

# Native Infusion: *Rethink Your Drink* A Guide to Ancestral Beverages



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# Forward

by Valerie Segrest

For generations, our ancestors have put forth tremendous effort to feed our hunger and quench our thirst. They perfected and passed down techniques for hunting, fishing, harvesting, processing, preparing and storing foods and medicines so that we may eat and drink in a way that upholds our vitality. Over centuries, and with intentional commitment, our bodies have been built from ingredients from the land, and **clean spring water - oftentimes infused with plants**. It isn't pretentious or romantic; it is an inheritance from those who came before us and from the plants that are all around us, always ready and willing.



Every single day we are inundated with advertisements that urge us to consume sodas, juices and energy drinks. In 2013, Coca-Cola and Pepsi reportedly spent over \$3.3 billion dollars on advertising and marketing activities. Overwhelming research shows that elevated consumption of these sugary beverages is directly connected with nutrition-related health conditions that plague tribal communities today including obesity, diabetes and tooth decay. According to research done by the American Diabetes Association, the economic burden to society of diagnosed diabetes instances reached \$245 billion in 2012. It is clear that the sugary beverage industry and big pharmaceutical companies have made incredible profits off of our sickness. It is time that we make our sickness our business as well.

*Native Infusion: Rethink Your Drink* aims to support our communities' collective health efforts by building a strong agenda with a simple message: drink more ancestral beverages. The educational resources in this toolkit remind us that genuine nourishment comes from receiving the gifts of the land – fully taking it all in, embracing what is useful and letting go of what isn't.

*Empower your body with the precious gift of water – the same substance that flows through the veins of the earth and splashes around beautiful mountain rocks, bearing the reflection of trees and the sky above. The effect is cleansing, invigorating and activates our ancestral memory – helping us to come to our senses.*

# How to use this toolkit

*Native Infusion* is a teaching toolkit aimed to support you and your community in making healthy choices about beverages. The toolkit integrates Native American cultural teachings and traditional health and nutrition concepts from the Coast Salish region. Specifically, the toolkit includes:

1. A curriculum: Lesson plans and activities that include using the beverage posters, the benefits of drinking water and instructions on how to make flavored waters, herbal teas, smoothies and bone broth. The curriculum also includes a blueprint on how to set up a beverage station, herbal tea recipes, tea plant handouts, information on navigating the beverage isle and additional resources. Sections of the curriculum can be printed and used as handouts.
2. Teaching posters: Visually engaging educational posters, including a large poster called “Feeding 7 Generations” with native food principles, and six small posters on traditional beverages with key teaching points. These posters serve as gentle “nudges” and conversation pieces.
3. A Feeding 7 Generations recipe book: This recipe book includes native food and beverage recipes.

The posters and the recipe book can be utilized in a variety of settings, including schools, community classes and homes.

## **Learning Objectives:**

Participants will learn about how ancestral beverages contribute to physical, spiritual and planetary health.

Participants will learn methods for preparing healthy beverages from traditional plants and foods, including flavored waters, teas, smoothies and broths.

Participants will learn how to identify, harvest, process and prepare multiple native plants for tea.

Participants will learn about the health impacts of sugary drinks.

## Native Infusion Posters

The following posters feature water and plants used in making traditional beverages, including huckleberry, stinging nettle, evergreen tree tips, wild strawberry and wild rose. Messages include health benefits and cultural teachings. The artwork is by Squaxin Island tribal member Joe Seymour and Lower Elwha tribal member Roger Fernandes. The following page highlights teaching points for educators. They can be printed double-sided, laminated and used as an educational tool at beverage stations, health fairs, or in classroom settings.

# WATER IS LIFE



**Water** is our most important drink. Our bodies are made of 65-85% water. Water offers us protection, delivers nutrients, regulates temperature and removes waste. When we are fully hydrated, we feel less pain and have more energy.

# Water is Life

Water is the most important thing we can drink.

Our bodies are made of 60-85% water.

Water plays many essential roles in our body, including:

- Carrying nutrients
- Removing waste
- Cooling us when we are overheated
- Digesting food
- Cushioning our organs and joints



When we are fully hydrated we feel more energized and experience less pain and hunger.

Even mild dehydration can diminish physical performance and brain function.

Cultures around the world equate water with healing and energy. People travel great distances to drink or bathe in water from mountains, wells and springs that are imbued with special energy. Many people believe that water has the ability to absorb prayers, cleanse unwanted energy and bestow good medicine.

# FOOD IS OUR MEDICINE



**Huckleberry** helps us to live a long and vibrant life. The deep blue, purple or red berries are medicine for our hearts and are said to contain the blood of the earth. Dried huckleberry leaf tea balances blood sugar and protects us from chronic diseases.



## Food is Medicine – Huckleberry

There are 14 varieties of huckleberry in our region. They grow from lowland forests to high mountains. Berries may be pink, red, purple or blue. All are edible and delicious.

Huckleberries are not only one of the most important cultural foods to Salish People, they are also one of the healthiest.

Huckleberry is excellent for strengthening our heart and blood vessels.

Huckleberries are an important food for pre-diabetics and diabetics. Eating the berries does not raise blood sugar like other fruits. Both the berries and dried leaves are high in antioxidants, which help protect our body from the effects of high blood sugar, including diabetic retinopathies, kidney damage and poor tissue healing.

Harvest huckleberry leaves in spring through summer when they are fully developed and still a vibrant green color. Prune a few branches off each bush, and then hang them in a warm, dry place out of the sunlight. When the leaves are fully dry, strip them from the branches into a basket then store them in paper bags or glass jars. Use 1 tablespoon per cup boiled water and steep 10-15 minutes. Drink 2-3 cups a day. The leaves will last about a year.



# BUILD STRENGTH



**Nettles** are nature's springtime super food. They purify and nourish our body so we can feel clear, strong and energized. The tender shoots are cooked in a variety of ways and dried leaves make a tasty tea or seasoning. The sting of nettle reminds us to be fully aware and protected.

## Build Strength - Nettles

You can find nettles in fields, streambeds and disturbed areas with rich, wet soil from the coast into the mountains. They grow 3-9 feet tall and have opposite deep green leaves with serrated edges, tiny greenish flowers and square stems. The stalk and underside of leaves are covered with stinging hairs that rise from a gland containing formic acid. Gloves and scissors are usually used to harvest nettles.



Nettles are our first edible greens to emerge in spring. They are often called a “superfood” and are one of the highest plant sources of nutrients. Eating nettles a few times a week or drinking nettle tea on a regular basis can add a significant amount of nutrients to your diet that will help to give you energy and strength.

Nettles are rich in minerals, which build strong connective tissue, including bones, hair and nails. 1 cup of nettle tea contains about 300 mg of calcium, roughly the equivalent of taking a calcium supplement. Nettles are about 29 times higher in calcium and 8 times higher in magnesium than spinach! Calcium is needed for muscle contraction, heartbeat regulation and blood clotting. Low calcium levels can lead to muscle spasms, leg cramps, high blood pressure and osteoporosis.

As a medicine, nettles can help bring the body back to a state of balance. They assist the kidneys in eliminating excess fluid, balance blood pH, and filter waste from the body. They also support liver function, which includes breaking down waste products, digesting fats, storing minerals and building healthy blood. Drinking nettles on a regular basis may also help to alleviate seasonal allergies.



# BE RESILIENT

**Evergreen tree tips** from Douglas fir, hemlock, spruce and true fir trees are the original thirst quenchers. In springtime limey green new growth emerges at the end of branches. Snack on them fresh or make them into tea to recharge and be your best.

## Be Resilient - Evergreen tree tips

Young tips of Douglas fir, true fir, hemlock and spruce trees are harvested in spring when they are limey green and tender.

