CANRA Part 2 | Course 13

BOTANICAL MEDICINE

Original teaching material based on uploaded notes, updated with evidence and high-priority patient-safety considerations. Compiled October 30, 2026.

For learners: these examples are not a clinical dosing guide. Treatment requires current product information, diagnosis, contraindication screening and applicable professional scope.

Course map

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Lesson 01 | Botanical Pharmacognosy, Identification and Herbal Actions

Identify medicinal plant material, its constituents and the meaning-and limits-of herbal-action terminology.

A precise botanical identity

A botanical prescription begins with a verified Latin binomial, plant part, preparation and strength. A common name such as “ginseng” may refer to different species with distinct evidence and risks. Species, part and extract cannot be interchanged without checking equivalence. Document batch and supplier details where possible.

Language of herbal actions

The source lectures classify adaptogens, alteratives, carminatives, demulcents, astringents, nervines, vulneraries, immunomodulators and others. These are historical functional categories, not proof that an herb treats a disease. A demulcent contains soothing mucilage; an astringent contains compounds often associated with tissue tightening and reduced secretions.

Matching action to symptom

Examples from the uploaded action chart include Althaea officinalis and Ulmus rubra as traditional demulcents, Mentha piperita as a carminative, and Calendula officinalis as a traditional topical vulnerary. Explain the traditional rationale separately from any controlled clinical evidence.

Constituents and pharmacology

Plant chemistry includes alkaloids, glycosides, tannins, volatile oils, flavonoids, mucilage, saponins and resins. Their extraction, metabolism and safety profiles differ. “Natural” does not imply harmless; concentration and bioavailability alter exposure.

Clinical communication

When discussing an herb, use language such as “traditionally used for” or “has limited evidence for” when appropriate. Confirm standard treatment, red flags, patient preferences, medication list and measurable follow-up before considering an adjunct botanical.

Clinical case

A patient requests “ginseng” to improve fatigue. Their product label only says “ginseng extract”. What information is missing?

Model reasoning

Clarify species (Panax versus Eleutherococcus, for example), plant part, extract, dose, quality and current medication exposure. Assess common medical causes of fatigue and do not infer benefit from the common name.

Self-check

- Can you distinguish a traditional action category from a proven clinical indication?
- Why do plant part and extraction method matter?
- What should be recorded about identity and quality?

Practice in website: ../question-bank/question_bank.php?course=botanical_medicine&lesson=1&mode=study

Lesson 02 | Growing, Wildcrafting, Harvesting, Drying and Quality Control

Apply the 2017 botanical preparations notes to identification, contamination prevention and safe storage.

Why source quality is central

The uploaded preparation notes emphasize variability from weather, soil, predation, harvest timing and processing. Identity verification and testing help manage variability. Wildcrafting requires lawful access, conservation and avoidance of threatened populations.

Timing of harvest

The course notes generally associate roots with early spring or post-frost harvesting and aerial parts with growth or pre-flowering periods. These are heuristic examples; each species has its own validated best collection window.

Drying and garbling

Dry soon after harvesting with suitable airflow and modest temperature. Excess moisture permits mould growth; excessive heat may degrade volatile constituents. Garbling means separating desired leaves or flowers from unwanted stem material.

Contaminants and documentation

Assess potential pesticides, heavy metals, microbes, mycotoxins, adulterants and mistaken identity. Document collection site, species, plant part, date, drying conditions, supplier, batch number and testing.

Storage and acceptance checks

Use airtight, labelled containers protected from moisture, light and pests. “Three years” quoted in the older notes is only a broad historical rule, not a universal shelf-life. Assign stability based on each product and quality information.

Clinical case

A wildcrafted herbal batch looks and smells normal but lacks a verified identity and documentation of collection site. Can it be safely dispensed?

Model reasoning

No. Organoleptic appearance alone cannot establish identity or contaminant status; quarantine the lot until identity, source and quality requirements are met.

Self-check

- What is garbling?
- Why is a fixed universal shelf-life unreliable?
- Name four possible herbal contaminants.

Practice in website: ../question-bank/question_bank.php?course=botanical_medicine&lesson=2&mode=study

Lesson 03 | Infusions, Decoctions, Powders, Tinctures and Topicals

Choose and compare preparations without treating historic extraction times as universal dosing instructions.

Infusion versus decoction

Infusions steep leaf and flower material in water; decoctions involve heating harder material such as roots, bark or rhizomes. The source lectures provide illustrative steeping and decoction times. Actual process and dose are species-, constituent-, and product-specific.

Tinctures and extraction ratios

A tincture commonly uses ethanol-water to extract and preserve constituents. An extraction ratio such as 1:5 records the starting crude herb to liquid ratio, not the final active-ingredient amount. Identify fresh-versus-dry starting material, ethanol percentage and dose.

Powders and capsules

Powdered herbs and capsules can improve portability, but grinding affects stability and contamination exposure. Standardized extract and crude powder are not equivalent gram-for-gram. Check excipients and swallowing ability.

Oil-based and topical products

Oils, salves and creams target different constituent classes and routes. Topical availability is not permission to use a toxic herb on broken skin. Consider contact allergy, infection, and systemic absorption.

Quality control at dispensing

Verify appearance, identity, storage, expiry, batch, labelling and professional scope. Do not assume that boiling neutralizes all toxins or that herbal extraction ratios prove clinical effectiveness.

Clinical case

A student suggests substituting 500 mg of dry root powder for 500 mg of a concentrated extract. Is this automatically equivalent?

Model reasoning

No. A standardized extract differs in extraction yield and marker concentration. Compare exact species, plant part, formulation, standardization, evidence and label before substitution.

Self-check

- Which plant parts are commonly suited to infusions?
- What does a 1:5 extraction ratio indicate?
- Why are powder and extract doses not interchangeable?

Practice in website: ../question-bank/question_bank.php?course=botanical_medicine&lesson=3&mode=study

Lesson 04 | Clinical Formulation, Posology and Documentation

Use the eight-step formulation framework, with evidence, contraindication review and reconciliation of total daily dose.

The eight-step framework

The uploaded Quick Guide first confirms the assessment, then selects actions, preparation, herbs, reference doses and contraindications, proportions and duration. This provides a reasoning sequence, not a ready-to-use prescription for every patient.

Prioritization and evidence

Begin with diagnosis and conventional care; determine whether any herbal adjunct is appropriate. Select the fewest ingredients that match a defined goal, because polyherbal combinations complicate attribution of both benefit and harm.

Ratios and arithmetic

If a hypothetical formula contains 10 mL, 20 mL and 30 mL of extracts, total volume is 60 mL and the percentages are 16.7%, 33.3% and 50%. This is an arithmetic exercise only; no therapeutic dose is implied.

