of Dietary Supplements (ODS) Fact sheets**
www.ods.od.nih.gov



Final points

- Ask patients about all the supplements and vitamins they are taking
- Most of the time they will not volunteer information
- Show interest in their preferences



OSU CENTER FOR INTEGRATIVE MEDICINE

- Opened in 2005
- MDs
- Nutrition/Supplements
- Chiropractic
- Massage therapy
- Acupuncture
- Ayurveda
- Community classes (yoga, nutrition, etc)



Final points

- Ask them to bring bottles with them
- Check for repeated ingredients, especially fat soluble vitamins (risk of overdose)
- If questions refer to CIM