Salish elders teach that edible spring tree tips can be eaten as food or made into tea to ward off hunger and thirst. They contain vitamin C and electrolytes and are sometimes called “Nature’s Gatorade” or “the original thirst quencher.”



To harvest the tips, pinch off the new growth– making sure to not to gather too much in one place. Remember that you are pruning the new growth of the tree.

Tips can be used to make sun tea or hot tea. Sun tea brings out the aromatic flavor and vitamin C without extracting more bitter tannins. Add two handfuls of tips to a quart jar and cover with room temperature water. Place in a warm spot and let sit 3-8 hours. Strain and drink straight, or mix with lemon or lime juice and sweetener. To prepare a hot tea, add a handful of spring tips to a teapot or pot with a lid and add 3-4 cups of boiled water. Cover with a lid and let steep about 10-15 minutes.

Tips will last for several days in the refrigerator. They can also be frozen or dried for later use.



# TASTE THE SEASON



**Wild Strawberries** remind us to embrace and savor the moment. These berries might be small but their burst of flavor brings joy to all who taste them. Pick them in fields and forests during the height of summer. Try making flavored water by adding strawberries, citrus fruits and aromatic herbs to your water bottle!

## Taste the Season - Wild Strawberries

Wild strawberries are creeping perennials that grow in mats in woodlands, open fields and on grassy beaches. Flowers are white and look like tiny wild roses. The fruit is orange to red colored and about ½ inch across.

Wild strawberries may be only the size of the tip of your pinky finger, but they pack more flavor than the giant strawberries we can get in stores.



The whole strawberry leaf is healing. The leaf contains vitamin C, which helps to heal and strengthen tissue, Methyl salicylate, which feels cooling and acts as an anti-inflammatory, and quercetin, which stabilizes inflammation.

Strawberry leaves can be dried in baskets or paper bags and then made into a mineral-rich tea. The tea has a pleasant mild flavor and acts as an astringent to gently tighten inflamed tissue including swollen gums, sore throats, upset stomach, sore eyes, burns and diarrhea. Strawberry leaf is beneficial for women's reproductive health.

To make strawberry tea, use 1 tablespoon of leaf per cup of hot water and steep about 15 minutes. Drink 1-3 cups a day. Strawberry combines well with other berry leaves.

# PROTECT WHAT YOU LOVE



**Wild Rose** helps us remember what is precious and to keep it safe from harm. The sweet smelling flowers sooth irritation, heal wounds and add delicious flavor to food and drinks. In fall, flowers become rose hips, which strengthen our heart and contain Vitamin C that shields us from illness.



## Protect What You Love - Wild Rose

Wild roses have beautiful pink, five-petaled flowers that develop into red or orange round fruits called rosehips. They grow in variety of habitats including wooded, open, dry and moist locations from low to middle elevations.



The whole rose plant, including leaves, petals, hips and stems, is astringent, meaning it tightens inflamed tissue. Rose is used for healing wounds and supporting skin health.

Rose petals have a delicious taste and can be added to drinks, syrups and desserts. The buds and flowers are often dried and added to teas. They can also be infused in oil, honey, vinegar and alcohol.

Rosehips are so loaded with nutrients that they can be considered a super food. They contain the Vitamins A, B complex, C, E, K and minerals including calcium, silica, iron and phosphorous.

Rosehips are particularly high in flavonoid rich antioxidants, including rutin, that help strengthen our heart and blood vessels. They contain carotenes, including lycopene that have been linked to cancer prevention.

The most common use of rosehips throughout history has been for prevention and treatment of colds and flu. Wild varieties have the highest concentration of Vitamin C, with some estimates reporting 30-50 times the Vitamin C of oranges.

To make rosehip tea, use 1 heaping teaspoon of deseeded rosehips or 1 tablespoon of whole dried rosehips per cup of boiled water and steep in hot water for 20 minutes.



# Water

*Water is one of our most important spiritual medicines. The morning dew from the sword fern, the rain, and even the water we drink every day can purify and cleanse us. Water is precious and you have to ask for its healing.*

*-Kimberly Miller, Skokomish Tribe*

*Drink just one more glass of water a day, and you can make a real difference for your health, your energy and the way you feel.*

*-Michelle Obama*



We live on the blue planet. Billions of years ago, life first stirred from our watery oceans, and every plant and animal still depends on water for survival. Water is the most important thing we can drink. It makes up 60-85% of our body weight. The benefits of consuming enough water to be hydrated include:

- Assists in digestion and absorption of nutrients
- Carries nutrients and removes wastes
- Reverses cellular damage and supports tissue structure
- Lubricates joints and digestive pathways
- Boosts brain function
- Assists in body temperature regulation

We constantly lose water through sweat, breathing and eliminative functions. The best way to know how much water we need is to drink when we are thirsty. Our body has intricate ways to detect when we need more water and stimulate our thirst instinct. This has worked for our ancestors for countless generations. Other beverages, including tea and juice, as well as foods containing water, contribute to water intake and fluid balance. There are certain circumstances when you may need to drink more water, even if you are not thirsty. These include when sweating during hot weather or intense exercise, and when breastfeeding. As a guideline for how much water you should drink, health authorities often recommend 8 cups of water a day. That is 64 ounces, 2 liters or half a gallon. Another method is to drink about half your body weight in liquid ounces. For example, if you weigh 150 pounds, you should drink about 75 ounces of water per day.

Be suspicious of marketing from sports drink companies. **Water is still the best way to get hydrated.** Sports drinks should be reserved for intense physical activity lasting over an hour like running or hiking. If you feel low energy, try drinking water and eating an apple or a carrot. Nutritious foods are a better source of electrolytes. Drinking sugary beverages on a regular basis negatively impacts our health and reduces our ability to enjoy the subtle flavor of water.

Cultures around the world equate water with healing and energy. People travel great distances to drink or bathe in water from mountains, wells and springs that are imbued with special energy. Many people believe that water has the ability to absorb prayers, cleanse unwanted energy and bestow good medicine. Clean water is increasingly hard for people around the world to access, and many are standing up to protect it. With increased pollutants and even prescription drugs tainting our water, many people are forced to buy filtered water. When we understand how dependent our bodies and our planet are on clean water, we are more likely to appreciate it and work to protect it.

# Making Infused Water

Store-bought flavored waters usually contain sugar, artificial sweeteners and artificial flavors. Try making your own refreshing drinks with your favorite herbs, spices, edible flowers, fruit and vegetables! Preparation is very simple:

- Gather your ingredients (see below for ideas) using a large glass bottle or jar.
- Chop or slice fruits and vegetables.
- Place your ingredients inside the jar and cover with water.
- Let the water sit for a few hours so the flavors can infuse. The longer it sits, the more flavorful the water will be and more nutrients will be extracted. (*tip: prepare an infused water just before bed, place it in the fridge and your delicious water will be ready to enjoy the next day.*)
- Drink the water the day you prepare it if it is room temperature. You can keep flavored waters in the refrigerator for up to three days.
- You can use fizzy water for added excitement.
- Eat the fruit or veggies after your drink your water. They will still be packed with flavor and nutrients.



## Possible Ingredients:

Sliced fruit: cherry, lemon, lime, orange, grapefruit, melon, apple, pear, cucumber, plum, kiwi.

Vegetables: fennel, celery, carrots.

Berries: They can be fresh or frozen. Slice larger berries.

Fruit concentrate: lemon, lime or tart cherry.

Sprigs of aromatic herbs: basil, lemon balm, mint, rosemary, sage, thyme, basil, cilantro.

Fragrant edible flowers: rose, lavender, chamomile, violet, hibiscus.

Fresh spices: long thin slices of ginger, turmeric, jalapeno, cayenne.

