

## Herbal Medicine Dosing: What is the Right Dose?

- Glen Nagel, ND, RH (AHG)
- Traditional Roots Conference
- May 21, 2016

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## Glen Nagel, ND, RH (AHG)



- Herbalist since 1984, Registered Herbalist with American Herbalist Guild.
- Former Associate Professor in Botanical Medicine with National College of Natural Medicine in Portland, Oregon, 10 years of teaching
- Former Assistant Professor at Bastyr University, in Kenmore Washington
- Lead Naturopathic Physician with Herb Pharm LLC and adjunct professor at NUNM

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## How does herbal medicine heal?



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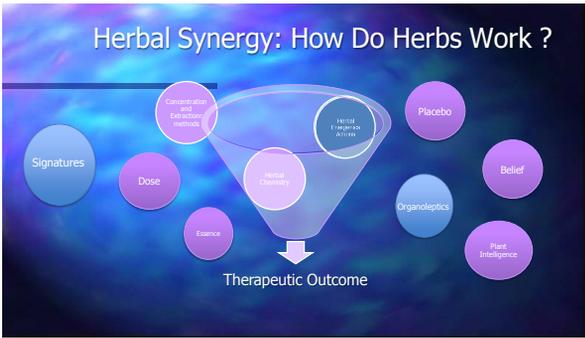
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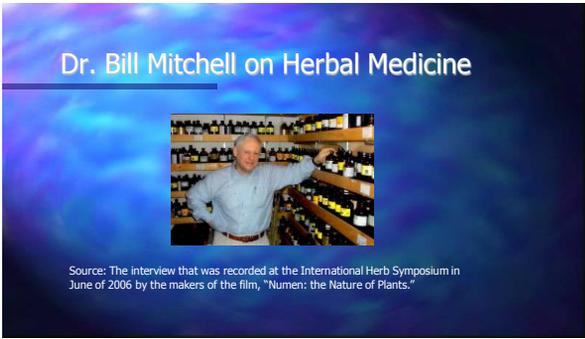
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### The Philosophical Dose

- Dose can be a physical reality
  - Drops, capsules, milligram, etc.
- Dose is a philosophy
  - Low, moderate, high
  - Receptivity of patient
  - Analysis of case, what can they perceive?

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### Awareness and Perception: The Nature of the Patient

- Energetic
- Physical
- Awareness/Perception
- Low
- High

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### The Vibrational Continuum of Healing: Physical and Energetic

Surgery Vitamins Massage Acupuncture Homeopathy  
Synthetic Drug Nutrition Herbs Reiki Prayer

←—————→

More Physical                      More Energetic  
Less Energetic                      Less Physical

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### Energy and Matter

- Newtonian model views world mechanistically.
- Einstein's model views world dynamically.
- Energy and Mass different expressions of the same force.
- $E = m c^2$

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### Poison or Potion

- The phrase *poison or potion*, consists of doublets, that is, two words that go back ultimately to the same source in another language.
- The source for both words is Latin *pti* (stem form *ptin-*), which meant "the act of drinking, a drink, or a draft, as of a medicine or poison."

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## Paracelsus on dosing



- All substances are poisons; there is none which is not a poison.
- The right dose differentiates a poison
- Paracelsus (1493--1541)

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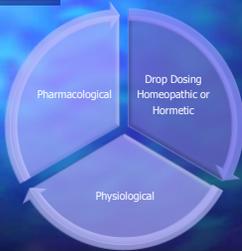
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## Three Types of Dosing



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## Herbal Medicine Dosing Systems

- Three traditions of administering herbs
- **European or Pharmacologic** : focuses on higher pharmacological amounts of plant constituents. 5 mLs, 3 times a day of a liquid hydro-alcoholic extract.
  - Moderate likelihood for interactions
- **Western or Physiologic** : Moderate amounts of medicine. 30- to 60-drop doses of a liquid hydro-alcoholic extract.
  - Minimal likelihood for potential interactions.
- **Drop dosing / Hormetic** : Small amounts of medicine. 1- to 5-drop doses.
  - Insignificant or low potential for interactions

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## General Rules on Dosing

- Most herbal products that are native complex fractions, dosed at label recommendation have a low potential for interactions
- This includes, most hydro-alcoholic extracts (tinctures) in retail setting
- Includes most teas, and capsule and tablets which are whole ground herb.
- There are always exceptions, especially with the young, old and ill.