Write a complete order

For each ingredient record Latin binomial, part, extraction method, potency or extract ratio, volume or mass, route, frequency, duration, warnings, patient-specific precautions and follow-up plan.

Do not copy historic dose tables

The older adult acne formula in the uploaded reference is a teaching example, not current evidence of efficacy or safety. Do not use its reported dose or “none noted” contraindication entries without updated assessment of pregnancy, medications and risk.

Clinical case

A trainee writes “Arctium tincture, take twice daily” without species, strength, dose, duration or monitoring. What must be corrected?

Model reasoning

A complete record needs a verified botanical identity, plant part, product strength/extraction, dose units, route, schedule, duration, interaction and pregnancy screening, measurable goal and reassessment.

Self-check

- List the eight steps of a formulation plan.
- Calculate percentages from sample volumes.
- Which prescription fields prevent medication errors?

Practice in website: ../question-bank/question_bank.php?course=botanical_medicine&lesson=4&mode=study

Lesson 05 | Adaptogens, Nervines, Sleep and Mood Botanicals

Differentiate traditional tonic classifications from modern clinical evidence and safety.

Traditional adaptogen comparisons

The uploaded 2016 yin-yang comparison positions Panax ginseng, Rhodiola rosea, Withania somnifera, Eleutherococcus senticosus and Schisandra chinensis along traditional energetic descriptions. Such comparisons reflect a teaching model, not validated head-to-head efficacy.

Ashwagandha risk-benefit

Some preparations have limited short-term evidence for stress or sleep. Current NCCIH guidance notes rare liver injury and potential thyroid, sedative, glucose, blood pressure and immune-related interactions. Avoid in pregnancy and breastfeeding; check autoimmune and thyroid conditions.

Nervines and sedatives

Avena sativa, Scutellaria lateriflora, Passiflora incarnata and Valeriana officinalis appear in traditional nervine/sedative notes. Product evidence varies and sedative combinations can affect driving and cognition.

Mood disorder precautions

St. John's wort has a particularly high medication-interaction burden; it can induce drug metabolism and cause serotonergic toxicity with certain antidepressants. Assess suicidality, mania, psychosis and current psychiatric care before considering any mood-related herbal product.

Patient-centred counselling

Avoid promises about “adrenal fatigue,” “detox,” or universal immune boosting. Monitor an agreed functional outcome; explain evidence limitations and stop or refer when symptoms are severe or worsening.

Clinical case

An adult taking sertraline asks to start St. John's wort for mood while continuing the prescription. What is the safest response?

Model reasoning

Do not combine without prescriber/pharmacist review. There is risk of serotonin toxicity and changes in drug concentrations. Screen for severe depression and ensure evidence-based mental-health care.

Self-check

- Which adaptogen claims are traditional descriptions?
- Name two important safety flags for ashwagandha.
- Why is St. John's wort high risk in a medication review?

Practice in website: ../question-bank/question_bank.php?course=botanical_medicine&lesson=5&mode=study

Lesson 06 | Digestive, Respiratory and Hepatobiliary Botanicals

Evaluate traditional GI and pulmonary indications while recognizing conventional investigation and referral thresholds.

Carminatives and demulcents

Peppermint is traditionally used for digestive symptoms; some enteric-coated peppermint-oil formulations have evidence in selected IBS populations, but reflux may worsen. Althaea and Ulmus are traditional demulcents with limited condition-specific clinical data.

Bitters, cholagogues and hepatic language

The historical botanical action lists include bitter, cholagogue, hepatic and alterative. They describe traditional effects and cannot establish treatment of hepatitis, biliary obstruction or chronic liver disease.

Respiratory and cough caution

Licorice appears in older respiratory and demulcent formulas, but glycyrrhizin can cause hypertension, hypokalemia, edema and arrhythmia. It is unsuitable for casual use in people with cardiac or renal risk.

Treat urgent conditions first

Persistent dysphagia, GI bleeding, unexplained weight loss, chest pain, severe dyspnea, hypoxemia, and suspected pneumonia or sepsis require evidence-based assessment, not substitution with herbs.

Document a limited adjunct trial

Identify exact indication, preferred formulation, interaction screening, concurrent treatment and objective follow-up. Stop if symptom control worsens or medication interaction is suspected.

Clinical case

A patient with hypertension and low potassium requests high-dose licorice root tea for a persistent cough. What is the concern?

Model reasoning

Glycyrrhizin-containing licorice can worsen hypokalemia, blood pressure and rhythm risk. Assess the cough medically and avoid recommending high-dose licorice.

Self-check

- How are demulcents traditionally classified?
- Why may peppermint worsen reflux?
- What are the key licorice safety concerns?

Practice in website: ../question-bank/question_bank.php?course=botanical_medicine&lesson=6&mode=study

Lesson 07 | Cardiovascular, Metabolic and Immune Botanicals

Interpret traditional cardiotonic and immunomodulator categories without replacing proven therapy.

Cardiotonic is not a treatment licence

Crataegus (hawthorn) is a traditional cardiotonic; this does not justify replacing guideline-directed therapy for heart failure, hypertension or ischemic disease. Evaluate possible blood-pressure and cardiac-medication interactions.

Recognize toxic cardiotonic plants

Convallaria majalis and Digitalis species contain cardiotoxic glycosides and are not suitable for self-prescribing. Their therapeutic index and toxicity can be severe.

Metabolic considerations

Diabetes medications and botanical supplements may affect each other through absorption, metabolism or glucose effects. In a person using insulin or sulfonylureas, consider hypoglycemia and ensure glucose monitoring.

Immunomodulator versus immunostimulant

The course notes use Ganoderma and Lentinula as immunomodulators and Echinacea as an immunostimulant. These traditional classifications do not prove treatment or prevention of serious infection.

Immunosuppressed patients

Check transplant medicines, chemotherapy, autoimmune conditions, infection symptoms and vaccine advice. Never replace antimicrobial treatment or urgently indicated evaluation with “immune support.”

Clinical case

A transplant recipient asks to take a multi-herb “immune booster” while on tacrolimus. What is the priority?

Model reasoning

Perform full product and medication reconciliation with the transplant team or pharmacist. Potential pharmacokinetic and immune effects can compromise transplant outcomes.

Self-check

- Why are digitalis-like plants high risk?
- What does “immunomodulator” mean in traditional notes?
- What evidence is required before claiming a clinical benefit?

Practice in website: ../question-bank/question_bank.php?course=botanical_medicine&lesson=7&mode=study

Lesson 08 | Skin, Wound Care and Anti-inflammatory Botanicals

Evaluate topical herbal use, evidence, contamination and unsafe historical wound remedies.

Traditional vulneraries

Calendula officinalis is traditionally categorized as a vulnerary. Topical use requires assessment for contact allergy, infection, severity and whether approved wound care is necessary.

