A Blurb on Herbs...

♦ Annual sales of botanical dietary supplements in the U.S. now exceed $1.2 billion
♦ Only $53 million in herbs are sold in pharmacies
♦ Patients don’t tell their health care provider that they use herbal remedies
**Myth or Reality**

- "Natural is better"
- "Natural is safe"
- "Herbal remedies are not like drugs"
- "Herbal remedies don’t interact with other drugs"

**Legal Status**

- Drugs (OTC & prescription) are regulated by the FDA
- Most herbal remedies/products are NOT regulated by any agency for safety or efficacy
- Herbal remedies are sold as “dietary supplements”
- Law prohibits making “medical claims”
Legal Status: Dietary supplements

- NOT considered drugs in the USA but rather food supplements used for health maintenance
- NO requirement for proof of efficacy/safety prior to marketing
- Burden of proof on the FDA to prove that a supplement is harmful prior to restriction/ removal from the market
- Manufacturers required to submit reports of serious adverse events to the FDA

Safety

- Most herbs used in cooking are considered safe
- Some are regarded as safe, but may need to be avoided by certain individuals
- Other herbs should be used only when supervised by a health care professional
- Herbal products can and will interact with either prescription or OTC drugs
**Chromium**

- **Use:** promote glycemic control, increase muscle mass; weight reduction
- **MOA:** increases insulin receptor sensitivity and enhances glucose transport, may enhance lipid metabolism
- **Adverse effects:** indigestion
- **Dosage:** 50-200 mcg/day
- **Caution use in patients w/ renal dysfunction**
- **Effectiveness:** possibly effective for improving glycemic control
Coenzyme Q-10

- **Use:** improve cardiovascular health
- **MOA:** antioxidant
- **Adverse effects:** GI upset, loss of appetite, nausea and diarrhea are rare
- **Dosage:** 200-600 mg/day
- Lipid lowering agents (i.e. simvastatin) reduce production of CoQ-10
- **Effectiveness:** no conclusive data to support its use in CHF, HTN, hyperlipidemia

Glucosamine

- **Use:** reduce pain and inflammation of arthritis, reverse the deterioration of joints
- **MOA:** may increase the repletion of synovial fluid and possibly repair eroded tissue
- **Adverse effects:** GI upset, diarrhea
- **Dosage:** 1500 mg TID
- **Effectiveness:** conflicting evidence to support its use in osteoarthritis/rheumatoid arthritis; may improve pain
Omega-3 Fatty Acids

♦ Use: lower cholesterol, prevent heart disease
♦ MOA: inhibits platelet aggregation and causes vasodilation, modest anti-inflammatory effects
♦ Adverse effects: fishy taste, belching
♦ Dosage: 1 gram daily
♦ Possible interaction w/ anticoagulants, aspirin
♦ **Effectiveness:** may reduce risk of major coronary events (death, non-fatal acute MI or nonfatal stroke) by 19%

Selenium

♦ Use: prevent cancer and heart disease
♦ MOA: enhanced resistance of LDL against oxidation, may alter platelet aggregation
♦ Adverse effects: loss of hair and nails, skin lesions, gastroenteritis (with high doses)
♦ Dosage: 20-70 mcg/day
♦ **Effectiveness:** no conclusive evidence that it prevents heart disease/lowers cholesterol; no benefit in preventing cancer
### Vitamin C - Ascorbic Acid

- **Use:** prevent/treat cold/flu, prevent cancer, heart disease, increase wound healing
- **MOA:** antioxidant as well as restores vitamin E’s antioxidant properties
- **Adverse effects:** nausea, abdominal cramps and diarrhea
- **Dosage:** 200-400 mg/day
- **Effectiveness:** no conclusive evidence that it prevents heart disease, cancer, wound healing; may reduce duration of cold/flu

