

Herbal Medicine Lecture
Spring 2011
University of Vermont
Department of Nursing



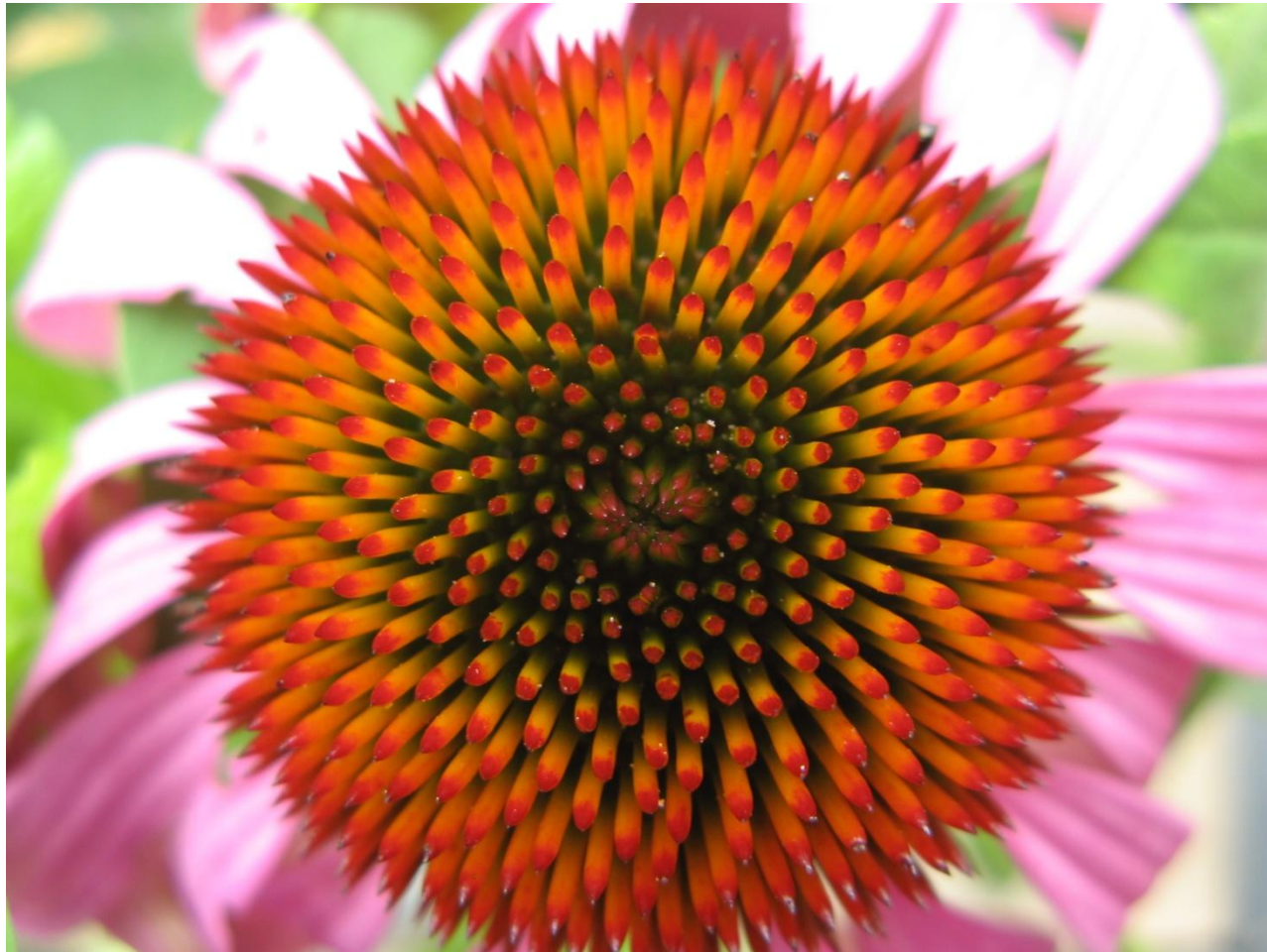
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Program Objectives:

- ❏ Understand the theory and practice of herbalism as different from, yet complementary to, standard nursing care.
- ❏ Become familiar with general areas of application for herbal medicine.
- ❏ Understand types of herb-drug interactions and begin to distinguish between known and theoretical safety concerns relevant to using herbs with pharmaceuticals.

