

Herbal Infusions & Teas

A close-up photograph of a plant stem with several green, elongated, ribbed grains. The grains are arranged in a cluster and have a slightly curved shape. The background is a soft, out-of-focus green, suggesting a natural outdoor setting.

by Sharlene Peterson for Genesis School of Natural Health ©2022

Purpose: Infusions & Teas



- Add flavor and variety to your fluids
- Provide additional nutrients or herbal actions as needed
- Provide an alternative to adding more pills and tinctures
- Unable to swallow pills
- Need a non-alcoholic herbal solution
- Satisfaction of providing self-care
- Ease and speed of creating several unique formulas
- Save money (can even use a mason jar instead of a fancy tea press or tea pot)

Advantages of Infusions & Teas



Herbal teas and infusions are simple, inexpensive, and an empowering component to holistic healing. The mere action of preparing the water, choosing your herbs, and then sitting down to sip and enjoy your cup of tea is often a calming act of self-care.

With hundreds of herbs, flowers, and fruits to choose from, the combination possibilities seem endless. Teas and infusions can provide a calming or energizing effect, an enjoyable flavor, be used to disperse a fever, calm indigestion, heal the intestines, strengthen the immune system, or provide an abundance of nutrients and phytochemicals for every cell in the body.

Teas and infusions are convenient. Whether traveling or going to the office, a person may take a travel mug with the built in strainer and their favorite herbal blend(s). Just add boiling water to have a delicious, hydrating, and beneficial beverage. Also, many blends taste great if you want to add ice for ice tea.

Tea, Infusion, or Decoction

A simple tea process yields less medicinal power than an infusion. Teas are often a quick process (2-3 minutes) in a cup with no lid. However, a tea can be improved by powdering your herbs and covering the cup until you are ready for a sip. Crush or powder herbs in small batches to keep them as fresh as possible.

Infusions are one of the easiest methods for preparing effective herbal remedies. While some herbal constituents like mucilages are best extracted using a cold water infusion (marshmallow root, burdock root, flaxseed, etc.), most herbs require heat to break down the cell walls and to dissolve the constituents into the water (menstruum/solvent).

Not all phytochemicals are water soluble but, not all are soluble in oil or alcohol either! A hot infusion provides the time and heat necessary to break the plant cell walls and yield sufficient amounts of the phytochemicals and nutrients into the water. Releasing the constituents is generally easier with dried herbs as the plant parts swell quickly in the hot water and burst.

Tea, Infusion, or Decoction (continued)



A decoction is not a hot water infusion. A decoction involves simmering the herbs over heat (stovetop) for 15-20 minutes whereas a hot infusion is adding boiling water to the herbs and letting the herbs steep in a covered container for 20-30 minutes with no additional heat.



A decoction will also “boil off” volatile oils (essential oils). An uncovered hot infusion will also allow volatile oils to escape with the steam.



In general we decoct roots, seeds, barks and mushrooms and infuse leaves, soft stems, flowers, and fruits. In general because there are always exceptions! While not all herbal constituents are released into the water when making a tea or infusion (some need alcohol, oil, etc.) the variety of constituents dissolved into water is truly inspiring.

Directions for Infusions

When using fresh herbs you will need to double the amount - fresh plants contain a lot of water!

**I would suggest the following dosage:
1 teaspoon of dried herb per cup of water
4 to 6 teaspoons of dried herb per quart**

Use your intuition and senses when determining how much to use. How strong do you want the tea? How potent are the herbs you choose (both taste and medicinally)?

Once you've measured your tea, pour boiling water over it, cover the container, and allow it steep/infuse for at least 15-30 minutes. Make sure you press or squeeze the herbs to get as many of the constituents out as possible! If it is too strong or not hot enough just add some boiling water.