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## Pharmacological Dosing: Drug Dosing

- A drug-like effect a physiological reaction
- Relies on the strength of the herb
- Relies on the natural healing mechanisms of the body
- For acute disease, for short term
- For strong constitutions in good health
- Side effects possible when used alone

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## Case Study: Hepatitis C

- A 35-year-old male with hepatitis C, non-responder to combination drug therapy.
- 6 years with the disease, past drug use and heavy alcohol use.
- Labs: ALT/AST range 50-150, viral load 1 million
- Case formulation

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### Case study: Hepatitis C

- Use in combination with selenium 200 mcg, lipoic acid 400 mg and milk thistle standardized 80% at 300 mg daily, with FD Milk Thistle.
- I personally like in Hep C cases, 1-2 TBS ground milk thistle seed and 300 mg of 80% milk thistle together.
- Follow up, all numbers improved significantly over a 3 month period.

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### Physiological Dosing

- Relies on the strength of the herb; relies on the natural healing mechanisms of the body
- Uses trial and error to find the minimum
- The dose necessary to produce a physiological effect and applies that dose to support rather than overriding normal function.
- Chronic disease, long-term use
- For weak constitution, in poor health
- Useful for children, elderly and those with liver or kidney disease.

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### Physiologic Prescribing: Case

- 72-yo male with poor digestion, bloating and gas. His appetite is low. Has CAD, and mild type one diabetes which is controlled with diet.
- Prescribed: *Gentiana* tincture at 3 to10 drops in water before meals.
- Action: Mistook instructions and took 3 droppersfull in water and immediately had nausea and vomiting
- Later took the correct dose and saw much improvement.

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## Drop Dosing / Hormetic

- Low dose with diluted botanicals
  - Homeopathic, Unda, Flower Essence, 1-3 drops of extracts
- Low dose with toxic botanical
  - Aconite, Belladonna, Gelsemium and others.
  - Potential for side effects

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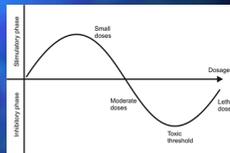
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## Hormesis / Ultra low dose

- Hórmēsis (Greek): to set in motion, excite
- Biphasic dose responses
- U or J-shaped stimulation
- Low doses can stimulate physiology and support homeostatic mechanisms
- Higher doses can inhibit physiology and suppress homeostatic mechanisms




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Applied nutritional investigation  
Chamomile tea improves glycemic indices and antioxidants

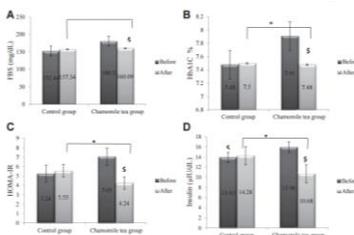


Fig. 2. Effects of chamomile tea on (A) fasting blood sugar, (B) glycosylated hemoglobin, (C) homeostasis model assessment-insulin resistance (HOMA-IR), and (D) serum insulin. Data were presented as means  $\pm$  SE for 12 diabetic patients in each group. \* $p < 0.05$  for within group comparisons (paired sample t-test); † $p < 0.05$  for between group comparisons (ANCOVA adjusted for baseline value, intake of oral hypoglycemic agents, and changes of weight and calorie during the study and duration of diabetes).

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### Low Dose: Toxic?

- Acting as or having the effect of a poison; poisonous: a toxic drug.
- Using the term "toxic botanicals" means you are prescribing poisons (potions) to your patient.
- That's why we need a botanical makeover.....

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### "Low Dose" or "Drop Dose" Botanicals

- Focus on the prescribing method
- Low or drop dosing
- Describes a group of plants that are not tonic herbs
- Everything low is now cool!



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### Remember!

- Using low-dose or drop-dose herbs is using potentially toxic and possibly fatal plant based poisons
- Caution advised!



