“Snap out of it.”

Mike Baldwin
DOES SALAD HAVE SIDE EFFECTS?

The Hidden Side of Herbal Medicine
ORIGIN OF HERBAL MEDICINE

• The National Center for Complementary and Alternative Medicine recognizes herbal remedies as a form of alternative medicine including Oriental medicine and Ayurvedic medicine (AAFP).

• Oriental medicine has its roots in China while Ayurveda originates from India. (Life Goals Inc. and Herbs Direct)

• Both developed from the observation and idea that certain plants have certain effects on human wellbeing and arose from a series of hypothesis on what specific effect the plants provided by nature in their environment had on humans (Phram).
WHEN DO PEOPLE TURN TO HERBAL MEDICINE

• Offers some hope for life long incurable diseases
  • Diabetes
  • Alzheimer
• Doesn’t require a doctor’s visit
  • Thought of as cheaper
• [http://www.youtube.com/watch?v=m0Eo7ju54aY](http://www.youtube.com/watch?v=m0Eo7ju54aY)
SOME CLAIMS

• “The Traditional Chinese Medicine is an approach to natural health and a form of holistic natural healing that has been applied successfully for almost 5000 years vs. the new drug based approach that has been around less than 100 years” (Lifegoals Inc)

• Herbal medicines are advertised as “all natural” and “safe treatment options” with “no side effects” (Herbalife; Jirage; Alibaba). After all, herbal medicines come from plants.

• http://www.youtube.com/watch?v=omWuVdZQtpg

• http://www.healthyyounaturally.com/categories.asp?cat=Natural+Herbal+Remedies
## Natural Herbal Remedies

Natural herbal remedies for safe, effective natural healing that deliver excellent results naturally

**Categories** » Natural Herbal Remedies » All Products

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aches - Pains - Sprains</td>
<td>Herbal remedies to effectively and quickly heal aches, joint pains and minor sprains.</td>
</tr>
<tr>
<td>Acne - Skin Ailments</td>
<td>Herbal remedies to naturally and effectively address acne &amp; skin ailments.</td>
</tr>
<tr>
<td>Allergies -- Asthma - Bronchitis</td>
<td>Herbal remedies to overcome the symptoms of allergies, asthma and bronchitis.</td>
</tr>
<tr>
<td>Bacterial - Viral Infections</td>
<td>Natural antibiotics to naturally and effectively combat bacteria and viral infections.</td>
</tr>
<tr>
<td>Blood Pressure &amp; Heart</td>
<td>Herbal remedies that effectively help address blood pressure, heart &amp; related conditions.</td>
</tr>
<tr>
<td>Cancer</td>
<td>Herbal remedies to naturally and effectively address cancer related conditions.</td>
</tr>
</tbody>
</table>
Cancer

Herbal remedies to naturally and effectively address cancer related conditions.

Categories » Natural Herbal Remedies » Cancer

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E-Tea Herbal Supplement (100)
E-Tea is a modern-day version of a herbal combination that can be enjoyed as the traditional tea by adding the contents to boiling water. It may also be taken a...

Cost: $37.33
ADD TO CART

GreenZone Whole Food Supplement (100)
Green foods help us sustain energy, boost the immune system, strengthen connective tissues & provide the body with the benefits of cleansing & detoxification

Cost: $29.20
ADD TO CART

High Potency GrapPine Herbal (60)
High Potency GrapPine contains proanthocyanidins (PACs), a highly bioavailable, water-soluble class of flavanoids with strong antioxidant activity & helps prote...

Cost: $51.53
ADD TO CART
CAN ANY MEDICINE HAVE NO SIDE EFFECTS?