### Vitamin E - Tocopherol

- **Use:** prevent Alzheimer’s disease, promote wound healing, treat/prevent heart disease
- **MOA:** prevents LDL oxidation and inhibits platelet aggregation
- **Adverse effects:** sore breasts, fatigue, muscle weakness, intestinal cramps, diarrhea
- **Dosage:** 100-800 International Units/day
- **Effectiveness:** no conclusive evidence that it improves Alzheimer’s disease, wound healing; not useful for CAD, hyperlipidemia
Zinc

- **Use:** prevent, treat or reduce severity of cold/flu, promote wound healing
- **MOA:** may block the adhesion of rhinovirus to nasal epithelium, mild anti-inflammatory activity
- **Adverse effects:** decreases HDL and immune suppression with high doses
- **Dosage:** 12-15 mg/day
- **Effectiveness:** decreases duration of cold/flu symptoms; no conclusive data in wound healing

Herbal Remedies
Chamomile

- **Use:** digestive aid
- **MOA:** antispasmodic and anti-inflammatory effects in the gastrointestinal tract
- **Generally recognized as safe** by the FDA
- **Dosage:** tea as needed
- **Effectiveness:** reduces severity of acid reflux, epigastric pain, cramping, nausea, and vomiting compared to placebo

Echinacea

- **Use:** cold/flu
- **MOA:** immune-stimulant, anti-inflammatory and possibly cytotoxic activity
- **Adverse effects:** no serious side effects known
- **Contraindicated in immune compromised patients**
- **Effectiveness:** some preparations modestly reduce cold symptom severity and duration
**Feverfew**

- **Use:** migraine headache
- **MOA:** anti-inflammatory properties and reduces the secretion of serotonin and histamine
- **Adverse effects:** no serious side effects reported
- **May prolong bleeding time; possible interaction w/ anticoagulants**
- **Contraindicated in pregnancy and breast feeding**
- **Effectiveness:** conflicting evidence that it reduces the frequency of migraine headaches

**Garlic**

- **Use:** lower cholesterol
- **MOA:** affects the synthesis of cholesterol, may reduce platelet aggregation
- **Adverse effects:** bad taste, nausea, GI upset, sweating, offensive odor
- **Possible interaction w/ anticoagulants**
- **Effectiveness:** may slow development of atherosclerosis
**Ginger**

- **Use:** nausea/vomiting
- **MOA:** $5HT_3$ antagonist (antiemetic effect), inhibits platelet aggregation
- **Adverse effects:** potential for bleeding or bruising
- **Potential interaction w/ anticoagulants**
- **Caution use in pregnancy**
- **Effectiveness:** may reduce severity of N/V in some patients; possibly safe in pregnancy

**Ginkgo**

- **Use:** improve memory, impotence
- **MOA:** inhibits platelet aggregation, increases cerebral/peripheral blood flow (?)
- **Adverse effects:** mild GI disturbances, HA, dizziness, vertigo
- **Use w/ caution in patients taking aspirin, warfarin or NSAID -** may cause bleeding
- **Effectiveness:** might modestly improve some measures of cognitive function; ineffective for impotence
Ginseng

♦ Use: improve endurance, reduce stress & fatigue
♦ MOA: may affect platelet adhesiveness/blood coagulation
♦ Adverse effects: nervousness, HA, increased BP, vaginal bleeding
♦ May cause hypoglycemia or alter bleeding time
♦ Notorious for being adulterated
♦ Effectiveness: no conclusive evidence to support is use for endurance, stress, fatigue

Grape Seed Extract

♦ Use: improve circulation, reduce inflammation
♦ MOA: antioxidant
♦ Adverse effects: no reports in humans but components of grape seed extract have caused hepatotoxicity
♦ No drug interactions have been reported...yet
♦ Effectiveness: limited evidence: reduces subjective symptoms of chronic venous insufficiency and may improve venous tone
Hawthorn

♦ Use: lower BP, treat tachycardia, reduce angina
♦ MOA: inhibits vasoconstriction and promotes vasodilation of blood vessels, depresses the CNS
♦ Adverse effects: hypotension and CNS depression w/ high doses
♦ Use w/ extreme caution in patients on cardiovascular medications
♦ **Effectiveness:** contradictory evidence about its effect on heart disease