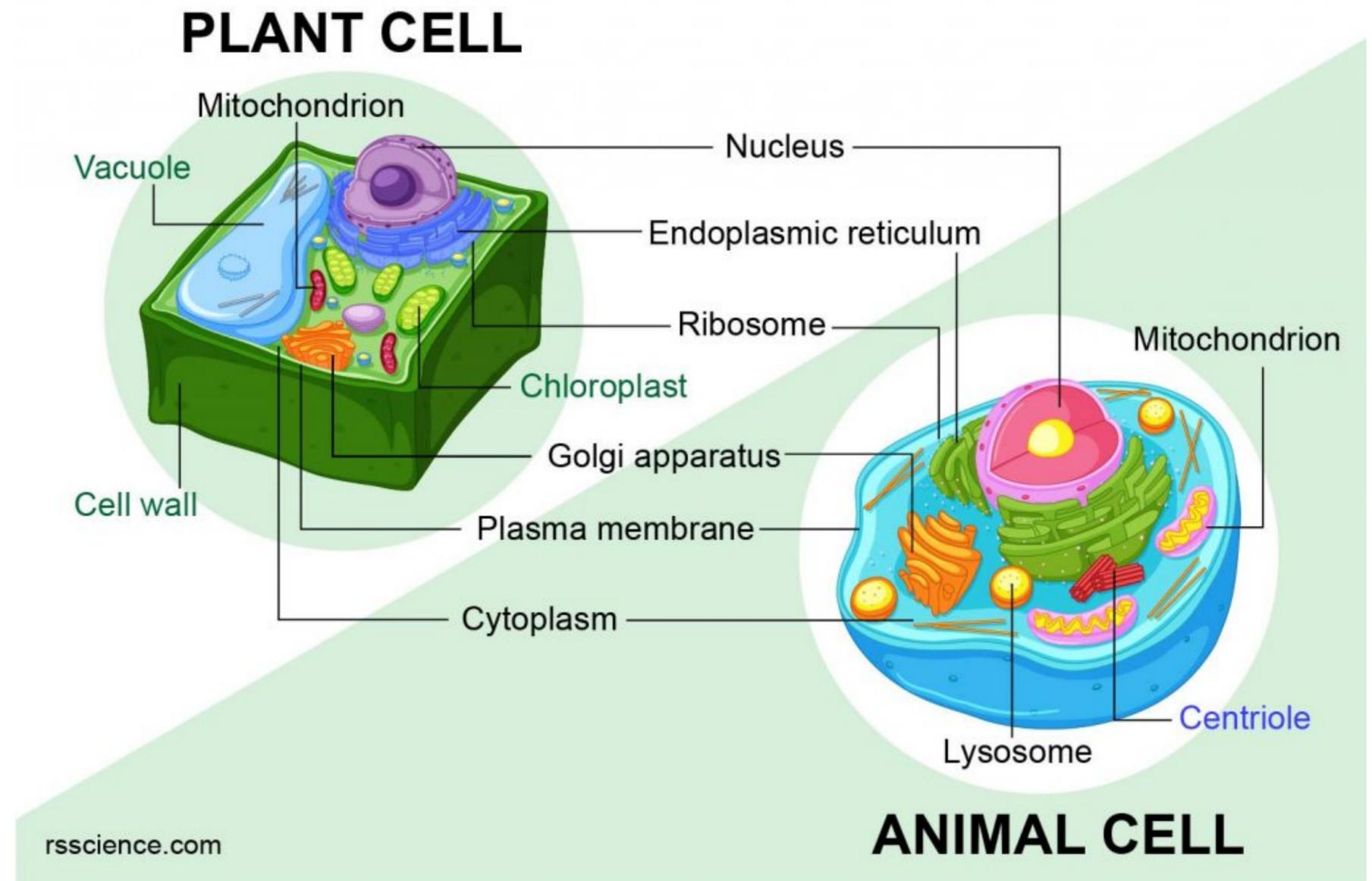
There are several herbalists that recommend 15-30 minutes for an infusion and others say 4-24 hours. The differences are likely due to what they trying to accomplish (concentration) and which herbs have been chosen.

To treat a chronic or acute health condition several cups of tea may be used per day. Again, which herbs are you using? 6 cups of a nutritive tea is great while 6 strong cups of comfrey tea is not OK!