Tips of evergreen tree branches: Douglas fir, grand fir, spruce, hemlock.

## Tasty combinations:

- Cucumber mint: great for hormone and blood sugar balance, to combat bloating and to help cool you down on a hot day!
- Strawberry Douglas fir: rich in vitamin C, electrolytes and antioxidants- this combination boosts immunity and energy.
- Blueberry, lemon, ginger: aids in digestion and may soothe heartburn.
- Orange, lemon balm, lavender: calming and uplifting.
- Huckleberry and lavender: delicious and balancing.
- Frozen raspberries with a splash of rose water and a teaspoon of tart cherry concentrate - strengthens blood vessels, boosts immunity and helps alleviate muscle aches and pains.



# Herbal Teas

*Like ancient alchemy, the making of herb tea involves the mixing and brewing of different elemental forces... Herbal teas, properly prepared, are warming and soothing to the soul. They provide essential medicinal qualities and healing energy. Preparing and drinking herb teas involves us in the personal process of healing and teaches us to be conscious of the role we each play in our wellbeing.*

-Rosemary Gladstar

Tea making is both an art and a science. It is the most common way to extract plant medicine throughout the world – a legacy that has been documented for at least five thousand years. You don't need fancy equipment to make great tea - just quality herbs, a non-aluminum pot with a lid and a strainer will do.

Dried herbs are most often used for making tea. During the drying process, plant cell walls break open and dehydrate. When hot water is poured over plant material, it easily rehydrates and extracts the taste, scent, nutritive and medicinal properties of the plant. Fresh herbs are fine for making tea if you want a light and aromatic brew but they will not be as strong tasting and medicinal as dried herbal teas unless they are chopped very fine. A larger amount (about double) of herb is needed for fresh plant teas to get the same medicinal dosage as dried teas. If you just want the aromatic flavors from plants, fine chopping is not necessary.

Good quality herbs are essential for making flavorful and medicinally effective tea. When available, purchase organic and fair-trade teas. They may be a little more expensive but they do not contain pesticides and you are supporting sustainable plant growers. If you buy herbal teas at the store, try to purchase loose-leaf tea that has not been ground into a fine powder (these teas are not in bags). The more ground up herb, the faster they lose their medicinal value. Make sure that the dried herbs look and smell something like the fresh herbs. Well-dried herbs should still have color and scent. Loose-leaf teas can be put directly into a teapot or pan with a lid. Avoid aluminum or copper pans as they can react with antioxidants and tannins. You can buy a strainer that fits over your teacup to catch the herbs.

Getting to know the flavor and medicine of individual herbs is incredibly valuable. This will help you to blend your own teas. Remember that if you are seeking a specific medicine from a plant, you need a large enough dose to make it medicinally active and probably don't want to blend it with a dozen other plants. Over time, you will find your own favorite flavor and medicine combinations.

## Harvesting Your Own Tea Plants

Few things are more rewarding than harvesting your own plants for tea. Some people find this an excellent excuse to retreat to outdoor places. As we gather herbs, our senses may become engrossed in the beauty of the woods – the song of a swollen creek, the meadow bursting with flowers, the animals gathering food for winter. These are the gifts of foraging. Later, plants are brought into the home to be processed. Their fragrance and colors grace the house with memories of outdoor adventures. Even if you are gathering plants from your own yard or local abandoned lots, the results are still gratifying.

If you have never gathered plants, it may feel a little daunting at first. When possible, find someone who can show you how and where to do it safely. Proper plant identification is



essential. Know that plants that you grow or harvest yourself will probably be higher quality than anything you can buy. In a time when plants are grown, harvested and processed all over the world in unknown conditions, it is reassuring to know where your plants come from and who has handled them. What better way than to do it yourself. Having said this, make sure that the area you are gathering from has not been sprayed with pesticides or other chemicals. Gathering along roadsides or in agricultural areas is generally not recommended.

### **Seasonal Harvest**

Knowing *when* to harvest a plant can be confusing. Your senses will tell you a lot. As you watch plants through the seasons, look for where the vitality is. Harvest whatever part of the plant you need when it is at its prime. Here is a general guideline:

- Leaves: spring and summer
- Flowers: spring and summer
- Fruit and seeds: summer and fall
- Bark: fall and early spring
- Roots: fall and early spring

Nettles are a great example of harvesting through the seasons. Tender shoots emerge from the damp ground in very early spring. When they reach three to eight inches, they are a delicious cooked green. As nettles grow, the leaves become tough and the stems are too fibrous to eat. But



is a perfect time to harvest and dry the deep green and fully developed leaves. In late spring to early summer the vitality in the plant moves into the flowers, which quickly go to seed. These nutrient-rich seeds can now be harvested, dried and added to food. In late summer through fall nettles reach their full height and the stalks are ready to gather for fiber that can be twisted or braided into strong cordage. The leaves are now thin and turning brown but the vitality has moved down into the yellow roots, which are at their peak in potency and can be harvested for medicine. Nettles offer unique gifts in each season.

### **Time of Day**

The best time of day to gather plants is in the morning after the dew has dried. This is usually when their medicine is most potent. In the heat of the day plants may wilt and their aromatic compounds drop a bit – it seems they have a naptime too. If you are planning to dry plants, do not harvest on a rainy day. Chances are, it will mold. Roots that need to be washed can be dried with a towel to remove excess moisture.

### **How Much Do I Harvest?**

Always pay attention to the area you are harvesting to make sure that you are leaving behind enough for the plant community to continue flourishing. It can take years or even decades for an area to recover from overharvesting. Use your heart and your head. Remember that most plants will actually benefit from a little bit of pruning and harvesting if you do it responsibly. Also, make sure you have time to process the plants you gather. Sometimes the bulk of the work comes when you get home.

## Drying Plants

To dry plants, place them in a warm place with good ventilation. Next to a wood stove with a fan running nearby is ideal. Keep the plants out of direct sunlight. If you are drying flowers, hips or seeds, lay them on flat baskets or paper bags. Spread them out so they are only one layer thick and turn them every day so they will dry evenly. Plant stalks or leaves can be dried this way or can be bundled with rubber bands and hung from the ceiling on a beam with nails or a hanging rack. If you are drying plants outside, bring them in at night so they don't absorb the dew and degrade faster. A Dehydrator works well too as long as it does not get too hot. Do not turn it over 100 degrees F. The plants will lose their scent and vibrant color if dried too hot.



Make sure you cut large roots and peel or cut off bark before the plant material dries. Small roots can be left whole for the drying process. Succulent roots like burdock and dandelion can be dried in a dehydrator to help them dry fully.

Once herbs are completely dried and crackly, remove any brown leaves or unwanted parts including stems, and then store them in glass jars or paper or plastic bags out of direct sunlight. If you live in a wet environment store them in glass storage containers or plastic bags. At this point a cool dark place will best preserve them. You can keep aromatic leaves and flowers whole and then crumble them up just before use. This helps preserve the aromatics. Your finished plant material should look and smell like the plant did when it was fresh. If it has turned brown and lost its scent, it has probably lost nutritional and medicinal value. Dried herbs generally last about a year.



## Proper Proportions of Herb & Water

When preparing teas, feel free to experiment and choose the proportion of herb to water that suits your taste. If you are using the tea as a medicine, the ratio of herb to water should be enough to produce a fairly strong and medicinally active tea. The ratio should also be consistent so that you can measure an appropriate dose of the tea each time you prepare a new batch. A general ratio for dry plant infusions is:

- 1 teaspoon - 1 tablespoon per cup of water  
(use less for dense herbs like roots and more for lightweight herbs)
- 1 ounce of dried herb per 1 quart of water

If you are using fresh herbs for your infusion, you can use about 1-2 tablespoons per cup of water or two ounces of herb per quart of water.