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### Commonly Used "Drop dose" Herbs

- *Aconitum*
- *Aspidosperma quebracho*
- *Atropa belladonna*
- *Baptisia tinctoria*
- *Bryonia alba*
- *Convallaria*
- *Datura stramonium*
- *Digitalis purpurea*
- *Ephedra sinica*
- *Gelsemium*
- *Hyoscyamus*
- *Iris versicolor*
- *Leptandra*
- *Lithospermaum*
- *Lobelia inflata*
- *Lycopus virginicus*
- *Pausinystalia yohimbe*
- *Phytolacca*
- *Piper methysticum*
- *Piscidia*
- *Podophyllum*
- *Rauwolfia*

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### Commonly Used "Drop dose" Herbs

- *Ricinis (Castor bean)*
- *Sanguinaria*
- *Selenicereus (Cactus grandiflorus)*
- *Tanacetum vulgare*
- *Veratrum alba, viride*
- *Viscum album, flavescens*




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### Potency of Low-Dose Tinctures

- Highest quality is important, many are imported from Europe.
- Choose suppliers carefully, many don't carry them now because of liability issues.
- Ask for Assayed levels of potent components if possible, example *Rauwolfia*
- Assayed is not the same as a standardized drug.
- Consider interactions with compounding.
- Do not make these yourself!

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### Eclectic Physician System of Dosing

- Used uniformly made specific medicines. (Lloyd Brothers Pharmacy)
- Prescribed for specific symptoms.
- Commonly prescribed 5 to 10 drops of specific medicine to 4 ounces of water. Patients took 1 teaspoon 3 times a day.
- Used herbs in homeopathic doses. (1x)

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### Lloyd on Dose from Materia Media 1922

- "As a rule, doses usually administered are far in excess of necessity and it is better to err on the side of insufficient dosage and trust to nature, than to overdose to the present or future harm or danger to the patient."
- "With potent drugs especially should the greatest care be had to give the smallest possible quantities that will achieve results, and never to give them without a well defined indication."

Dr. Harvey Felter from The Eclectic Materia Medica, Pharmacology and Therapeutics. 1922 pg 38 .

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### Low Dose Dosing by Felter

- "It remains a clinical fact that many drugs of supposedly non potent character, when given in minute doses, best influence conditions of disease, even though no explanation of the action can be given."
- "The fractional dose of *Matricaria* or of *Pulsatilla* effects a positive control over nervous phenomena that cannot be duplicated by the more powerful agents or doses."

■ Dr. Harvey Felter from *The Eclectic Materia Medica, Pharmacology and Therapeutics*. 1922, p. 38.

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### Case: Low Dosing

- 38-yr woman with anxiety and episodic tachycardia for last 3 years.
- Work up by cardiologist shows nothing abnormal.
- They wanted to prescribe beta blockers.
- Natural lifestyle, minor digestive problems, low thyroid controlled by natural thyroid.
- Onset of symptoms began after hiking trip to high country.

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### Case Analysis

- Look for causes
- Anxiety and fear at onset
- High altitude hiking with lightning striking all around
- Fear for life left layer of fright
- Prescription: Aconite 6c, twice daily for 3 days.
- Symptoms resolved and did not return after first dose.

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Herbdance with  
*Aconitum napellus*

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*Aconitum napellus*

- Monkshood
- Wolfsbane
- Friars cap



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Medicine or poison ?



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Monkshood

- Fear of Death
- Anxiety
- Great restlessness



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First signs of death ....

- Tingling of the mouth and numbness
- strangling sensation in the throat and difficult swallowing
- sense of sinking and pain in the epigastrium



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sharp slightly bitter taste, and a rapidly developing sense of



warmth and tingling in the tongue

Young Aconite

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Nausea and salivation followed

- by violent vomiting
- great prostration



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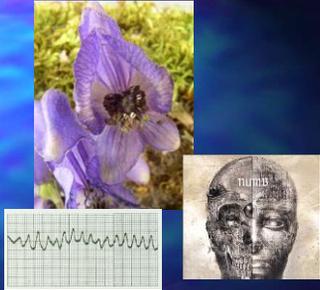
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hands and mouth numb, ventricular fibrillation



The collage includes a purple flower, an ECG strip showing irregular, chaotic waves characteristic of ventricular fibrillation, and a close-up of a person's face with the word 'numb' written over the mouth area.