Comfrey warning

Symphytum officinale contains potentially hepatotoxic pyrrolizidine alkaloids, making oral products particularly concerning. Do not infer safety of a preparation or topical use from historical popularity; product-specific regulatory status matters.

Skin-specific alteratives

Arctium, Berberis aquifolium and Taraxacum are listed as traditional alteratives for skin complaints in the uploaded notes. These are not established treatments for eczema, acne or psoriasis.

Phototoxicity and essential oils

Essential oils can irritate or sensitize skin. Some plant constituents are phototoxic; dilution and patch testing do not eliminate risk. Avoid applying unknown preparations to burns, deep wounds or infants.

Escalation and prevention

Rapidly spreading erythema, fever, purulent infection, significant burns, deep ulcers or signs of systemic illness require clinical evaluation and standard care.

Clinical case

A patient proposes oral comfrey for joint pain because a historical handout calls it a vulnerary. What should you explain?

Model reasoning

Oral comfrey carries pyrrolizidine-alkaloid liver toxicity concerns. Historical “vulnerary” classification does not establish safe oral use; recommend evidence-based assessment and safer alternatives.

Self-check

- Define vulnerary as a traditional action.
- What is the oral comfrey safety concern?
- Name topical red flags requiring referral.

Practice in website: ../question-bank/question_bank.php?course=botanical_medicine&lesson=8&mode=study

Lesson 09 | Reproductive and Endocrine Botanicals

Approach reproductive symptoms with diagnosis, pregnancy screening, and cautious interpretation of historical herb categories.

Clinical assessment comes first

The uploaded reproductive notes review amenorrhea, ovulatory dysfunction, perimenopause and infertility. Before botanicals, exclude pregnancy where relevant and assess medication effects, thyroid disease, prolactin, PCOS, structural causes and red flags.

Traditional uterine and hormone categories

Vitex agnus-castus, Cimicifuga racemosa, Angelica sinensis and other herbs appear under historical emmenagogue, uterine-tonic and hormonal-modulator headings. These categories are not evidence that a botanical is effective or safe for a specific reproductive condition.

Avoid high-risk historical herbs

Pennyroyal, blue cohosh and other strongly uterine-active or toxic plants may pose major risks, especially in pregnancy. Historical dose charts should not be used as patient-directed prescribing recommendations.

Menopause and infertility counselling

Evidence varies by standardized preparation; discuss established hormonal and nonhormonal options when appropriate. Infertility requires appropriate medical assessment rather than substituting a traditional formula.

Special populations

Pregnancy, breastfeeding, adolescents and people with hormone-sensitive disorders warrant a much higher safety threshold. Medication reconciliation and consultation with relevant clinicians are essential.

Clinical case

A woman with missed menses requests an “emmenagogue” tincture before taking a pregnancy test. What is the next step?

Model reasoning

Assess pregnancy possibility first and evaluate amenorrhea. Do not use uterine-stimulating herbs to induce bleeding or delay appropriate assessment.

Self-check

- What should be excluded before discussing amenorrhea remedies?
- Why are “hormone modulator” claims not proof of effectiveness?
- Which reproductive safety groups warrant heightened caution?

Practice in website: ../question-bank/question_bank.php?course=botanical_medicine&lesson=9&mode=study

Lesson 10 | Toxic Constituents: Alkaloids, Glycosides and Organ Injury

Recognize poisonings, clinically important chemical classes, high-risk botanicals and emergency response.

Pyrrolizidine alkaloids

The 2018 toxicity lecture emphasizes unsaturated pyrrolizidine alkaloids and hepatic sinusoidal obstruction risk. Examples include comfrey and certain other species. Species, contamination and exposure vary; risk may arise from repeated ingestion.

Dangerous alkaloids

Aconitum species contain highly toxic diterpenoid alkaloids capable of dysrhythmia and neurological toxicity. Atropa and Datura species contain tropane alkaloids associated with anticholinergic toxicity. Conium maculatum is poison hemlock, distinct from the plant commonly called water hemlock (Cicuta).

Cardiac and cyanogenic glycosides

Digitalis and lily-of-the-valley can produce severe cardiac glycoside toxicity. Cyanogenic glycosides in certain seeds can liberate cyanide under some conditions. These are poisoning topics, not therapeutic self-care suggestions.

Correct a source misclassification

The uploaded lecture associates gossypol with furocoumarins; gossypol is instead a polyphenolic compound from cottonseed. Treat the older handout as a learning prompt and verify chemistry in reliable modern references.

Urgent action

Suspected poisonous plant ingestion, altered mental status, arrhythmia, severe vomiting, seizures or cardiopulmonary symptoms requires immediate poison-centre/emergency assessment. Do not induce vomiting or substitute home remedies.

Clinical case

A patient has palpitations, vomiting and hypotension after ingesting an unknown garden plant resembling monkshood. What is the priority?

Model reasoning

Potential aconitine poisoning is life-threatening. Arrange emergency care and poison-centre consultation, preserve a sample or photograph for expert identification and support resuscitation.

Self-check

- Differentiate Conium from Cicuta.
- Name effects of cardiac glycosides.
- Why is gossypol misclassified in the historical handout?

Practice in website: ../question-bank/question_bank.php?course=botanical_medicine&lesson=10&mode=study

Lesson 11 | Herb-Drug Interactions, Contraindications and Patient Safety

Develop systematic interaction screening across CYP enzymes, P-gp, bleeding, metabolic and sedative effects.

Medication reconciliation

List prescriptions, OTC medications, supplements, alcohol, recreational products, recent starts and stops. Capture brand, botanical species, part, dose, manufacturer and batch, not just “herbal tea.”

Pharmacokinetic mechanisms

St. John's wort is a major inducer of CYP/P-glycoprotein pathways, reducing exposure to some contraceptives, transplant drugs, anticoagulants and other medicines. Goldenseal can inhibit drug-metabolizing enzymes and has been shown to lower metformin exposure in a study.

Pharmacodynamic mechanisms

Sedative herbs may add to alcohol, benzodiazepines or hypnotics. Anticoagulant or antiplatelet exposure prompts a bleeding-risk screen. Licorice can affect blood pressure and potassium. Glucose-lowering drugs require a hypoglycemia safety plan.

Pregnancy, organ disease and surgery

Screen pregnancy and lactation, age, liver or renal disease, cardiac arrhythmias, autoimmune conditions, surgery timing and prior allergic reactions. Kava products have been associated with rare, sometimes severe liver injury.

Practical response

If risk is unknown or potentially significant, defer starting the botanical, contact prescriber/pharmacist, use product-level evidence, document informed consent, and monitor for unexpected loss of drug effect or toxicity.

Clinical case

A patient using warfarin and an oral contraceptive asks whether St. John's wort is “safe because it is natural.” What should happen?