## Infusions

The aerial parts of plants (leaves, flowers, soft fruits, and aromatic seeds and roots) are usually made into an infusion, which means they are soaked in hot or room temperature water. Gently crush the dried herb between your fingers if it is not already coarsely ground (cut and sifted). Fresh plant parts are usually chopped before infusing to open up the plant cell walls and promote

extraction, but you may want to leave some flowers whole so that you can enjoy their beauty as the tea is steeping.

### Hot Infusions

Place the proper amount of herb in a container (a teapot, quart canning jar or pot, for example) and cover with boiling water. You may want to pre-heat a teapot with hot water so it does not cool the water down quickly. Stir the herbs if they are in a large vessel. This is not necessary in a teapot where the herbs are suspended in the top of the container. Place a tight-fitting lid on the container to retain aromatic compounds. Let steep for 10 to 20 minutes, and then pour through a strainer. Tannin-rich herbs such as black and green tea should steep for less time because they will turn bitter if steeped too long. Mineral-rich herbs such as horsetail, nettle, oat straw and red clover are best when steeped several hours to overnight. Squeeze the liquid out of the herbs if they are in a tea bag or strainer. Enjoy!



### Decoctions

Roots, bark, tough fruits and seeds are dense and require more energy for extraction. They are usually decocted (simmered in water). The plant material should be coarsely chopped (this can be achieved either by purchasing “cut and sifted” herb, by chopping the herb with some clippers, or by grinding the herb in a clean coffee grinder or blender.) In the United States and Europe, the usual time for simmering a decoction is 15 to 20 minutes. In China and many other countries, herbs are often simmered for several hours and *very* strong medicinal decoctions are consumed. Roots that are high in aromatic oils are best infused instead of decocted so that they do not lose their scent during boiling.

Making a Decoction: Measure herb and water. A general proportion is one teaspoon of herb per cup of water or one oz. of herb per quart of water. Place herb in a pot, cover with cool water and if possible let sit for 10 minutes so the so the plant material can become rehydrated. This prevents albumin in the plant from swelling when it is placed directly in hot water, which hinders extraction. Gently bring to a boil then reduce heat, cover the pot with a lid, and let tea simmer at least 15 minutes before straining. When decoctions cool, some of the plant compounds may precipitate and make the tea cloudy. This may not be aesthetically pleasing, but it is totally safe.

If you are combining aerial parts of aromatic herbs that should be infused with root, bark or seeds that should be decocted, you can try a couple different approaches. One is to prepare the herbs that should be decocted first, turn the heat off and add the herbs that should be infused. If the herbs are already combined, you can let the tea sit in cold water for 20 minutes, bring it to a boil, turn it off and cover it, and then steep at least 20 minutes before straining.



## Storing Teas

Teas are best consumed fresh, but when necessary, you can prepare larger batches and store them in the refrigerator in a tightly closed container for a maximum of three days. Teas may also be stored in the freezer for a few weeks.

*Making tea is a potential moment to be in the center of your own universe... body, mind and spirit. It is a moment to remember that we are related to Nature, we are the same, and all of our actions count. When you make tea, a really good cup of tea, it lights the world. It is a moment of grace that has no boundary. A good cup of tea tends the spirit and warms the soul.*

-Joyce Netishen

## Favorite Tea Recipes

### Nettle Mint Tea

*Equal parts nettle leaf and peppermint*

This refreshing and energizing tea is high in minerals that build strong bones, hair and nails. Nettles help with detoxification & allergies. Mint eases upset stomach & congestion. Use 1 T. per cup, steep 20 minutes to several hours.

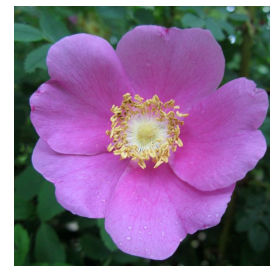
### Wild Berry Tea

*2 parts huckleberry, hawthorn, wild strawberry leaf, 1 part hawthorn berries, rosehips, hibiscus*  
Berries are high in antioxidants that protect our cardiovascular system and build immunity. Use 1 T. per cup, steep 20 minutes.

### Rose mint Tea

Equal parts rose petal, rosehip, peppermint, spearmint

This delicious tea is high in Vitamin C, opens respiratory passages and supports healthy digestion. Try it for mental clarity and to bring a little sweetness. Use 1 T. per cup, steep 10-15 minutes.





## Natural Sweeteners:

Sugar will not take the medicine away from plants, but it depresses immune function and rapidly raises blood sugar. There are several alternative sweeteners to sugar, including:

- Agave nectar. Agave is a native plant to the Southwest and Mexico. Juice from the center of the plant is extracted and concentrated to make a liquid sweetener that tastes sweeter than sugar but does not raise blood sugar as rapidly. Look for sustainably grown and harvested agave. Many products on the market are mass produced and may be tainted with corn syrup or other sweeteners.
- Honey. Honey has been prized for thousands of years as a sweetener and a medicine. It has natural antibacterial properties and can be helpful for sore throats and coughs. Honey raises blood sugar, but more slowly than sugar.
- Licorice root. Licorice is native to China. It has a strong sweet flavor like black licorice and can be used to sweeten tea without raising blood sugar. Licorice is soothing and anti-inflammatory, but people with high blood pressure should use it in moderation. You can purchase cut and sifted licorice root or the powder.
- Stevia. Stevia is a native herb to South America that is 30-45 times sweeter than sugar! It does not raise blood sugar levels and is an excellent sweetener for diabetics. You can purchase dried leaves, a liquid extract, or a refined powder.
- Xylitol. Xylitol is a natural sugar that is found in the bark of trees and many fruits, vegetables and mushrooms. It looks similar to table sugar and can be used in beverages and in baking. It tastes sweet but does not raise blood sugar. Xylitol is thought to be beneficial for dental health and intestinal health.



## Make your own soda!

There are mineral springs around the world with reported curative powers and some of them contain natural carbonation. People have historically traveled great distances to experience the curative effects of these mineral waters, and it was only in the 1700s that people figured out how to make synthetic carbonated water. They believed that the water would cure a variety of diseases. Brands including Perrier and San Pellegrino are bottled from springs and may contain additional carbonation.

Carbonated water is a fun alternative to sugary drinks. It is made by infusing pure water with carbon dioxide under pressure to make a sparkling drink. It is also known as seltzer water, soda water, club soda and fizzy water. A very small amount of salt may be added to improve the taste. The source of the water may be from spring water or even just city tap water. Many sparkling water companies add flavorings. We recommend natural flavors that often come from plant essential oils. Avoid sparkling waters that contain artificial sweeteners and calories.

To make your own soda, fill a glass with ice, add fizzy water, a squeeze of citrus fruit and a small amount of concentrated juice, tea or flavored syrup. Tart cherry concentrate has a wonderful flavor and has a strengthening effect on the heart due to high antioxidant content. Herbal extracts or syrups like elderberry, rose or mint can also be added. Sodas including Pepsi and Coca Cola originally gained popularity because they contained medicinal herbs with reputed health benefits. Many types of root beer still contain medicinal plants like sarsaparilla, sassafras, vanilla and cinnamon. You can come up with your own flavorful and medicinal soda! Adding frozen fruit can make homemade sodas more exciting to children.



## Herbal Ice Cubes

You can make delicious ice cubes from tea and keep them in a freezer bag for easy use. To make delicious tree fir tip ice cubes, place tree tips from Douglas fir, hemlock, spruce or true fir in each ice cube and then cover with Douglas fir sun tea. Freeze your favorite concentrated tea in ice cube trays with chopped little pieces of fruit or small flowers. These are a beautiful and refreshing addition water, lemonade and other beverages.