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### Cold Extremities



The image shows a group of people lying on a frozen lake, with a large field of ice crystals surrounding them, illustrating the concept of cold extremities.

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Irregular heart Beat

Loss of speech control



The collage includes a person lying in a hospital bed, two medicine bottles, and a doll's head, illustrating the symptoms of irregular heart beat and loss of speech control.

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Fixed staring eyes



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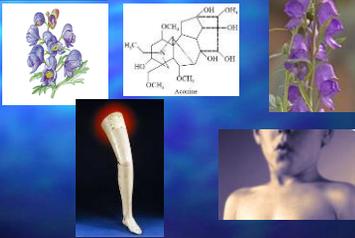
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the limbs become numb,  
breathing becomes  
shallow and slow



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Quiet Stillness  
Death by Aconite



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### General Ideas for Prescribing Low-Dose Herbs

- Toxicity is always about dosing.
- Are you ready, willing and able to walk the poison path?
- This is a calling not a profession.
- Use your wisdom, and call in the ancient wisdom.

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### General Ideas for Prescribing Low Dose Herbs

- 90 percent of our *materia medica* is non-toxic tonic herbs
- The remainder have the strong potential to do harm.
- You must have comfort in the common herbs before using the low dose.
- Liability issues due to toxicity
- Misunderstanding in the medical profession.
- Would you use them for yourself or family?

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### General Ideas for Prescribing Low Dose Herbs

- Window of error is small and Are you comfortable with this?
- Consider using the homeopathic potencies first. Aconite 6c instead of tincture
- Generally there are many issues with obtaining high quality and consistent strength of these herbs
- In the past there were no other alternatives, today there may be.

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### Similarities Between Herbalism and Homeopathy

- Both systems are complete systems of healing. Can be used alone.
- Both systems can treat all types of conditions.
- Both systems are plant based.
- Both systems are generally free of side effects or the side effects are minimal.

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### Differences Between Herbalism and Homeopathy

- |                           |                           |
|---------------------------|---------------------------|
| ■ <b>Herbalism</b>        | ■ <b>Homeopathy</b>       |
| ■ Medicine crude strength | ■ Medicine highly diluted |
| ■ Law of opposites        | ■ Law of Similars         |
| ■ Chemical medicine       | ■ Energetic medicine      |
| ■ Complex herb mixtures   | ■ Single substance        |
| ■ Origins ancient         | ■ 250 years old           |
| ■ Remedies with taste     | ■ Tasteless remedies      |
| ■ Sensual experience      | ■ Mental experience       |
| ■ Tribal origin           | ■ Medical origin          |

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### Principles of Homeopathy

- Law of Similars or Like Cures Like.
- The more dilute the remedy, the more potent. Infinitesimal dosing.
- Individual treatment.
- One medicine at a time.

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### What is Homeopathy

- Homeopathy is a safe and effective system of medicine used by millions of people for over 200 years.
- Homeopathic medicines are prepared from natural sources and are used in extremely small amount.
- They are recognized as drugs by the US food and Drug administration

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### What is Homeopathy

- Homeopathy is a non-toxic form of medicine that can be safely used with infants, children and adults.
- Homeopathy treats the whole person, physical, emotional and mental.
- Homeopathy treats each person as an individual. Treating the underlying cause not the name of the disease.

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### What is the Vital Force ?

- A homeostatic and self-regulatory mechanism that constantly maintains the physiology of the body.
- A living and intelligent energy that is responsible for healing and maintaining balance in your body.
- Other names like, life force, qi or prana.

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### Suppression vs. Cure

- Suppression occurs when a treatment removes symptoms on one level but causes them to appear at a different often deeper level.
- Many drugs like cortisone and antihistamines can suppress the vital force, making the person sicker.

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### Homeopathic Dosing

- Variable degrees of potency.
- Law of dilution: the more dilute the more powerful the medicine.
- Low-potency remedies (6 - 30c) can be repeated more frequently.
- High-potency remedies (200c to 10m) are repeated less frequently.
- All homeopathic medicines are diluted and succussed (shaken.)