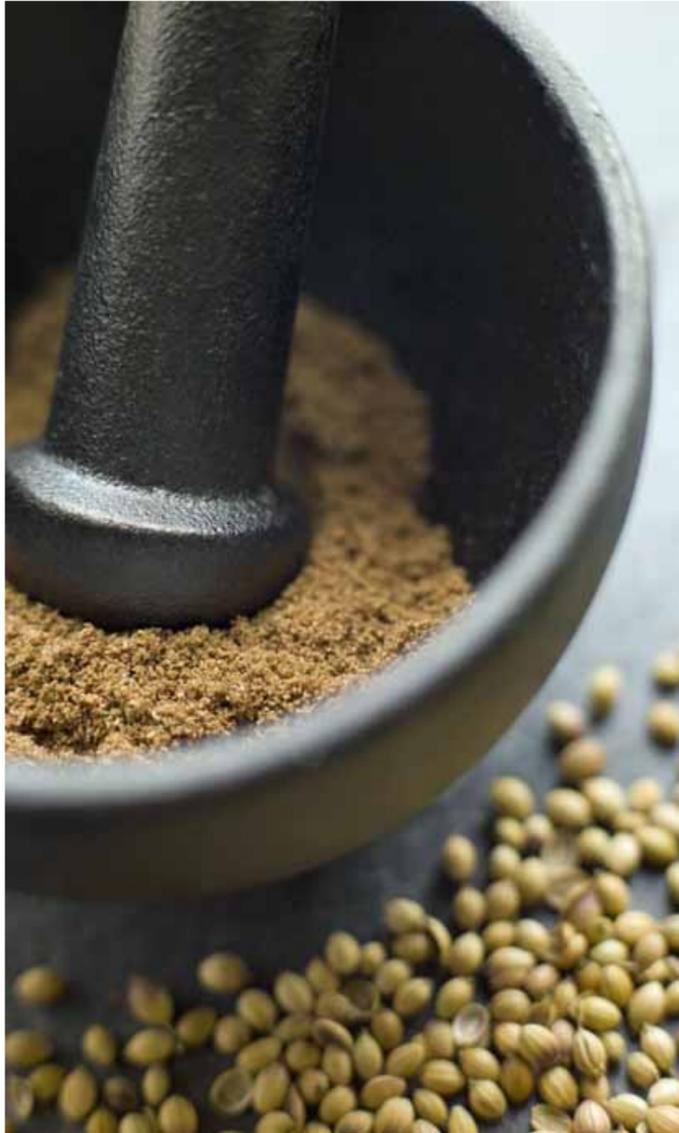
Plant Cell Walls

Plant cell walls are a rigid and protective. It is a thick matrix that surrounds the inner contents of the cell.

Nutrients and other phytochemicals are stored within the plant cell so it is necessary to break the cell wall to extract the constituents.



Preparing Plant Material



Before adding plant parts for an infusion or tea you will need to finely slice, chop, or crush the plant parts to expose more surface area (cell walls) to the water (solvent/menstruum).

Supplies are simple. You will need a chopping board, a knife, and a mortar and pestle. I don't recommend a wood mortar and pestle as they are hard to thoroughly clean without damage over time.

Crush the plant parts coarsely if you want a clear liquid and very fine if you prefer to have additional plant material in your tea after straining. Plant material provides additional nutrients, fiber, and other beneficial constituents.

Water as a Solvent



A menstruum, by definition, is a solvent that extracts and preserves plant constituents. Water is a solvent however, it does not preserve for more than a few days. Water is called the universal solvent because it has the ability to dissolve more substances than any other liquid. Almost all living things on earth depend on water's ability to "take along" crucial chemicals, minerals, and nutrients through the air, the ground, plants parts, and through our bodies.

Water dissolves many substances primarily because it contains extremely polar hydrogen bonds. The polarity of the bonds between the two hydrogen atoms and the oxygen atom (H_2O) means that two sides of the molecule gain different charges - one slightly positive and one slightly negative. These charged sides of the water molecule mean that the water is strongly attracted to the charged ends of other compounds, such as salt. This attraction then disrupts the attractive forces holding the other compound together thus dissolving it.

Water as a Solvent (continued)

All matter is made up of atoms and molecules that are constantly moving. When heat is added to a substance, the molecules and atoms vibrate faster. As atoms vibrate faster, the space between atoms increases. This means that boiling water has the ability to vibrate rapidly which optimizes its power to break cells walls to release the phytochemicals into the water. Make sure the water is boiling and that the container is not cold (can run hot water into the container to warm it up) when you pour the water into your infusion container or tea cup.