# Bone Broth

Broths are simple to make. You put bones, vegetables, herbs and spices in a pot, cover with water and simmer over a warm stove for a period of time. Marvelously, broth satisfies hunger with its comforting tastiness and supporting aromas. Even more magical is its ability to resurrect, restore, regenerate and beautify. Nearly every culture around the world has food traditions that include broths or stocks. Boiling bones is perhaps the greatest example of how our thrifty ancestors honored wild game and seafood by using every part of them. Broths were traditionally prepared as stone soups by dropping hot volcanic rocks in to a cedar basket or bentwood box lined with clay and tree pitch, fashioned well enough to hold water and bones. Eventually the water gets so hot it turns in to an instant rolling boil. Nowadays we have stovetops and crock pots to simplify the process.



Preparing your own bone broth and incorporating it in to your daily program is a great way to boost your health and immunity. These incredible liquids contain crucial minerals, like calcium and magnesium, which are anti-arthritic, anti-diabetic and great for nourishing and treating folks with conditions like cancer, anemia, muscular dystrophy and the flu. The components of bone broth go beyond water and micronutrients like minerals and vitamins. Collagen, cartilage and bone marrow are also key players.

Collagen is the most abundant protein in our body, making up about 25-35% of the entire body protein content. It is one of the most prevailing building blocks of our skin, muscles, blood vessels, digestive tract and connective tissue. Simply put, it is the glue that holds us together. As we age, collagen production naturally diminishes, and this can be addressed by drinking enough hydrating fluids and including bone broth in your diet.

Bones house nutrient-rich marrow deep in the central cavity. Marrow is a highly nutritious and central to brain development. Our ancestors treated marrow as a dietary supplement for children, a multi-vitamin and oftentimes a substitute for breast milk. Made largely of healthy fats and immune building blocks, it takes much less energy to digest than plant foods.

Cartilage is the glistening silvery-white gristle swirling through your elk steak and tucked in to the corners of that T-bone steak. These whitish globs also reside between our bones and are what our body uses as a shock absorber and friction reducer as we attempt any weight bearing movement. It is what makes our anatomy strong, resilient and pliable. Without it, our bones would grind together and life would be painful. When preparing bone broth, cartilage is released in to the preparation and takes form as gelatin. Wiggly and indiscrete, gelatin is responsible for restoring and repairing the inner lining of the digestive tract. It binds to the walls of our intestines and assimilates nutrients like nobody's business. Make no bones about it, gelatin is behind the scenes powering up this healing elixir's potential.

Ultimately, broths are a great way to incorporate more water into your daily program. They truly make for concentrated healing, and some say they are the oldest and most powerful medicinal beverage. They are filling, rich, complex and soul satisfying. They also quell inflammation, speed wound healing, combat fatigue, address insulin resistance, promote a healthy gut and build immunity. Specific conditions that bone broth can address are listed below.

## Conditions that Bone Broth Addresses:

aging skin	heart attack	muscle cramps
allergies	high cholesterol	muscle spasms
anemia	hyperactivity	muscle wasting
anxiety	hyperchlorhydria (reflux, ulcer)	muscle weakness
asthma	hyperparathyroidism (primary)	Muscular Dystrophy
atherosclerosis	hypertension	nausea
attention deficit	hypochlorhydria	nervousness
bean maldigestion	hypoglycemia	Osteoarthritis
brittle nails	immunodepression	Osteomalacia
carbohydrate maldigestion	increased urination	Osteoporosis
Celiac Disease	infectious disease	pain
colic	inflammation	palpitations
confusion	Inflammatory Bowel Disease	Periodontal Disease
constipation	(Crohn's Disease, Ulcerative	pregnancy
dairy maldigestion	Colitis)	rapid growth
delusions	insomnia	restlessness
dental degeneration	intestinal bacterial infections	Rheumatoid Arthritis
depression	irritability	Rickets
detoxification	Irritable Bowel Syndrome	seizure
Diabetes	Jaundice	shallow breathing
diarrhea	joint injury	stupor
fatigue	Kidney stones	virility
food sensitivities	leaky gut	vomiting
fractures	loss of appetite	weakness
Gastritis	meat maldigestion	weight loss due to illness
grain maldigestion	memory	wound healing

## Sourcing Ingredients

If you are a hunter who processes their own animal, set aside the major marrow bones. Try to process them small enough for a soup pot, and if you are not ready to make your broth quite yet, freeze the bones until you get set up. They should be good for at least six months in the freezer.

If you are purchasing your bones it is most ideal to buy them directly from a farmer or butcher that is engaged in non-toxic management practices. Organic, grass-fed, pasture raised animal bones is the goal. Remember we are trying to make medicine, and animals raised with the highest integrity are going to be more nutrient dense and contain a significantly less amount of toxins than those raised in commercial animal feedlots. The best bones are knuckles, joints, femurs, backs, neck and feet.

## Equipment

Using steel, cast iron, enamel, or aluminum cooking pots is best. Slow cookers and pressure cookers are impressively convenient and highly recommended. Metal colanders and cheesecloth are also nice to have on hand and useful for straining out any floating bits.

## Storing

Freezing is the easiest way to store your prepared brew and can keep you stocked up for three months out. You can also store your broth in the refrigerator, but try to use it up within the week. Find freezer safe containers or try using wide mouth mason jars. If you are using glass jars, make sure you only fill it up  $\frac{3}{4}$  of the way to allow space for the crystals to form and to avoid making an explosion happen and a mess out of your freezer. Let the jars cool before you refrigerate or freeze so the temperature drops at a safe rate.

## Basic Bone Broth Recipe

### Ingredients:

Bones - from poultry, fish, shellfish, wild game, beef

\*This could include: raw bones (preferably the spine and femurs), whole carcass, shellfish shells and whole fish carcasses.

Cold Water - enough to cover the bones

Vinegar - a splash or 2 tablespoons per quart of water

Vegetables - onions, garlic, carrots, celery are great additions

Herbs - bay leaf, peppercorns and parsley add great flavor

### Instructions:

Combine all ingredients in a large stockpot, ensuring everything is completely submerged under water and bring to a boil. Reduce to a simmer and cook for up to 12 hours. Strain the bones and remnants out of the stock using a colander or sieve lined with cheesecloth. Allow to cool to room temperature and then store in the freezer for up to three months, or the refrigerator for up to five days. Use your prepared broth as a base for soups or gravy, or as a cooking liquid to replace water. You can also warm it up and drink it like a tea.

# Smoothies

A smoothie can be a great way to get beneficial nutrients into your body. They are a fast, fun and easy way to achieve optimal health for both adults and children! Sneaking leafy greens, nuts and seeds can be accomplished with one quick whirl of the blender. Fortunately, smoothie recipes can be distilled down to one simple “skeleton” recipe that allows you to get creative and add your own exciting touches. The endless prospects of blending options will never leave you dissatisfied or bored.



## **Skeleton Recipe:**

- 1-2 cups of soft fruit (bananas, mangoes, pineapples)
- 1 cup frozen fruit (strawberry, blueberry or huckleberry)
- 1 cup nut milk (almond, hazelnut or coconut)
- 1 cup water or juice (unfiltered apple preferred)
- ½ cup yogurt (optional)
- ½ tsp spices (like cinnamon, cardamom, ginger, nutmeg)

Recipe makes approximately 30-36 ounces of blended goodness.

Combine ingredients into a blender or a food processor. Make sure to layer them in this order: bananas, frozen fruits and/or vegetables, liquids and spice last. If you put the frozen ingredients at the bottom of the equipment you risk burning out the motor faster and your blender will let you know by screaming loudly in desperation. Make sure your experience is pleasant and that you are making smoothies, not sorbet—put frozen ingredients on the top. Blend until you get the consistency desired. The goal is to have a silky, creamy, almost milkshake consistency to your blended beverage. Pour and enjoy.