Echinacea (*Echinacea purpurea*) ~
immune stimulant, lymphatic stimulant,
wound healer



What is Herbalism?

- ❧ the art and science of using plants & their preparations to support healthy structure & function of the body, mind, spirit; involves “micro” knowledge of the human body and plants (pathophysiology, plant chemistry), but also “macro”, pattern-based understanding of people and plants as whole beings
- ❧ there is no “one” herbal medicine; global systems include: Traditional Chinese Medicine, Ayurveda, Traditional Mexican Medicine, Greco-Roman Galenic humoral medicine



What is Herbalism?

- ✎ people have always used plants as medicine, food, and shelter, for air and clean water; 80% of the world's people still use plants as primary medicine
- ✎ incorporates view of whole person/diet/lifestyle, as well as considers individual constitution

What is Herbalism?

- ❏ herbs are generally used to maintain healthy function or to reset dysregulated functions; herbs, like food, can keep us well—truly preventive
- ❏ far less often do herbs interrupt or replace functions that are lacking or absent in the body, as surgery and medications do
- ❏ sparks body's innate healing capacity so that we heal ourselves

What does an herbalist do?

☞ educate

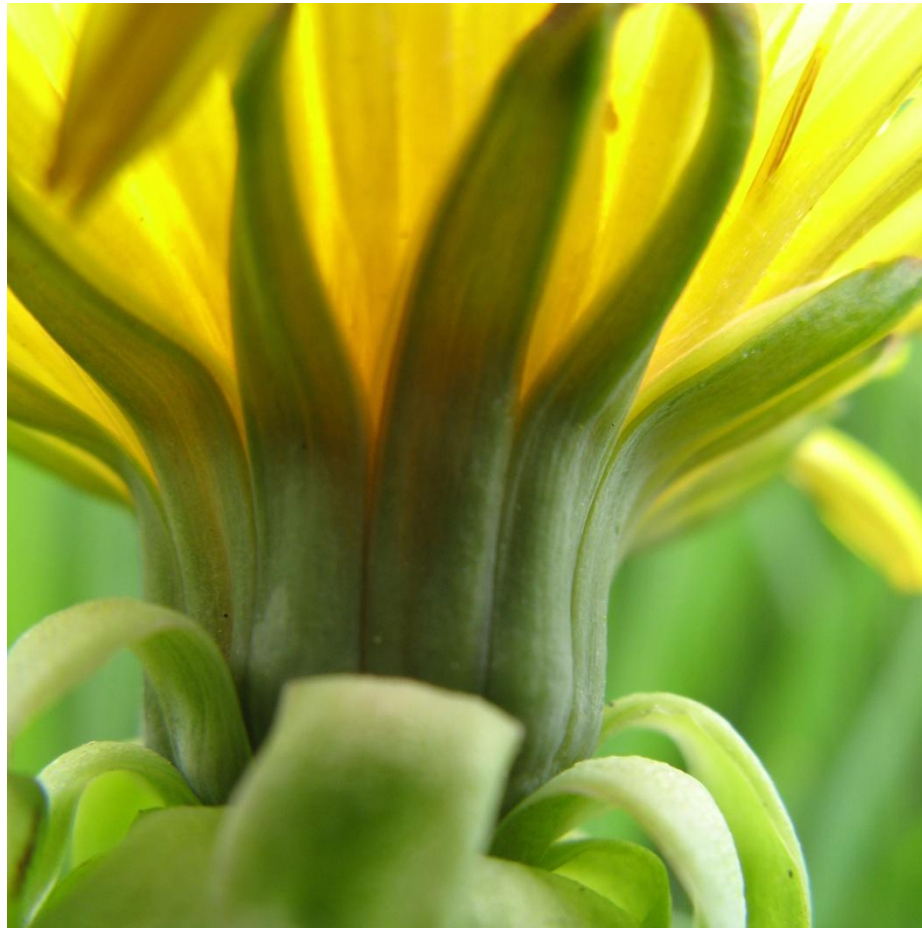
☞ legally do not practice medicine
(i.e. diagnose, treat, cure, prevent)

☞ what we do best is to support people to heal themselves, to support the body in resetting itself

☞ we provide the nudge back towards wellness

☞ we seek to connect people to plants and our natural environment as a source of healing

Dandelion (*Taraxacum officinale*) ~
liver and digestive support,
harbinger of spring





How can we work cooperatively to improve care and outcomes?