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### Homeopathic and Herbal Remedy Indications

- Commonly the homeopathic indications are the toxic dose of the plant
- Homeopathic provings are the repeated and often toxic symptoms of the plant
- The herbal indications may be opposite of homeopathic but not always.
- Most often true with toxic plants
- *Belladonna* a good example

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### The Dual Nature of Belladonna

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|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>■ Herbal Use (Lloyd Dose Book)</li> <li>■ Indications: Dull expression, dilated pupils</li> <li>■ Drowsiness with impaired circulation</li> <li>■ Soft pulse with slow breathing</li> </ul> | <ul style="list-style-type: none"> <li>■ Homeopathic Indications (Boericke)</li> <li>■ Heat, redness and throbbing pains</li> <li>■ Flushed face, furious excitement</li> <li>■ Restless movements with burning.</li> </ul> |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

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### The Paradoxical reaction

- All medicines have a dual nature.
- A primary chemical effect.
- A secondary energetic effect.
- Valerian is a good example.
- Every patient is unique and responds differently.

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## Integrating Homeopathy and Herbalism

- Matter and energy are two forms of the same energy. Don't be stuck on one form of medicine.
- Study the medicines from both traditions.
- Develop personal experience.
- Be open to new ideas and experiences.
- Familiarity leads to intuitive knowledge.
- Experiment with new medicines.
- Communicate openly with your patients.
- Practice thankfulness and gratitude.

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## Herbal Medicine Dosing Systems:

- What method when?
- **European or Pharmacologic :**
  - Acute problems, significant pain or spasm.
  - Need for high levels of plant constituents
- **Western or Physiologic**
  - Between both systems, Acute or Chronic
- **Drop dosing / Hormetic :**
  - Chronic long term use
  - Mental or emotional use

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## Belief and Intention: The Nature of the Practitioner

- We see our patients through our beliefs
- Intention precedes results (action)
- What the doctor thinks will help often will help.
- Healing happens in a context of respect and openness.

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### Intent with Herbal Medicine

Problem or Disease  
"The stick"

Herbs  
"the Dog"

Practitioner  
Intent

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### Forms of Herbs

- Teas
- Tinctures/extracts
- Pills, capsules
- Fresh herbs
- Powders
- Drop doses
- Homeopathic, hormetic, flower essence... others

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### Drops

- Alcohol lowers the cohesive nature of the drop making them smaller
- A drop of 50% alcohol tincture is about 1/2 minim.
- For this reason measuring the doses in mL is more accurate method than adding sufficient quantity of water to 4 ounces

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## Liquid Volume

- One minim = one drop water from standardized pipette
- One milliliter (mL) = 16.2 minims = 1000 microliters (mCL)
- One fluid Dram (dr) = 60 minims = 3.7 mL
- One ounce = 480 drops
- On Average a 45% tincture has 2.4 drops per water drop!

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## The problem of Pills or Tablets

- Body's sensing system (organoleptic) is intricately designed
- Pills fake the body by giving no information till digested
- Tablets are 1/3 binders and fillers
- No matter what they contain, pills can never be food.
- A 2000-calorie daily intake of food is approximately 1000 capsules!





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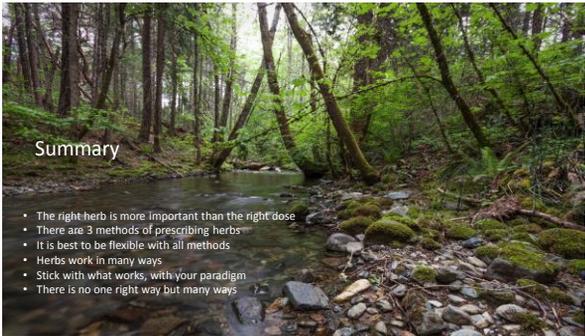
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## Summary



- The right herb is more important than the right dose
- There are 3 methods of prescribing herbs
- It is best to be flexible with all methods
- Herbs work in many ways
- Stick with what works, with your paradigm
- There is no one right way but many ways

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