## **Ingredient options:**

Fresh soft fruit: This can be melons, mangos, papayas, citrus fruits, but the most common are bananas, which bring a creamy, rich and sweetened flavor to your smoothies. They are also great binders and are high in potassium—an essential mineral for maintaining normal blood pressure and heart function. Potassium also builds bone health and helps prevent osteoporosis.

Frozen fruit: Blueberry, strawberry and huckleberries freeze well. Frozen fruits are typically picked at the height of their season and flash frozen soon after – this means they have a fairly high nutrient value and vitality, oftentimes more than what you may find in the fresh produce department. Frozen fruits, particularly berries, make great additions to smoothies, as most are high in fiber, vitamin C, antioxidants and do not significantly alter blood sugar levels. In fact, they help protect the body from the negative effects of high blood sugar including diabetic retinopathies, kidney damage and poor tissue healing. Recent research suggests that blueberries and huckleberries lower cholesterol and help prevent heart disease, cancer, and bladder or urinary tract infections.

Other frozen fruits are great options including pineapple, cherries, apples, mangoes—the varieties are endless. You can even buy frozen kale and spinach to add in to your blending options. That way you get your greens, a fruit serving or two, and you stay hydrated.

Liquid options: It is nice to add some layers here. Hazelnut, almond and coconut milk are all great alternative milk options that you can find in nearly any grocery store. They are quite affordable, but you can also make almond or hazelnut milk at home with your trusty blender. To do this, soak the almonds or hazelnuts overnight in water. In the morning, place the nuts and water in the blender, blend and then strain out the milk. Almonds are high in healthy fats that can help to lower the risk of heart disease and decrease depression.

The next liquid option is water or juice. If you choose to add juice, unfiltered organic apple juice is a great option. Unfiltered is the key word here. You may not find “unfiltered” labeled on the juice bottle, but by looking at the juice you can tell it is unfiltered since it is not crystal clear. Fruit juice that has been robbed of its fiber will raise your blood sugar very quickly. If you purchase juices *with* the pulp, you are getting more fiber, which slows your body’s absorption rate of sugar. So, although eating the whole fruit is always a much healthier option, today we are using an unfiltered juice to act as a low glycemic index sweetener.

Yogurt: The addition of yogurt creates a creamy consistency. Natural yogurt is packed full of probiotics, or good bacteria, that help our body digest and absorb nutrients. For those that are lactose intolerant, you can skip this ingredient.

*You can get really creative in choosing smoothie ingredients. Choose any kind of berries, frozen fruit, juice, and milk. Other possible additions include oils from flaxseed, hemp seed or evening primrose, greens, such as spinach, chard or kale, dried nettle powder, spirulina, chia seeds, vanilla extract, coconut milk, cardamom and more.*



### Huckleberry Smoothie

In a blender place:

- 2 bananas
- 1 cup frozen blueberries or huckleberries
- 2 cups water
- ½ cup yogurt (optional)
- ½ tsp cinnamon
- A few drops vanilla extract

Blend until smooth and pour in glasses. Servest two. Cinnamon and blueberries are especially helpful for diabetes prevention and treatment.

# Blueprinting your Beverage Station

*Thanks to Fiona Devereaux, dietitian, for contributing this section:*

Below are the tools and resources you will need to set up a **healthy drink station**. Choose resources and beverages that will excite and educate those you are serving.



Target number of people tasting drinks: 50-100 adults and/or children

## Basic ingredients for a drink station:

Flavored waters – pre-prepared or available for people to assemble.

Hot tea – pre-prepared or available for people to make their own.

Iced tea – prepared ahead of time.

Some examples of sugary drinks with the measured amount of sugar they contain.

Informational posters, cards and other resources.

## List of equipment and Supplies:

- 12 quart mason jars with lids
- Kettle to boil hot water
- Hot tea serving kettles (press pots)
- Glass pitchers and drink serving containers (You can use plastic pitchers for cold drinks.)
- Samples of fresh and dried tea plants for demonstration
- Fresh or frozen plants for infused waters (Examples include evergreen tree tips, sprigs of herbs, fruits and vegetables.)
- Reusable tea bags to fill with tea or single use tea bags
- Refrigerator or cooler
- Table (6-8 feet)
- Cups, either sample size 2 oz size or larger 6-8 oz size
- Water
- Ice cubes or crushed ice
- Signs showcasing types of drinks, nutrient content, plants used, etc.
- Paper towel or cloth for spills
- Small garbage

## Optional supplies:

- To make natural sodas you will need fizzy water, juice concentrate or concentrated tea. You can add fresh fruit from the station.
- If you want to make a self-serve tea station you can bring bowls and spoons, loose leaf teas and signs.
- Make natural soda: serve tea or juice concentrate with sparkling water and fruit or herbs.



### Preparation for the day or night before your event: Iced tea and flavored waters

- Gather 12 clean 1-quart mason jars.
- Boil the kettle.
- Prepare plants and/or tea bags.
- Put 3 teabags or 3 tablespoons of bagged plants into each jar and fill with boiling water.
- Cover jar with lid to keep essential oils and fragrance of the plant in the jar.
- Let cool on counter.
- Watch the plants gift their medicine to the water and **store in the fridge** overnight.
- For evergreen tree tips – use 1/2 cup of tips and cover with cold water and store in fridge overnight.

### Day of Event

Transfer drinks into drink containers at home or at event.

Add ice and display signage.

Make station self-serve or serve the community.

Decorate the table with live or dried plants and teaching books around native plants.

If you are serving children, have a large pitcher to place tea that did not get drunk.

### Tips for Success

- Serve a hot tea and an iced tea.
- Choose flavors that participants will likely enjoy.
- Encourage sampling of small amounts first.
- Thank people for being courageous to try new things, even if they do not like the tea.
- Remind people that their “yuck” might be another person’s “yum” and to be considerate.
- Have each person invent their own recipe/brand of infused water with herb sprigs and fruit. They can come up with their own name.
- Document favorite recipes and share them.
- Encourage people to try new flavors.
- Have fun!



# Dandelion

Dandelion (*Taraxacum officinale*) is both a nutritious food and a powerful medicine. This common “weed” thrives in cracks in sidewalks, grassy lawns, well-tended gardens, abandoned city lots and even mountain meadows. It is surprisingly easy to misidentify. Many look-alike plants have similar leaves, but dandelion leaves are hairless. They have toothed edges, hence the French name, “dent de lion” or lion’s tooth. Leaves and hollow flower stems grow directly from the rootstock. There is only one flower per stem.



**Food:** Early spring dandelion leaves can be added to salads fresh or cooked by steaming, sautéing or boiling them. Older leaves become bitter as they are exposed to increasing amounts of sunlight. Dandelion flowers have a surprisingly sweet and mild flavor. Only the base of the flowering head and the green sepals (they look like tiny leaves) are bitter. You can pull the flowers off and use them straight in salads or add them to cooked foods like quiche, pancakes, muffins and fritters. Dandelion is high in minerals including potassium, calcium, magnesium, iron and vitamins A, B and C.



**Dandelion Medicine:** Dandelion is one of the oldest documented medicinal herbs. The leaves are diuretic and help our kidneys to excrete excess water. Dandelion root supports our liver and kidneys in getting rid of waste products including dietary toxins, drugs, hormones and metabolic waste. Herbalists use dandelion for easing allergies, hay fever, gout, PMS, arthritis, hives, acne, psoriasis, hepatitis and constipation. In fall, dandelion root is sweeter and is high in a carbohydrate called inulin, which is excellent for gut health and insulin balance.