Model reasoning

Do not add it casually. It can decrease effectiveness of several medicines, with consequential outcomes. Obtain pharmacist/prescriber review and ensure appropriate contraception and anticoagulation follow-up.

Self-check

- Describe CYP induction versus enzyme inhibition.
- Which patients need especially careful interaction review?
- What should be documented when an herb is stopped or started?

Practice in website: ../question-bank/question_bank.php?course=botanical_medicine&lesson=11&mode=study

Lesson 12 | Evidence Appraisal, Canadian Regulation and Integrated Cases

Complete the prescribing loop with evidence grading, NPN verification, shared decisions and safe follow-up.

Different evidence types

Traditional use, in-vitro pharmacology, uncontrolled observations and randomized trials answer different questions. An in-vitro antimicrobial effect does not establish a clinical cure, and a constituent study may not translate to the whole herb.

Interpreting studies

Ask about botanical identity, standardization, placebo/control, randomization, sample size, outcomes, adverse events and applicability to the individual patient. Distinguish clinical benefit from surrogate biomarker changes.

Canadian natural health products

Health Canada regulates natural health products. Look for an NPN on a licensed product and check the exact product label for permitted claims, dose and warnings. NPN authorization is conditional on labelled uses, not a blanket endorsement of every claim.

Shared decisions and consent

Explain benefits and evidence uncertainty, alternative proven treatments, interaction risks, costs and monitoring. Record whether the patient chooses or declines a complementary adjunct; never delay urgent therapy.

Follow-up and adverse event reporting

Set a measurable outcome, review date and stop criteria. Report significant suspected adverse reactions using applicable Health Canada processes, recording the exact lot and concurrent products when available.

Clinical case

A patient shows a natural health product labelled with an NPN and claims it cures cancer. What should the clinician explain?

Model reasoning

An NPN indicates authorization of a product for specified labelled conditions; it does not validate unrelated claims or justify delaying oncology treatment. Review the current authorized label and refer to appropriate care.

Self-check

- What does an NPN signify?
- How can an herb trial be monitored?
- What is the difference between traditional use and evidence of efficacy?

Practice in website: ../question-bank/question_bank.php?course=botanical_medicine&lesson=12&mode=study

Practice Question Companion (120 original MCQs)

The interactive versions appear in the independent Question Bank section. The following printable questions are for self-check; answer key and rationales follow each ten-item lesson set.

Lesson 01 | Self-assessment (10 MCQs)

1. What detail best distinguishes two products both labelled “ginseng”?

A. Bottle colour

B. Retail shelf

C. Trademark font

D. Verified Latin species and plant part

2. A herbal action described as “demulcent” primarily refers to what?

A. Directly killing bacteria in blood

B. Inducing general anaesthesia

C. Soothing mucilage-containing preparations

D. Blocking all inflammation

3. Which plant is classically listed as a carminative in the uploaded notes?

A. Digitalis purpurea

B. Mentha piperita

C. Aconitum napellus

D. Conium maculatum

4. What does a traditional “alterative” classification establish?

A. A historical herbal-action category, not proven efficacy

B. A randomized trial showing cure

C. Guaranteed liver detoxification

D. A regulatory indication for cancer treatment

5. A plant extract shows antibacterial activity in a test tube. Which conclusion is valid?

A. It cures sepsis

B. It is safe in pregnancy

C. It replaces antibiotics

D. Activity in that model; clinical efficacy remains uncertain

6. Which factor is needed when comparing herbal preparations?

A. Only total bottle size

B. Only retail price

C. Extract ratio and standardization

D. Only marketing claim

7. Which named substance group includes many plant astringents?

A. Pure oxygen

B. Tannins

C. Sodium chloride

D. Vitamin D alone

8. Which claim is most evidence-appropriate for a historical remedy with no adequate trials?

A. “Traditionally used; effectiveness uncertain”

B. “Guaranteed cure”

C. “No side effects”

D. “Equivalent to any prescription medicine”

9. What should accompany Latin plant identity in an ingredient record?

A. Astrological sign

B. Retail discount

C. Seller slogan

D. Plant part and preparation

10. A patient has new severe fatigue. What comes first?

A. Immediate multi-herb tonic

B. Ignore new symptoms

C. Clinical assessment for underlying causes

D. Replace all prescriptions

Lesson 01 | Answers and rationales

1. D - Common names can hide differing species and constituent profiles.
2. C - Demulcents traditionally soothe irritated tissues via mucilaginous preparations.
3. B - Peppermint appears in the historical carminative category for digestive discomfort.
4. A - Action terminology is not a clinical effectiveness guarantee.
5. D - In-vitro activity alone does not demonstrate benefit in human disease.
6. C - Different extract strengths cannot be assumed bioequivalent.
7. B - Tannins commonly underlie traditional astringent effects.
8. A - Separate historical use from established evidence.
9. D - Part, form and strength meaningfully change exposure.
10. C - Diagnosis and urgent causes precede botanical selection.

Lesson 02 | Self-assessment (10 MCQs)

1. In the source notes, “garbling” means what?

A. Sterilizing herbs by radiation

B. Turning powder into oil

C. Separating desired leaves or flowers from stems

D. Fermenting all roots

2. Why is a fast, controlled drying process important?

A. It guarantees sterility

B. It limits mould without excessive constituent degradation

C. It removes all pesticides

D. It standardizes every batch

3. Which is a likely quality concern for wildcrafted herbs?

A. Mistaken species identification

B. Uniform extract concentration guaranteed

C. Freedom from contaminants guaranteed

D. No seasonal variability

4. Which harvest rule is safest?

A. Harvest every root during flowering

B. Harvest all aerial parts in winter

C. Ignore species and plant part

D. Use species-specific validated collection timing

5. What documentation best supports batch traceability?

A. Patient eye colour

B. Website theme

C. Supplier, lot number and harvest/production details

D. Discount percentage

6. What is a problem with moist herb material in storage?

A. Guaranteed potency increase

B. Fungal or mycotoxin risk

C. Removal of bacteria

D. Automatic detoxification

7. Why avoid long direct sunlight exposure while drying some herbs?

A. Possible degradation of heat/light-sensitive constituents

B. It creates cyanide

C. It converts all roots to bark

D. It guarantees more active ingredients

8. A batch has no identity certificate. What is the safest action?

A. Dispense because it smells normal

B. Relabel as another plant

C. Heat it and ignore identity

D. Quarantine pending verification

9. Which contaminant is relevant to herbal raw materials?

A. Only pure distilled water

B. Only table salt

C. Heavy metals

D. Only inert cellulose

10. A source says dried herbs “last three years.” How should this be handled?

A. As guaranteed expiry for every product

B. As a rough historical statement, not universal stability data

C. As proof no mould can develop

D. As permission to ignore labels

Lesson 02 | Answers and rationales

1. C - Garbling removes unwanted plant material after harvest.

2. B - Moisture and inappropriate heat compromise quality.

3. A - Wild collection requires identification and contaminant controls.

4. D - Historical rules of thumb differ between species.

5. C - Traceability supports recall and quality review.

6. B - Moisture creates conditions for microbial spoilage.

7. A - Light can degrade some constituents.

8. D - Sensory inspection alone cannot authenticate botanical identity.

9. C - Plants can accumulate environmental contaminants.

10. B - Shelf-life depends on product and conditions.

Lesson 03 | Self-assessment (10 MCQs)