- ❏ Herbs can be used in the context of medicine, nursing, dietetics, acupuncture—they *can* be used like drugs, but have much more to offer than symptom treatment
- ❏ Conventional medicine is great at acute and emergency care (largely compensatory)
- ❏ Herbalists/herbs can provide health maintenance and support in chronic care

How can we work cooperatively to improve care and outcomes?

- ✎ Like nurses, herbalists understand that prevention and maintenance are key; herbalists/herbs can address many of the concerns that are at the root of chronic conditions that conventional medicine has fewer tools to address.



How can we work cooperatively to improve care and outcomes?

Herbs can work alone or w/conventional medicine offering support for:

- improving digestion/elimination/metabolic processes to improve effectiveness of dietary and exercise changes;
- modulate the stress response and improve energy levels (again improving outcomes of pharmaceutical and lifestyle interventions);
- modulate immune function and inflammation (among *many* other activities); improve antioxidant status



How can we work cooperatively to improve care and outcomes?

Herbs can work alone or w/conventional medicine:

- can also reduce side effects of necessary meds (especially re: digestion and mood disorders; chemotherapy and radiation);
- can reduce necessary dose of some meds (additive/synergistic effect)

Red Clover (*Trifolium pratense*) ~
mineral rich, lymphatic,
estrogen receptor modulator





Types of Herb Drug Interaction: Pharmacodynamic Interactions

There may be a direct **pharmacological interaction between a pharmaceutical medicine and a chemical constituent of a plant with its own pharmacological effect**. This is referred to as a pharmacodynamic interaction.

Pharmacodynamic interactions can be **additive, synergistic or antagonistic**.

Pharmacokinetic Interactions

Alternatively the interaction may **be pharmacokinetic, acting on the uptake, utilization or availability** of the medicine. Pharmacokinetic interactions may **manifest in several ways:**

- ❏ **1) physical or chemical interaction within the digestive tract or other assimilative area;**
- ❏ **2) via pharmacological effects of the plant on assimilative functions;**
- ❏ **3) via effects on enzymatic metabolism of medicines (involving CYP450 enzymes).**

Relative Likelihood of HDIs

A 2007 paper^[1] sheds a less fearful light on how much of an issue herb-drug interactions are in reality. Of **804 patients** surveyed in outpatient clinics for possible herb-drug interactions based on the medications and herbal medicines they were taking, **only 6% had any potential** for herb-drug interactions. **Of that 6%, 5% had no observable interaction.** Of the **1%** (8 patients with a total of 12 observable interactions), all of these were classified as **mild**. The majority of these interactions (8 of them) were between the blood sugar lowering medications of Metformin and Glyburide and the blood sugar lowering herb nopal.

Likelihood... *cont'd*

The results were mild hypoglycemia—indicating an additive effect. Of the other 4 observable interactions, only one was with an herb. The other interactions were with glucosamine and bromelain, which are not herbal medicines, but supplements.

- [1] Bush, TM et al. Adverse interactions between herbal and dietary substances and prescription medication: a clinical survey. *Alternative Therapies*, Mar/Apr 2007. Vol 13. No. 2.

Lemon Balm (*Melissa officinalis*) ~
anxiolytic, antiviral, antidepressant, favorite of bees





Evaluating Herb-Drug Interactions

HDIs are best identified by **clinical discovery**, as opposed to through speculation and extrapolation from the activity of isolated constituents or animal models.

It's important to differentiate **confirmed** information collected from repeated clinical observation and/or controlled human studies from less concrete data derived from other sources (animal, in vitro, pharmacological extrapolation).