Kava-Kava

♦ Use: relieve anxiety, muscle relaxer, improve fatigue
♦ MOA: may bind to GABA receptors causing sedation
♦ Adverse effects: drowsiness, scaly skin (prolonged use), CNS depression (high dose)
♦ Potentiates effects of alcohol, benzodiazepines
♦ Contraindicated in pregnancy, breast feeding and depression
♦ **Effectiveness:** may be effective for anxiety; superior to placebo
Ma Huang

- **Use:** enhance energy, stimulant
- **MOA:** CNS stimulation, bronchodilation and vasoconstriction
- **Adverse effects:** tachycardia, palpitations, agitation, anxiety, fever, sweating, seizures
- **Has been associated with** *deaths* due to MI, CVA
- **Contraindicated in** HTN, CAD, CHF, thyroid disease, DM, BPH and depression
- **Effectiveness:** effective as a stimulant; possibly effective for obesity

Milk Thistle

- **Use:** treat liver disorders; cirrhosis and hepatitis
- **MOA:** alters livers cells to prevent uptake of toxins, enhances regeneration of liver cells, antioxidant properties; increases glutathione
- **Adverse effects:** mild laxative (occasional)
- **No known contraindications or interactions**
- **Effectiveness:** does not significantly affect mortality or LFTs in EtOH liver disease; might improve LFTs in chronic active hepatitis; more evidence needed to support its use
**Evening Primrose Oil**

- **Use**: reduce risk of cardiovascular disease
- **MOA**: may reduce inflammation, platelet aggregation and blood vessel reactivity
- **Adverse effects**: indigestion, nausea, HA
- **Dosage**: 0.6-6 g daily
- **Use extreme caution in patients w/ seizures**
- **Effectiveness**: no evidence to support its use

**St. John’s Wort**

- **Use**: mild-moderate depression
- **MOA**: inhibition of serotonin, norepinephrine and GABA uptake, may also have dopaminergic activity
- **Adverse effects**: photosensitivity, serotonin syndrome
- **Avoid use with other antidepressants or agents that stimulate the CNS or alter neurotransmitters**
- **Effectiveness**: more effective than placebo; might be as effective as TCAD, SSRI; more data needed to establish its role
**Saw Palmetto**

- **Use**: urinary symptoms of BPH
- **MOA**: alters the conversion of testosterone to dihydrotestosterone, mild anti-inflammatory
- **Adverse effects**: GI upset or HA (rare)
- **No known drug interactions…yet**
- **Does not reduce size of an enlarged prostate**
- **Recommend medical evaluation prior to trial**
- **Effectiveness**: inconsistent and contradictory evidence; mild to moderate relief of symptoms

**Valerian**

- **Use**: relieve restlessness, nervousness; sleep aid
- **MOA**: may alter GABA concentrations
- **Adverse effects**: HA, insomnia, cardiac disturbances (chronic use)
- **Dosage**: 400 mg (capsules) QHS prn, 1-3 g (tea) or 1-3 ml (tincture) QD-TID and QHS
- **Avoid concurrent use of sedatives/hypnotics**
- **Effectiveness**: modestly reduces the time to sleep onset; insufficient evidence to support its use for anxiety
Yohimbe

- **Use:** impotence, erectile dysfunction
- **MOA:** causes release of norepinephrine resulting in CNS stimulation and increased blood flow
- **Adverse effects:** nervousness, anxiety, irritability, tachycardia, hyper/hypotension
- **Contraindicated in:** renal or hepatic disease as well as patients with psychiatric disorders or anxiety
- **Effectiveness:** helpful for impotence/ED; can improve sexual dysfunction with SSRI

Evidence-Based Resources

- **Pharmacists Letter/Prescribers Letter Natural Medicines Comprehensive Database**
- **Natural Standard**
  - http://www.naturalstandard.com
THE END