1. Which plant material is usually best suited to an infusion?

A. Thick bark exclusively

B. Tender leaves and flowers

C. Solid metal

D. Unwashed stone

2. A decoction differs from an infusion mainly by what?

A. Heating harder plant material for extraction

B. Using no water

C. Always containing alcohol

D. Always being sterile

3. What does 1:5 in a dry herb tincture commonly refer to?

A. Five doses per hour

B. Five herbs per capsule

C. A clinical efficacy score

D. Initial herb mass to liquid volume ratio

4. Why must ethanol concentration be documented for tinctures?

A. It proves safety for all patients

B. It eliminates interactions

C. It affects extraction and exposure

D. It replaces botanical identity

5. Why might an essential-oil product require extra caution?

A. It is always weaker than an infusion

B. Concentrated constituents can irritate or be toxic

C. It is always safe to swallow

D. It has no interactions

6. What makes powder and standardized extract doses non-equivalent?

A. Different constituent concentrations

B. Both must have identical potency

C. Both always contain no active compounds

D. Different packaging colours

7. A product label lacks whether the herb is fresh or dried. Why does that matter?

A. It changes the plant genus

B. It guarantees purity

C. It determines legal ownership

D. Water content changes ratio interpretation

8. Which is an appropriate preparation-quality check?

A. Trust a generic “natural” logo

B. Assume all teas are safe

C. Verify identity, batch and expiry

D. Skip product warnings

9. An oral essential oil is promoted for cough in a child. What is safest?

A. Give an adult dose

B. Avoid self-directed use; assess pediatric risk and approved care

C. Assume all oils are foods

D. Mix with solvent to guarantee safety

10. Which route is relevant to local skin reactions?

A. Topical salve or cream

B. Intracranial injection

C. Unknown route

D. All routes are equivalent

Lesson 03 | Answers and rationales

1. B - Infusion suits many soft aerial parts.
2. A - Decoction applies controlled heating to roots or bark in many traditional methods.
3. D - Extraction ratios are not direct measurements of active concentration.
4. C - Solvent strength changes extraction profiles.
5. B - Concentration and route drive exposure and toxicity.
6. A - Standardization and extraction yield may differ.
7. D - Starting material affects extraction ratios.
8. C - Quality checks accompany dispensing.
9. B - Concentrated oils can be toxic to children.
10. A - Topical botanicals can still cause allergy and systemic exposure.

Lesson 04 | Self-assessment (10 MCQs)

1. What is the first step in the uploaded formulation guide?

A. Confirm the working clinical assessment

B. Buy the most expensive herb

C. Select the strongest dose

D. Ignore current medications

2. Which item is essential in a complete botanical order?

A. Only common name

B. Only a retail link

C. Only flavour

D. Latin name, part, strength, route, dose, duration

3. A hypothetical 60 mL blend has 30 mL of one ingredient. Its proportion is what?

A. 25 percent

B. 10 percent

C. 50 percent

D. 75 percent

4. Which is a problem with copying an old “none noted” contraindication column?

A. It ensures safety

B. It may omit updated pregnancy and drug risks

C. It eliminates patient factors

D. It overrides new evidence

5. What should determine botanical duration?

A. Defined goals, evidence and reassessment

B. Automatic lifelong continuation

C. Advertising claims

D. Bottle size alone

6. Why favour fewer ingredients when evidence permits?

A. It guarantees cure

B. It removes need for dose review

C. It eliminates allergy

D. Easier attribution of benefit, harm and interactions

7. Which variable matters when calculating a formula percentage?

A. Patient height alone

B. Retail price

C. Ingredient amount divided by total mixture

D. Colour intensity

8. What is meant by posology?

A. Plant photography

B. Study of doses and dose regimens

C. Habitat mapping

D. Trademark registration

9. Which factor is important before recommending a tincture?

A. Alcohol content and patient-specific contraindications

B. Only sweetness

C. Only cap colour

D. Only manufacturer logo

10. When should the clinician decide on follow-up?

A. Only after an emergency

B. Never

C. After years without contact

D. Before or at initiation of any monitored trial

Lesson 04 | Answers and rationales

1. A - Formulation should begin with an assessment, not a product.

2. D - Prescribing documentation must identify the actual product and regimen.

3. C - 30 divided by 60 equals one half.

4. B - Older notes must be re-screened against current knowledge.

5. A - Set start, monitoring and stop criteria.

6. D - Polyherbal complexity complicates assessment.

7. C - A percentage describes relative component quantity.

8. B - Posology concerns dosage, frequency and administration.

9. A - Ethanol exposure and formulation risk can matter.

10. D - Monitoring is part of informed prescribing.

Lesson 05 | Self-assessment (10 MCQs)

1. Which herb is identified as ashwagandha in the source notes?

A. Valeriana officinalis

B. Cynoglossum officinale

C. Digitalis purpurea

D. Withania somnifera

2. How should yin-yang rankings of adaptogens be interpreted?

A. Guaranteed head-to-head efficacy

B. Laboratory potency measurements

C. Traditional energetic teaching, not comparative trial evidence

D. Official regulatory rankings

3. What current safety concern is associated with ashwagandha?

A. Guaranteed safety in pregnancy

B. Rare liver injury and thyroid/medication interactions

C. No effects on sedation

D. No reported side effects

4. Which class best describes Valeriana in historical herbal notes?

A. Sedative or nervine

B. Cardiac glycoside antidote

C. Cyanide chelator

D. Essential vitamin

5. A patient takes a benzodiazepine and wishes to add sedating herbs. What should happen?

A. Assume enhanced safety

B. Double all doses

C. Stop prescribed medicine abruptly

D. Screen for additive sedation and impaired function

6. Which herb has important serotonergic and pharmacokinetic interaction risks?

A. Calendula officinalis topical

B. Ulmus rubra bark tea

C. Hypericum perforatum

D. Avena sativa as food

7. St. John's wort with an SSRI can cause what dangerous outcome?

A. Reliable prevention of mania

B. Serotonin toxicity

C. Guaranteed thyroid normalization

D. Complete drug detox

8. When depression includes suicidal thoughts, what is the priority?

A. Urgent mental-health safety assessment

B. Self-select a herbal blend

C. Avoid clinical review

D. Treat exclusively with tea

9. Evidence for a specific ashwagandha product for sleep is best described as what?

A. Proven for every chronic disease

B. Evidence of zero toxicity

C. Equivalent to all hypnotics

D. Limited and formulation-specific

10. A traditional “adaptogen” claim means what?

A. Guaranteed endocrine cure

B. Defined pharmaceutical receptor

C. Historical stress-response category

D. A standardized laboratory diagnosis

Lesson 05 | Answers and rationales

1. D - Withania somnifera is the botanical binomial for ashwagandha.
2. C - The source comparison itself warns the ranking is not absolute.
3. B - Modern monographs identify liver and thyroid-related concerns.
4. A - Valerian is traditionally discussed as a sedative herb.
5. D - Combined sedatives can impair alertness.
6. C - St. John's wort interacts with multiple medicines.
7. B - Serotonergic combinations may be dangerous.
8. A - Potential self-harm requires appropriate safety care.
9. D - Evidence cannot be transferred across all preparations.
10. C - The traditional category is not an established disease treatment.