To preserve leaves for tea, harvest on a dry day. Use a rubber band to bundle small bunches then hang to dry, or dry leaves in single layers in baskets. Store in a glass jar for up to a year. Use 1 T. per cup of boiled water and drink 2-3 cups a day. To dry dandelion roots, dig up in spring through fall, wash thoroughly and dry whole in a dehydrator, a basket next to a wood stove, or hang to dry. Once dry, use clippers to cut into small pieces and store in a glass jar.

## Dandelion Root Latte

When dried dandelion root is roasted, it is reminiscent of bitter-sweet coffee. Place chopped dried roots on a cookie sheet and roast in an oven for about 30 minutes at 200 degrees. When the roots turn golden-brown and begin to smell sweet, they are done. Place 1 teaspoon per cup in a pan of cold water, bring to a boil and turn down to simmer for 5-10 minutes with the pot covered. Serve warm with milk and honey.



# Douglas Fir

Douglas fir (*Tseudotsuga menziesii*) thrives in shady forests, sunny open areas, mountains and coastal bluffs. It can grow into a 1,000 year old giant with a straight trunk over 21 feet thick and a height of 75 meters. The young bark is grey and smooth with resin blisters, but turns corky, reddish brown and deeply furrowed as it gets older. It is called the “grooviest” tree in the forest. Needles are all the same length, are pointed at the tip (but do not hurt you when you brush up against them) and are spirally arranged all around the branch like a bottlebrush.



Male Douglas fir cones are small and produce a massive amount of golden pollen that is carried in the wind. Larger female cones hang down, look woody, and have 3-pronged bracts that resemble the tail and rear feet of a mouse. In a common Salish story, a long time ago mice were running from a fire and dove into Douglas fir cones to find refuge, where they have become eternally stuck. Mice, birds and other small creatures eat the seeds, which are hidden between the scales.

**Food and Drink:** Douglas fir spring tips are tart and tasty. They contain vitamin C and electrolytes. Salish elders teach that they have long been valued for warding off hunger and thirst. You can eat them fresh, freeze them or dry them. Both hot tea and sun tea are tasty. Needles can be infused in honey or vinegar. They are used to flavor liquors, syrups, sauces and ice cream.

Other conifer trees can be eaten or made into tea including hemlock, spruce and true firs like grand fir, noble fir, Frasier fir and subalpine fir. Try making tree tip sun tea and then freezing it in ice cube trays. You can even put a tip in each cube. Add the ice cubes to water or other beverages to make a tasty and thirst quenching drink!

**Medicine:** Like other evergreen conifers, Douglas fir needles and pitch are high in aromatic resins that fight infection and stimulate immunity. Dried needles are made into tea for internal use and for baths. The fresh chopped needles can be infused in oil to make a body oil, lotion, or salve. The pitch is used directly on wounds or added to salve.



## “Nature’s Gatorade”

Pick the young tips in spring, place them in a jar, cover with water, place a lid on the jar, and let it sit in a warm place for 4-12 hours. Strain and enjoy. You can mix it with lemonade for a refreshing summer drink!

# Hawthorn

Hawthorn (*Crataegus spp.*) is a deciduous tree with branches that are armored with large thorns. Fragrant flowers are small, pinkish-white, and bloom in thick clusters. Berries are red to blue-black in color and have large seeds.



Native hawthorn has deep green leaves and blue-black berries, and it grows in forest edges or fields. European hawthorn has become naturalized, has small deeply lobed leaves and red berries, and grows just about anywhere with partial sun. Hawthorn is in the rose family.

**Food:** Hawthorn berry is high in the trace minerals selenium, which is important for immune function, and chromium, which enhances the function of insulin, a hormone that regulates blood sugar levels. The seeds are not edible. Many people like to make hawthorn jelly, and because the berries are high in pectin, only half the recommended pectin is required. Pectin content is highest in early fall and decreases once the berries become very ripe. Apples, rosehips and hawthorn berries can be combined to make jelly.

**Medicine:** Hawthorn supports cardiovascular health. It is used both as a daily tonic for promoting general wellness, and as a medicine for treating a wide range of cardiovascular disorders. Antioxidants in hawthorn strengthen blood vessels, help heal damaged vessel walls and help arteries to be more pliable. If it is used regularly, it can help balance both high and low blood pressure by increasing the heart's ability to contract and gently relaxing outer blood vessels so the heart has less resistance to pump against. Hawthorn also relaxes smooth muscles of the coronary artery walls and allows more blood to flow into the cells of the heart. Hawthorn may also be helpful for varicose veins, Alzheimer's disease, cataracts, glaucoma and the side effects of diabetes, including diabetic retinopathy, kidney damage and vascular degeneration. Like other members of the rose family, hawthorn helps to tighten inflamed and irritated tissue. It is traditionally used for sore throats, diarrhea and upset stomach. If you are using cardio-active pharmaceuticals like digoxin, check in with your doctor before using hawthorn.

Hawthorn flowers and leaves are harvested in spring when the flowers are budding and just starting to open. They have a slight fishy odor, but this is hawthorn's clever way of attracting flies and other pollinators. The smell disappears when the flowers are dried. Berries are harvested in early fall when they are bright red and taste sweet. You can dry branches whole in baskets, paper bags or bundle them with rubber bands and hang them. Once completely dry, remove the leaves, flowers, or berries from the branches. You can also pick leaves, flowers or berries off the branches when they are fresh. Be careful to avoid the thorns! Store in glass jars or bags in a dry area. They will last about a year.

**Hawthorn Tea** – Steep leaves, flowers and berries in boiled water for 15 minutes. The berries can also be boiled for ten minutes, which will bring out more pectin but will diminish vitamin C content. Drink up to three cups a day.

# Huckleberry

What is better than wandering through the woods and finding a bush covered in ripe huckleberries? There are more than 12 species of huckleberries in the Pacific Northwest, which grow in habitats ranging from the coast to the high mountains. Huckleberries come in many sizes. Dwarf whortleberry is a mere six inches tall and is covered in tiny red berries that would satisfy a mouse, while the bigger mountain blueberries and huckleberries are large enough for a bear to gorge on. All huckleberry fruits have a circular “crown” on the opposite side from the stem. Berry colors range from orangey-red to purple to deep blue-black.



Red Huckleberry *Vaccinium parvifolium*. You will find red huckleberry growing from nurse logs in shady forested areas. It grows to nine feet tall. Stems are green colored and the deciduous leaves are limey green with smooth edges. Only young leaves remain on the bush throughout the winter. Greenish-white bell shaped flowers bloom in April through July. Pink to orange-red fruit is round and up to 1/2 inch in diameter. Berries are ripe in June to August and are usually eaten right off the bush.



Evergreen Huckleberry *Vaccinium ovatum*. This bushy evergreen shrub grows to nine feet tall in evergreen forests, open woodlands and clear cuts. Leaves are leathery with toothed edges and a strong central vein. Flowers are white to pink and bell shaped. Berries are dark blue to black, about 1/4 inch in diameter, and are ripe in August through November. They get sweeter after the first frost. While most types of huckleberries cannot be cultivated, the evergreen

huckleberry is an exception. Many nurseries carry evergreen huckleberry and they are common landscaping plants in public spaces. Rubel blueberries are also available at many plant nurseries, which are close to huckleberry in antioxidant content and flavor.

Mountain Huckleberry (*Vaccinium membranaceum*) or big huckleberry is a deciduous shrub growing two to four feet tall in open mountain meadows. It has oval shaped, finely toothed, greenish-yellow leaves that taper to a fine tip. Flowers are pinkish-white and bloom just after the snow melts. The fruits are shiny, about 1/2 inch in diameter and very dark purple to red. They are usually ripe in August through early September when the leaves are turning red. They are the sweetest of our huckleberries.