The best water for preparing teas, infusions, and decoctions is clean (no tap water chemicals) and contains very few minerals (no competition with constituents need for the action of water molecules). Reverse osmosis or distilled water is ideal but, if not available use what you have on hand.

Choosing Your Herbs



Basic Guideline:

- **Core** (the main herb/action)
- **Compliment** (the supporting herb/action)
- **Adjustment** (flavor, synergistic herb for core or compliment, specific nutrients...)

Keep it simple! The more herbs you add to the formula the less concentration per herb in the final product.

I will not follow this guideline in the next slide!

Core Nutritive Blend

The Core Nutritive Blend is a valuable vitamin and mineral synergistic blend however, it tastes like grass! Add a generous amount of flavorful herbs/berries/flowers/fruits/spices (they have many excellent nutrients also) for an enjoyable cup of tea. While not all herbal constituents are released into the water when making a tea or infusion the variety of constituents dissolved into water is truly inspiring.

Equal amounts of:

Alfalfa

Nettle Leaf

Oat Straw

Dandelion Leaf

Quality: The alfalfa, nettles, and dandelion leaf should be green/greenish and not brownish! Over-dried and old herbs are not useful. There are some great companies that provide 8 - 16 ounce bulk bags of fresh and well cared for herbs.

Alfalfa (*Medicago sativa*)



Alfalfa has one of the highest mineral profiles of any land plant! It contains many essential nutrients including protein, calcium, iron, copper, zinc, magnesium, potassium, vitamins A, C, E, K, and the full family of B vitamins. Alfalfa's flavones include tricetin and apigenin glycosides which have very high antioxidant activity. Apigenin is also anti-inflammatory.

Alfalfa also contains isoflavones which are classified as phytoestrogens because they are plant-derived and have weak estrogenic activity. Phytoestrogens compete for receptor sites which makes them useful in either hypo or hyper-estrogenic states.

“Alfalfa **sprouts** contain an amino acid called L-canavanine that can increase inflammation in people with lupus by stimulating the immune system. As a result, people with lupus and similar autoimmune conditions should avoid alfalfa **sprouts** completely”. - hopkinslupus.org

Nettle Leaf (*Urtica dioica*)



Like alfalfa, nettle has a very high mineral profile. Nettle is highest in vitamin A but it also contains the vitamins B, C, and K, protein, lutein, calcium, iron, magnesium, silicon, potassium, manganese, zinc, and chromium. Nettles contain the antioxidant and anti-inflammatory flavonoids kaempferol and quercetin. All plants have a variety of phytochemicals that work synergistically!

“Significantly, kaempferol inhibits cancer cell growth and angiogenesis and induces cancer cell apoptosis, but on the other hand, kaempferol appears to preserve normal cell viability, in some cases exerting a protective effect”. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3601579>

Quercetin is a deep yellow-colored flavonoid found in many plants such citrus fruits, parsley, kale, broccoli, onions, sage, green tea, apples, berries, grapes, and buckwheat. Quercetin has antioxidant and anti-inflammatory effects and research suggests that quercetin might be an effective antihistamine which is useful for allergy symptoms.

Oat Straw (*Avena sativa*)



What is oat straw?

Oat straw comes from the same plant as the oats you would use to make oatmeal. When harvesting for cooking the oat grains need to be completely ripe and golden. When harvesting the grain (heads) for herbal remedies, the grains should be fully mature but still green. You can tell they are ready if the grains release a small amount of “milk” when pressed - **milky oats**.

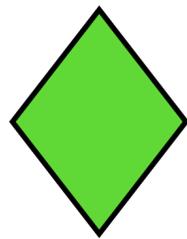


Oat straw is the **stalk of the plant** that is harvested at the same time as the milky green tops and it has an abundance of nutrients just like the rest of the plant. Oat straw is especially high in silicon, and is also a good source of magnesium, calcium, zinc, iron, B vitamins, vitamin A, protein, avenanthramides, and more. Avenanthramides are antioxidant and have been found to reduce inflammation that contributes to heart disease and type 2 diabetes.

Oat Straw (*Avena sativa*)

An infusion of oat straw taken everyday for several weeks is restorative and offers rejuvenation after prolonged stress, exhaustion, or illness. For acute situations of stress or exhaustion a tincture of milky oat tops will act more quickly. For severe chronic situations, a tincture of milky oats for 30 days followed by oat straw infusions for 3-6 months may be indicated.