Lesson 06 | Self-assessment (10 MCQs)

1. Which pair is traditionally classified as demulcents in the supplied notes?

A. Digitalis and Aconitum

B. Conium and Datura

C. Althaea officinalis and Ulmus rubra

D. Senna and cascara only

2. Peppermint oil may aggravate which symptom?

A. Acute major bleeding

B. Gastroesophageal reflux

C. Bone fracture

D. Severe hypoglycemia alone

3. Which herb presents hypertension/hypokalemia concerns?

A. Glycyrrhiza glabra

B. Matricaria recutita

C. Calendula officinalis

D. Avena sativa

4. An older note calls an herb “hepatic.” What follows?

A. Clinical efficacy established

B. No need to investigate jaundice

C. No drug interactions possible

D. Traditional category only, not a hepatitis cure

5. Which feature in chronic abdominal symptoms is a red flag?

A. Mild gas after beans

B. Occasional hunger

C. Unexplained gastrointestinal bleeding

D. Preference for tea

6. A patient with worsening dyspnea wants licorice tea only. What is safest?

A. Reassure without examination

B. Assess respiratory emergency and standard care

C. Use herbs as replacement for oxygen

D. Delay evaluation

7. Which plant is a traditional carminative?

A. Foeniculum vulgare

B. Aconitum napellus

C. Digitalis purpurea

D. Convallaria majalis

8. Which factor changes peppermint product risk?

A. Only the label font

B. Store music

C. Shipping cost

D. Route and concentrated versus food-level exposure

9. What does “cholagogue” traditionally mean?

A. Cures biliary obstruction

B. Stops all vomiting

C. Promotes bile flow/release

D. Stimulates bone formation

10. Which plan is appropriate for an adjunct GI product?

A. No evaluation and indefinite use

B. Defined indication, interaction review and follow-up

C. Ignore medications

D. Assume natural means effective

Lesson 06 | Answers and rationales

1. C - Mucilaginous herbs are typical demulcents.

2. B - Peppermint can relax the lower esophageal sphincter and worsen reflux.

3. A - Glycyrrhizin-containing licorice can alter BP and potassium.

4. D - Action labels cannot replace disease-specific evidence.

5. C - Bleeding warrants clinical assessment.

6. B - Severe breathlessness should not be managed with herbal substitution.

7. A - Fennel is a historical carminative example.

8. D - Concentrated oils and route matter.

9. C - Cholagogue is an action term, not a medical diagnosis.

10. B - A bounded monitored plan reduces harm.

Lesson 07 | Self-assessment (10 MCQs)

1. Why is Digitalis not appropriate for casual herbal self-medication?

A. It contains no active drugs

B. Cardiac glycoside toxicity

C. It is equivalent to chamomile

D. It is a culinary herb

2. Convallaria majalis is associated with which safety issue?

A. Cardiotoxic glycosides

B. No physiological activity

C. Only benign mucilage

D. Vitamin C deficiency

3. How should historical “cardiotonic” descriptions be interpreted?

A. Evidence of guaranteed reversal

B. Universal approval for arrhythmias

C. Proof of no adverse reactions

D. Traditional classification; not a substitute for heart-failure therapy

4. A patient using insulin adds a botanical marketed for glucose lowering. What should be reviewed?

A. Only bottle shape

B. Astrological sign

C. Hypoglycemia risk and glucose monitoring

D. No need for follow-up

5. Which is a traditional immune-action term in uploaded notes?

A. Antibiotic certificate

B. Immunomodulator

C. Proven vaccine replacement

D. Absolute immunity

6. Which example is listed as an immunomodulator?

A. Ganoderma lucidum

B. Conium maculatum

C. Aconitum napellus

D. Digitalis purpurea

7. What is essential when transplant recipients request immune herbs?

A. Stop immunosuppressants

B. Ignore herb identity

C. Assume zero interaction

D. Coordinate with transplant prescriber/pharmacist

8. A suspected bacterial pneumonia requires what before adjunct claims?

A. Only topical botanicals

B. No medical assessment

C. Appropriate evaluation and evidence-based treatment

D. Vitamin marketing

9. Can a hawthorn supplement be assumed safe with multiple heart medicines?

A. Yes, all herbs are inert

B. No, interactions and clinical status require review

C. Yes, because it is a fruit

D. Yes, if on sale

10. Which best evaluates an “immune booster” study?

A. Clinically meaningful outcomes in appropriately designed trials

B. Only colourful packaging

C. Number of social-media likes

D. A single test tube result as proof

Lesson 07 | Answers and rationales

1. B - Cardiac glycosides have narrow safety margins.
2. A - Lily of the valley contains cardiac glycosides.
3. D - Claims need clinical evidence and medication safety review.
4. C - Additive glucose changes can create risk.
5. B - The classification is conceptual, not proof of clinical efficacy.
6. A - Ganoderma appears in traditional immunomodulator notes.
7. D - Transplant medicine exposure and immune effects are high stakes.
8. C - Do not replace effective antimicrobial or urgent care.
9. B - Cardiac status and medications alter safety.
10. A - Claims require relevant human outcomes.