Evaluating Herb-Drug Interactions

Consider the following when you read about a contraindication/interaction:

- ❏ What was the dosage of the herb?
- ❏ What was the dosage of the drug?
- ❏ How long was each substance being taken?
- ❏ Was there a dosage change to either substance prior to the suspected interaction?
- ❏ What other prescription or OTC medications or supplements were being taken at the time of the suspected interaction? Was the dosage of any of these substances changed?
- ❏ Were any new medications or supplements introduced immediately prior to the suspected interaction?
- ❏ Is the preparation used appropriate for the herb in question?

Evaluating Herb-Drug Interactions

- ❏ Were any new dietary or lifestyle habits introduced just prior to the suspected interaction?
- ❏ What is the individual's medical history (especially regarding liver and kidney health)?
- ❏ Does the individual fall into any special population groups more susceptible to adverse reactions (i.e. children, elderly, immuno-compromised)?
- ❏ How recent is the evidence?

Further, data about the specific herbal product also needs to be gathered:

- ❏ Has the herb undergone testing for authentication of species (i.e. is the herb in the product the same as what's listed on the label)?
- ❏ Has the herb been tested for contaminants (such as heavy metals or chemicals)?

St. John's Wort (*Hypericum perforatum*) ~
antidepressant, antiviral, wound healer, neural analgesic





Course of Action w/HDI

Simply because an HDI is confirmed, contra-indication is not the only responsible option.

Some herb-drug combinations may be administered safely under close clinical supervision. In some instances, as with drugs for hypertension or diabetes, careful monitoring can allow for continued co-administration of an herb and drug.



Course of Action

In the case of an herb that may potentiate or duplicate the effects of a medication, the dose of the drug could be lowered while the patient may continue to receive the benefits of herbal supplementation.

In these cases, the beneficial aspect of HDIs can be seen—lower drug dosing can often prevent side effects.

Interaction of *Ginkgo biloba* with antiplatelet or anticoagulant drugs?

“Results from controlled studies consistently indicate that **Ginkgo does not significantly impact hemostasis nor adversely affect the safety of co-administered aspirin or warfarin.** ...[T]he possibility of an **idiosyncratic** bleeding event due to Ginkgo use cannot be excluded on the basis of the available information. However, there is scant information from case reports or controlled trials to support the suggestion that Ginkgo potentiates the effects of anticoagulant or antiplatelet drugs. Such **high-level safety concerns for this herb are deemed to be unsupported by the currently available evidence.**”

Bone, K (2008). Potential interaction of Ginkgo biloba leaf with antiplatelet or anticoagulant drugs: What is the evidence? *Mol Nutr Food Res.* 2008 Jul;52(7):764-71.

Common Herbs with Possible HDIs



St. John's wort,
Hypericum perforatum;
Effects CYP450 enzymes



Ginger root, *Zingiber officinale*;
Effects absorption/assimilation;
only very high doses (5g/day) have theoretical concern as
anticoagulants



Dandelion leaf, *Taraxacum officinale*
Adds to effects of diuretics w/o K^+ loss



Garlic, *Allium sativum*
Adds to hypolipidemic & possibly
hypotensive effects; anticoagulant



Hawthorn berry, *Crataegus* spp.



Hawthorn leaf & flower; HDIs w/CV meds suggested, but current evidence doesn't support

Ginkgo leaf, *Ginkgo biloba*
Erroneously attributed with
anticoagulant activities



Resources

- ❏ *Winston & Kuhn's Herbal Therapy and Supplements: A Scientific and Traditional Approach* by David Winston & Merrily Kuhn, RN
- ❏ *Essential Guide to Herbal Safety* by Simon Mills & Kerry Bone
- ❏ *Principles and Practice of Phytotherapy* by Simon Mills & Kerry Bone
- ❏ *Medical Herbalism* by David Hoffman
- ❏ www.christopherhobbs.com/database/
- ❏ Vermont Center for Integrative Herbalism, Montpelier VT for further education or referrals:
www.vtherbcenter.org