Oat straw is a tonic, nutritive, and a gentle soothing nervine. Oat straw infusions taken over several weeks can gradually help reduce symptoms of depression and anxiety. It can also be used during pregnancy.



Infusion Blend For Disrupted Sleep

(wake up often/hard time falling asleep):

Oat straw (2 parts), chamomile (1 part), and passion flower (1 part)

Dandelion Leaf (*Taraxacum officinale*)

Dandelion leaf is very high in vitamin K, vitamin A, potassium, and iron. It also contains vitamins B, C, and E, manganese, calcium, magnesium, zinc, and protein. Antioxidant and anti-inflammatory phytochemicals include luteolin, mannitol, isoquercitrin, chlorogenic acid, and caffeic acid. Every part of the dandelion is edible – leaves, roots, stems, and flowers.

Dandelion root and leaves have a gentle cleansing effect on all major body systems. The root contains a higher amount of the constituents known to support the liver and gallbladder while the leaf serves as a nutritive and supportive tonic. Both the leaf and root are diuretic but they do not cause a loss of potassium - the leaves provide more potassium than is lost. The average potassium level is 43mg/g of dried leaf which is three times the amount of potassium in other botanical diuretics. “Considering the requirement for potassium supplementation that typically accompanies the use of a pharmaceutical diuretic, dandelion could offer a therapeutically significant potassium contribution by replacing the potassium loss induced by most diuretics”. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3155102/>

Adding a Compliment

Compliment herbs are endless! As you are reading through the many herbalism books take note of when they list “Infusion” as a suitable method of preparation. Unless stated infusions are hot, not cold.

Holy Basil (Tulsi Tea): an excellent adaptogenic herb with a delicious flavor and scent

Chamomile: supports digestive health and restful sleep while reducing feelings of anxiety and it has a pleasant taste that even most children enjoy (with honey!).

Linden (*Tilia sp.*): leaf and linden flower blended together is both gentle and effective for feelings of anxiety. Suitable for children and the elderly.

Chickweed (*Stellaria media*): is high in antioxidants, vitamins C and anti-inflammatory phytochemicals. It helps clear congestion in the lymphatic system and is useful for benign fatty tumors (lipomas). Take one teaspoon of the tincture, three times daily or steep 2 teaspoons of the dried herb in a covered cup of boiling water for 15 minutes to make a tea, three times daily.

Adding a Compliment (continued)

Hawthorn Leaf and Flower can be used in much the same way as the berries and they have many similar beneficial properties. Hawthorn leaf, flower, and berry are well known for their cardiovascular strengthening properties.

Red Raspberry Leaf: The leaves contain up to 10% iron and is one of the highest known plant sources of manganese. In addition to B vitamins, magnesium, calcium, and potassium, they contain anthocyanidins, ellagitannins, flavonols such as quercetin and kaempferol, catechins. The leaves have gentle astringent properties which soothe and tone the intestines and it is well known for toning and supporting reproductive organs. It has been used for centuries as an herbal remedy to increase fertility.

Echinacea: All plant tissues, irrespective of the species, contain acetaldehyde, dimethyl sulfide, camphene, hexanal, beta-pinene, and limonene. Using the roots, leaves, flowers, and stems (the whole plant) will yield the optimum amount of beneficial constituents. Some constituents are best in alcohol and some in water - use both methods for an optimal spectrum.

Adjustments to the Nutritive Blend

Hibiscus: a tart flavor similar to that of cranberries, beautiful red color

Rose hips: a tart flavor similar to that of green apple

Schisandra berries: a five-flavor-fruit (salty, sweet, sour, pungent, and bitter).

Prickly Pear: soft flavor (almost like a kiwi), combines well with hibiscus and rosehips

Lemongrass: a tart citrus-like flavor (enhances citrus peels)

Lemon peel (dried or fresh)

Orange peel (dried or fresh)

Peppermint (dried or fresh)

Honey

Stevia - very very sweet! Add a pinch instead of mixing directly into the blend. “The active compounds are steviol glycosides, which have 30 to 150 times the sweetness of sugar, are heat-stable, pH-stable, and not fermentable”. wikipedia



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