Lesson 08 | Self-assessment (10 MCQs)

1. What does “vulnerary” mean in traditional action lists?

A. Supports tissue healing in historical terminology

B. Guarantees sterile wound care

C. Cures all skin infections

D. Removes all scarring

2. Which botanical is a traditional topical vulnerary?

A. Digitalis purpurea

B. Aconitum napellus

C. Conium maculatum

D. Calendula officinalis

3. What is the principal concern with oral comfrey?

A. Vitamin C overdose

B. Absence of any chemical constituents

C. Pyrrolizidine-alkaloid hepatotoxicity

D. Guaranteed detoxification

4. An herbal cream causes increasing rash and itching. What should happen?

A. Increase frequency

B. Stop and assess possible contact allergy

C. Cover indefinitely

D. Ignore symptoms

5. Which finding requires prompt evaluation in a wound?

A. Fever and rapidly spreading redness

B. Dry intact skin

C. Minimal transient itching

D. Normal wound closure

6. A product says “natural therefore safe on infant skin.” The correct response?

A. Always true

B. Never read labels

C. Use adult-strength oils

D. Safety depends on ingredients, dose and age

7. How should an old “skin alterative” claim be presented?

A. As established treatment for psoriasis

B. As guaranteed acne cure

C. As traditional use with uncertain disease-specific benefit

D. As substitute for dermatologic referral

8. What can cause injury with concentrated topical essential oils?

A. Automatic wound sterilization

B. Irritation or sensitization

C. Guaranteed analgesia

D. Removal of infection risk

9. Which information identifies a safe topical product?

A. Ingredients, formulation, lot and intended skin use

B. Only pleasant smell

C. Only bottle size

D. Only customer ratings

10. Which action is appropriate for severe burns?

A. Home herbal compress only

B. Ignore pain

C. Avoid any medical advice

D. Urgent evaluation and standard burn management

Lesson 08 | Answers and rationales

1. A - It describes a traditional wound-healing role, not proven efficacy.
2. D - Calendula is listed as vulnerary in the source notes.
3. C - Unsaturated PA exposure can injure the liver.
4. B - Topical botanicals can cause sensitization.
5. A - Spreading infection is a red flag.
6. D - Infants may have heightened exposure and sensitivity.
7. C - Historical categories do not establish efficacy.
8. B - Essential oils can irritate and trigger allergy.
9. A - Labelled identity and quality remain essential.
10. D - Severe burns require clinical care.

Lesson 09 | Self-assessment (10 MCQs)

1. What must be considered first with amenorrhea in someone who could be pregnant?

A. Start emmenagogues

B. Use higher doses of uterine tonics

C. Ignore medication history

D. Pregnancy testing and appropriate assessment

2. Which historical category is assigned to Vitex in uploaded notes?

A. Antidote to cyanide

B. Potent antibiotic proven for sepsis

C. Endocrine or hormonal modulator

D. Cardiac glycoside

3. What is a high-risk feature in a proposed pennyroyal regimen?

A. Guaranteed pregnancy safety

B. Potential toxicity and pregnancy harm

C. No biological effects

D. It is equivalent to dietary mint

4. Which history is relevant in irregular menstruation?

A. Medications, pregnancy possibility and thyroid symptoms

B. Shoe brand

C. Hair colour only

D. Favourite tea

5. What is correct regarding infertility and botanical-only treatment?

A. All infertility responds to herbs

B. Labs are unnecessary

C. Pregnancy need not be excluded

D. Do not delay appropriate fertility evaluation

6. How should traditional “uterine tonic” language be interpreted?

A. Proof of prevention of miscarriage

B. A universal fertility cure

C. Historical category without assured clinical outcome

D. A substitute for prenatal care

7. Which patient group warrants especially cautious herbal review?

A. Only healthy adults

B. Pregnant or breastfeeding patients

C. Only people who dislike tea

D. Only people with no medicines

8. What additional information should be checked with black cohosh?

A. Product-specific evidence and liver safety concerns

B. Only bottle colour

C. A guarantee of estrogen equivalence

D. No medication list

9. Severe unilateral pelvic pain and positive pregnancy test requires what?

A. A home emmenagogue

B. Routine annual follow-up

C. Reassurance without examination

D. Urgent ectopic-pregnancy assessment

10. Which makes a botanical reproductive claim more reliable?

A. Traditional listing alone

B. Anecdotal social post

C. Good trials using the same preparation and relevant outcomes

D. A colourful chart

Lesson 09 | Answers and rationales

1. D - Pregnancy is a critical differential before herbal use.
2. C - Traditional categories should not be confused with proven indications.
3. B - Pennyroyal has well-recognized toxic potential.
4. A - Reproductive assessment needs medical context.
5. D - Medical assessment is central to infertility care.
6. C - Traditional classifications are not evidence of safety or efficacy.
7. B - Pregnancy/lactation safety evidence is often limited.
8. A - Herb effects and safety cannot be assumed across preparations.
9. D - Ectopic pregnancy can be life-threatening.
10. C - Product-specific clinical evidence matters.

Lesson 10 | Self-assessment (10 MCQs)

1. Which toxic class is associated with some comfrey preparations?

A. Vitamin B12

B. Essential fatty acids only

C. Unsaturated pyrrolizidine alkaloids

D. Soluble fibre

2. Aconitum poisoning may cause which emergency?

A. Only mild thirst

B. Malignant arrhythmia and neurological toxicity

C. Hair loss after years only

D. Transient food aversion

3. Datura stramonium contains which major toxic class?

A. Tropane alkaloids

B. Dietary fibre

C. Omega-3 lipids

D. Collagen peptides

4. Which is correct botanical identification?

A. Conium maculatum is water hemlock (Cicuta)

B. Both are harmless carrots

C. Conium is medicinal chamomile

D. Conium maculatum is poison hemlock

5. Digitalis glycosides may cause which complication?

A. Only mild rash

B. Purely benign sedation

C. Dysrhythmia

D. Complete absence of effect

6. What is incorrect in the historical note about gossypol?

A. It may be associated with cottonseed

B. It is classified as a furocoumarin

C. It has toxicological relevance

D. It is a plant-derived compound

7. Suspected ingestion of a poisonous plant calls for what?

A. Emergency or poison-centre consultation

B. Inducing vomiting at home

C. Waiting for a rash

D. Giving random antidote herbs

8. Which constituent group can release cyanide from some seeds?

A. Tannins exclusively

B. Mineral salts

C. Mucilage alone

D. Cyanogenic glycosides

9. Severe anticholinergic poisoning might cause what?

A. Low core temperature always

B. Guaranteed bradycardia

C. Delirium, mydriasis and tachycardia

D. Normal mental status by definition

10. Which source statement requires a modern correction?

A. Comfrey PA concerns

B. “Water hemlock” as the common name for Conium

C. Aconitum toxic potential

D. Digitalis glycosides

Lesson 10 | Answers and rationales

1. C - Some pyrrolizidine alkaloids can damage hepatic sinusoids.

2. B - Aconitine is highly toxic to cardiac and neural tissues.

3. A - Tropane alkaloids can produce anticholinergic poisoning.

4. D - Poison hemlock and water hemlock are distinct plants.

5. C - Cardiac glycosides can cause life-threatening rhythm disturbances.

6. B - Gossypol is a polyphenolic compound, not a furocoumarin.

7. A - Poisoning management requires expert urgent care.

8. D - Certain cyanogenic glycosides can generate cyanide.

9. C - Tropane alkaloid intoxication can produce anticholinergic toxidrome.

10. B - Cicuta species are water hemlock; Conium is poison hemlock.

Lesson 11 | Self-assessment (10 MCQs)