• You can never say with certainty that a substance has no side effect
SECONDARY PLANT COMPOUNDS:

OF COURSE THEY HAVE SIDE EFFECTS
Table 30.1  A Sampling of Medicines Derived from Seed Plants

<table>
<thead>
<tr>
<th>Compound</th>
<th>Example of Source</th>
<th>Example of Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Atropine</td>
<td>Belladonna plant</td>
<td>Pupil dilator in eye exams</td>
</tr>
<tr>
<td>Digitalin</td>
<td>Foxglove</td>
<td>Heart medication</td>
</tr>
<tr>
<td>Menthol</td>
<td>Eucalyptus tree</td>
<td>Ingredient in cough medicines</td>
</tr>
<tr>
<td>Morphine</td>
<td>Opium poppy</td>
<td>Pain reliever</td>
</tr>
<tr>
<td>Quinine</td>
<td>Cinchona tree (see below)</td>
<td>Malaria preventative</td>
</tr>
<tr>
<td>Taxol</td>
<td>Pacific yew</td>
<td>Ovarian cancer drug</td>
</tr>
<tr>
<td>Tubocurarine</td>
<td>Curare tree</td>
<td>Muscle relaxant during surgery</td>
</tr>
<tr>
<td>Vinblastine</td>
<td>Periwinkle</td>
<td>Leukemia drug</td>
</tr>
</tbody>
</table>

Dr. O’s slides also on page 633 of Campbell and Reece’s *Biology*
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<tr>
<th>Compound</th>
<th>Plant</th>
<th>Use</th>
<th>Side Effect</th>
</tr>
</thead>
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<tr>
<td>Atropine</td>
<td>Belladonna plant</td>
<td>Pupil dilator in eye exams</td>
<td>Eye pain, light sensitivity, allergic reaction (drugs.com)</td>
</tr>
<tr>
<td>Digitalin</td>
<td>Foxglove</td>
<td>Congestive Heart Failure medicine</td>
<td>slow and irregular heartbeat, nausea, hallucinations, fatigue, and vision problems (Texas Heart Institute).</td>
</tr>
<tr>
<td>Menthol</td>
<td>Eucalyptus tree</td>
<td>Cough medicines</td>
<td>Allergic reaction or minor side effects (drugs.com)</td>
</tr>
<tr>
<td>Morphine</td>
<td>Opium poppy</td>
<td>Pain releiver</td>
<td>shallow breathing, slow heartbeat; stiff muscles, seizure; cold, clammy skin; confusion, unusual thoughts or behavior; severe weakness, trouble swallowing; rapid heart rate, trouble concentrating; or easy bruising, unusual bleeding (drugs.com)</td>
</tr>
<tr>
<td>Quinine</td>
<td>Cinchona tree</td>
<td>Malaria preventative</td>
<td>Jaundice, fever, chills, sweating, weakness, severe vomiting, diarrhea, vision and hearing problems, loss of appetite (drugs.com)</td>
</tr>
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<td>Plant</td>
<td>Use</td>
<td>Side Effect</td>
</tr>
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<td>Taxol</td>
<td>Pacific yew</td>
<td>Ovarian cancer drug</td>
<td>Fever, chills, pale skin, short of breath, unusual bleeding, seizure, numbness, jaundice, increased blood pressure (drugs.com)</td>
</tr>
<tr>
<td>Tubocurarine</td>
<td>Curare tree</td>
<td>Muscle relaxant during surgery</td>
<td>Drug interactions causing respiratory depression (drugs.com)</td>
</tr>
<tr>
<td>Vinblastine</td>
<td>Periwinkle</td>
<td>Leukemia drug</td>
<td>Fever, unusual bleeding, pain, burning, redness, bronchospasm, hearing, vision, speech, and balance problems (drugs.com)</td>
</tr>
</tbody>
</table>
BITTER MELON

- Used to treat diabetes mellitus
- Extracts similar to animal insulin (Basch)
- In one double blind controlled study with 100 subjects suffering from type II diabetes mellitus, “86% had decreased fasting and 2-hour postprandial blood sugar levels after intake of fresh pulp extract. Subjects in another study experienced improved glucose tolerance after drinking bitter melon juice” (AAFP).
- Side effect: miscarriages (Basch)
HERBAL MEDICATION AND SURGERY: GARLIC

- Used to treat hypercholesterolemia as well as diabetes mellitus
- Garlic has a chemical sulfur compound called allyl propyl disulfide that is an insulin competitor in the liver and increases the effect of insulin on the diabetic patient (AAFP).
- Garlic's effectiveness on lowering cholesterol is debatable since the herb seems to lower overall blood cholesterol levels but only moderately lowers low density lipoproteins and does not lower high density lipoproteins, which are of primary concern. (AAFP).
- What is clear however is that garlic decreases “blood platelet aggregation” and possibly interacts with aspirin or other non-steroidal anti-inflammatory drugs resulting in an increased tendency to bleed out (AAFP). Garlic may also lengthen the time it takes for prothrombrin to contract (AAFP).
Used to treat Alzheimer’s disease and asthma.

The Lancet describes ginkgo biloba as “phenomenally successful as an herbal antidepressant. In the USA sales increased by 2800% in 1 year, and in Europe total sales figures were around US$6 billion in 1998” (Ernst).

Ginkgo biloba has compounds called “ginkgolides, which are terpene molecules that inhibit platelet activation factor,” which is a “key mediator of asthma inflammation” (AAFP).

While a study that used ginkgo leaf liquor at the dose of 15 g, three times a day for eight weeks displayed much improvement in asthma patients, the herbal remedy compounds the risk of bleeding if taken with aspirin or warfarin before surgery (AAFP).

Image: http://old.texarkanacollege.edu/~mstorey/plants/ginko4.jpg
INTERACTION WITH OTHER MEDICATIONS: ST. JOHNS WORTH

- Used to treat depression, asthma, and Alzheimer’s disease
- Serotonin syndrome, a condition where the body produces too much serotonin for the nervous system and can lead to death if used with other antidepressants that interact with serotonin (US Library of Medicine; AAFP).
- Psychosis (nccam.nih.gov)
- *St John's wort recently has been shown to induce cytochrome P450 enzymes and, therefore, may decrease levels of coadministered medications metabolized by the same enzyme complex* (eg, cyclosporine, indinavir sulfate [Crixivan], digoxin, warfarin sodium, oral contraceptives) (AAFP).

http://nccam.nih.gov
The American Academy of Family Physicians advises doctors to tell patients to look for “herbal products labeled ‘NF’” which means National Formulary indicating that “they have been manufactured according to US Pharmacopeia standards” (AAFP).

Usp.org
A total of 59 traditional herbal preparations (20%) were likely to result in intakes of these elements significantly exceeding safety limits. Of these 59 traditional herbal preparations, intake estimates for 50 traditional herbal preparations significantly exceeded the safety limit for mercury (range = 1.4–1747 mg week); intake estimates for 26 traditional herbal preparations significantly exceeded the safety limit for arsenic (range = 0.53–427 mg week) and intake estimates for eight traditional herbal preparations were significantly above the safety limit for lead (range = 2.6–192 mg week). (Konings)
CONCLUSIONS

- Herbal remedies are not free from side effects.
- Herbal medications cause further side effects if taken with other medications.
- Herbal medication can dangerously increase bleeding risks in patients undergoing surgery.
- An alarming number of herbal remedies have excess levels of toxic metals such as mercury, lead, and arsenic as well as dangerous levels of certain trace metals.
- Despite the array of known side effects, herbal medicines continue to be advertised as “side effect free” by employees in natural food stores like the Olde Wheat Barn in Ruston, Louisiana as well as numerous online sources of alternative herbal medicine such as alibaba and herbalife.
- Herbal medicines continue to be consumed without the patient knowing the full risks associated with herbal drugs.
SOURCES


• (http://www.sciencedirect.com/science/article/pii/S0140673699004183)

• Richard T. Tovar, Renee M. Petzel, Herbal Toxicity, Disease-a-Month, Volume 55, Issue 10, October 2009, Pages 592-641, ISSN 0011-5029, 10.1016/j.disamonth.2009.05.001.

• (http://www.sciencedirect.com/science/article/pii/S0011502909000662)