1. St. John's wort can lower some drug exposures mainly through what?

A. Antacid buffering only

B. Metabolic/transporter induction

C. Destruction of all drugs in the stomach

D. No pharmacologic mechanism

2. Which interaction may compromise contraceptive effectiveness?

A. St. John's wort with hormonal contraception

B. Food-level chamomile with water

C. Topical calendula with soap

D. Ordinary apple consumption

3. What can occur when sertraline is combined with St. John's wort?

A. Guaranteed improved safety

B. No change in adverse effects

C. Absolute protection against depression

D. Serotonergic toxicity

4. NCCIH reports that goldenseal can reduce exposure to which drug in a study?

A. Vitamin C

B. Saline

C. Metformin

D. Calcium carbonate alone

5. What is a potential danger of glycyrrhizin-rich licorice?

A. Hypercalcemia always

B. Hypokalemia and hypertension

C. Permanent immunity

D. Guaranteed glucose normalization

6. Which product has been linked with rare severe liver injury?

A. Kava

B. Purified water

C. Food-grade salt

D. Air-dried oats

7. Which factors should be checked before adding an herb to anticoagulant therapy?

A. Only product taste

B. Colour preferences

C. Outdoor temperature

D. Bleeding risk and medication interactions

8. How should suspected interaction be managed?

A. Keep adding products

B. Ignore new symptoms

C. Review all products and consult prescriber/pharmacist

D. Stop critical drugs without consultation

9. Which patient requires extra careful herbal review?

A. Healthy person with no exposures only

B. Person with liver disease taking multiple prescriptions

C. Everyone has identical risk

D. Person choosing herb by logo

10. What is essential on an interaction checklist?

A. Drug, botanical species, dose and start/stop dates

B. Only product price

C. Only favourite herb

D. Only delivery address

Lesson 11 | Answers and rationales

1. B - St. John's wort induces CYP/P-gp pathways.
2. A - Enzyme induction can reduce hormonal contraceptive exposure.
3. D - Overlapping serotonergic effects may be dangerous.
4. C - A study reported a reduction in metformin exposure with goldenseal.
5. B - Licorice can affect potassium and blood pressure.
6. A - Kava products have been linked with serious liver adverse events.
7. D - Bleeding consequences and metabolism changes matter.
8. C - Document and coordinate safe medication changes.
9. B - Comorbidities and polypharmacy increase potential risk.
10. A - Precise exposures help identify interactions.

Lesson 12 | Self-assessment (10 MCQs)

1. What does a Canadian NPN identify?

A. A licensed natural health product for labelled conditions of use

B. A cure for all diseases

C. Approval of every online claim

D. Guaranteed absence of side effects

2. What evidence best establishes human efficacy?

A. Only in-vitro data

B. Only historical praise

C. Only sales volume

D. Appropriate controlled clinical studies with relevant outcomes

3. Why might evidence on one standardized extract not apply to a generic tea?

A. They are always identical

B. Teas never contain compounds

C. Constituents, dose and exposure may differ

D. All brands have same formulation

4. Which is part of informed consent for an herbal adjunct?

A. Only product advertising

B. Benefits, uncertainty, alternatives, risks and monitoring

C. No discussion of medication risks

D. Guarantee of cure

5. What follows a serious suspected botanical adverse event?

A. Clinical assessment, documentation and reporting as applicable

B. Destroy the batch number

C. Ignore it if labelled natural

D. Automatically double the dose

6. A patient with cancer is offered an herb labelled “NPN.” What should be clarified?

A. All cancers are cured by NPN products

B. Oncology therapy should be stopped

C. No need to inspect authorized claims

D. NPN does not prove the advertised cancer cure

7. What is a clinically meaningful outcome in a symptom trial?

A. Bottle design

B. Page view count

C. A prespecified patient-relevant function or symptom score

D. Manufacturer popularity

8. Which difference separates traditional use from clinical proof?

A. A traditional label proves a cure

B. Controlled evidence of benefit and harm is required for efficacy claims

C. All old claims are equally supported

D. Historical use eliminates risk

9. Why review an herb's full current product label?

A. It states licensed use, ingredients, dose and cautions

B. It is always a substitute for history

C. It proves no interactions

D. It guarantees efficacy for any condition

10. Which is the best final step in an adjunct treatment plan?

A. Allow indefinite unsupervised use

B. Ignore treatment goals

C. Assume no harm

D. Set follow-up, stopping rules and safety reporting plan

Lesson 12 | Answers and rationales

1. A - Health Canada authorization applies to the reviewed product and label.

2. D - Trial design and clinically meaningful outcomes matter.

3. C - Preparation-specific evidence cannot be freely generalized.

4. B - Patients need balanced options and safeguards.

5. A - Adverse-event documentation supports pharmacovigilance.

6. D - An NPN is not a blanket endorsement of unrelated claims.

7. C - Measure results that matter to patients.

8. B - Traditional history is distinct from efficacy research.

9. A - Product-specific conditions of use matter.

10. D - Ongoing review supports effectiveness and safety.

Source notes and current external resources

Primary uploaded source materials (teaching context)

- Action definitions and examples 2018.xlsx
- Adaptogen differentiation 2016.doc
- BOT 101i 2018 Midterm Review 4.ppt
- Botanical Preparations 2017.docx
- herb lec 1.docx
- herbs names and indication.docx
- lecture 1.pdf
- lecture 2.pdf
- lecture 3.pdf
- question of botanic medicine.docx
- Quick Guide to Botanical Formulating.docx
- Toxicity and Contraindications Lecture.docx
- BOT MED final notes .docx

Evidence and safety (current web references)

Health Canada: Natural Health Products (licensing, NPN, risk) | https://www.canada.ca/en/health-canada/services/drugs-health-products/natural-health-products-canada.html

NCCIH: Herbs at a Glance (evidence and safety monographs) | https://www.nccih.nih.gov/health/herbsataglance

NCCIH: Herb-Drug Interaction Evidence Digest | https://www.nccih.nih.gov/health/providers/digest/herb-drug-interactions-science

NCCIH: St. John's Wort | https://www.nccih.nih.gov/health/st-johns-wort

NCCIH: Ashwagandha | https://www.nccih.nih.gov/health/ashwagandha

NCCIH: Licorice | https://www.nccih.nih.gov/health/licorice-root

NCCIH: Kava | https://www.nccih.nih.gov/health/kava

Historical-source cautions: Conium maculatum is poison hemlock, not Cicuta water hemlock; gossypol is not a furocoumarin; stimulant botanicals are not substitutions for emergency asthma care; botanicals are not cures for cancer, sepsis, infertility, etc. Verify old dosing and diagnostic content before use.