**Food and Medicine:** Many people look forward to summer as the time of berry picking. Huckleberries are not only one of the most important cultural foods to Salish People, they are also one of the healthiest. They do not raise blood sugar and are an important food for pre-diabetics and diabetics. The berries and leaves are high in antioxidants, which help protect the body from the effects of high blood sugar including diabetic retinopathies, kidney damage and poor tissue healing. Recent research studies suggest that blueberries and huckleberries lower cholesterol, slow age-related dementia and reduce tumor formation. They are also excellent for heart health and can ease varicose veins and hemorrhoids.

Huckleberries and blueberries contain arbutin, a plant compound that helps to fight bacteria often associated with urinary tract and bladder infections. The berry juice or the leaf tea can be used as a preventative and a treatment.

If you cannot gather your own huckleberries or blueberries, you can purchase them frozen in most stores throughout the year. They are relatively inexpensive in bulk at food coops. If possible, buy wild harvested or organic berries. You can add them to hot cereal, sprinkle them on cold cereal, or mix them into dressings, sauces and desserts. Cooking them increases their antioxidant content. The recommended daily amount for health benefits is 1/2 cup a day. You can preserve huckleberries through freezing, drying, canning and making fruit leather.

Huckleberry leaf tea: Harvest the leaves in spring through summer when they are fully developed and still a vibrant green color. Prune a few branches off each bush, and then hang them in a warm dry place out of the sunlight. When the leaves are fully dry, strip them from the branches into a basket and then store them in paper bags or glass jars. Use 1 tablespoon per cup boiled water and steep 10-15 minutes. Drink 2-3 cups a day. The leaves will last about a year.



### **Wild Berry Tea:**

*Two parts huckleberry leaf, strawberry leaf, hawthorn leaf and flower.*

*One part each hawthorn berry, rosehips, hibiscus.*

This delicious tea is rich in minerals, builds immune function, strengthens cardiovascular health and helps to balance the side effects of diabetes. It is also excellent for women's health and during pregnancy. Use 1 tablespoon per cup and steep 20 minutes. Drink 1-3 cups per day.

# Mint

Wild mint (*Mentha arvensis*) grows in wet fields and along streams and ponds. It has square stems, opposite leaves and tiny pink to purple flowers that are clustered around the stem. Plants spread by underground rhizomes and grow about a foot tall. The easiest way to identify mint is to crush the leaves and smell it. Many popular kitchen spices including basil, lavender, oregano, rosemary, sage and thyme are in the mint family. All are rich in aromatic oils.



There are hundreds of varieties of mint that you can purchase in nurseries, including orange mint, spearmint, chocolate mint, pineapple mint and chewing gum mint. Mint is easy to grow and prefers partial sun and frequent watering. It spreads quickly and can be hard to contain! Some gardeners prefer to grow it in a big pot or a bed with borders where it stays contained.

The best time to harvest mint for tea is in spring through early summer when it is fully-grown and the leaves are vibrant green. Aromatic oils are strongest before it flowers. Cut or pinch off above ground parts and dry them in baskets, or bundle them and hang them to dry. Strip the leaves off the stems, place them in a glass jar or bag, and store them in a cool, dark place. They will last about a year.



**Food and Drink:** Mint can be chopped fresh and added to soups, baked with vegetables and added to dips. It also makes a refreshing hot or iced tea. Try adding a sprig of fresh mint to your water bottle! You can let it steep for the whole day and enjoy the refreshing taste. Sliced fruits like strawberry, melon or citrus combine well with mint in a flavored water. Mint leaves are high in many nutrients including vitamins A, C, and K, and minerals iron, calcium and manganese.

**Medicine:** Mint is one of the most commonly used medicines in the world. It is anti-inflammatory, antispasmodic, cooling and invigorating. Like other plants in the mint family, it is rich in volatile oils that are antimicrobial, and warms the body and encourages circulation and sweating. Many people around the world use mint as an appetite stimulant and a digestive aid to ease upset stomach, nausea, intestinal problems and gas. Mint is also used during coughs and colds to help to relieve congested sinuses and lungs.

**Aromatherapy:** Mint is a very versatile essential oil that is added to many of our everyday products including gum, candy, mouthwash, toothpaste, shampoo, soap, deodorant and cleaning products. Mint essential oil is an excellent remedy for painful heated conditions like injuries and arthritis because it feels cool to the skin and is anti-inflammatory and antispasmodic. A dilution of the essential oil or mint tea can help sooth itchy hives and chicken pox. It can also be inhaled or added to salves to help clear sinus and lung congestion. It takes about 300 pounds of mint to yield a pound of essential oil.

# Stinging Nettle

Nettles are our first edible greens to emerge in spring. You can find nettles in fields, streambeds and disturbed areas with rich wet soil from the coast into the mountains. They grow 3-9 feet tall and have opposite deep green leaves with serrated edges, tiny greenish flowers and square stems. The stalk and under-side of leaves are covered with stinging hairs that rise from a gland containing formic acid.



**Food:** Nettles are often called a “superfood” and are one of the highest plant sources of chlorophyll, vitamins, amino acids and minerals including calcium, magnesium and iron. Ways to prepare nettles for food include boiling, steaming and sautéing. They only need to be boiled for a few minutes, as the “sting” will evaporate with heat. Nettles will cook down like spinach and can be used in soups, dips, quiches, casseroles, meat pies, egg scrambles, etc.

Gather nettles to eat fresh *before* they flower in March-May. Gloves or scissors are usually used to avoid being stung. Do not gather nettles in agricultural or industrial areas because they may absorb inorganic nitrites and heavy metals.

Nettle season is short, but you can enjoy their benefits throughout the year by preserving them. To can them, follow instructions for spinach. To freeze them, wash them, blanch them in a pot of boiling water for 2-3 minutes, cool them in a bowl of water and then place them in a freezer bag. You can freeze many bags of nettle quickly this way. The water you cooked the nettles in makes delicious tea or soup broth. Nettles can be dried and used as a seasoning.

**Nettle Medicine:** Nettles help to bring the body back to a state of balance. They balance blood pH and assist our kidneys in filtering waste from the body and removing excess fluid retention. They can be especially useful for arthritis, gout, eczema and skin rashes. Nettles can help build blood after menstruation, birth, or other blood loss. Many people say that nettles help to reduce allergies. To ease hay fever, drink 2 cups of nettle tea a day starting early in the spring and continuing into the allergy season. Nettles reduce inflammation, which helps with the symptoms of allergies and many other complaints. Nettle tea is used as a hair rinse to make the hair glossy and stimulate growth.



To dry nettles, bundle them and hang them upside down in a dark dry place, or place them in a basket or paper bag and rotate them every day until dry. Strip the leaves off the stem and store away from sunlight.

**Nettle Tea:** Use 1 tablespoon of leaves per cup of boiled water. Steep 15 minutes to several hours. Drink 1-3 cups a day. Try making a large batch of tea and keeping it in the fridge for up to 3 days. Many people say they feel more energetic when they drink nettle tea on a regular basis.



# Strawberry

Wild strawberries are creeping perennials that grow in mats in woodlands, open fields and on grassy beaches. Flowers are white with five petals and many stamens. Leaves are toothed and are grouped in threes. The fruit is orange to red colored and about ½ inch across. Plants spread quickly by runners.



**Eating strawberry:** Wild strawberries may be only the size of the tip of your pinky finger, but they pack more flavor than the giant strawberries we can get in stores. Elders often complain about how store-bought strawberries just do not taste like they used to. In this time when our global food system values quantity over quality, these little berries remind us that some of the most sensational flavors can only be found in the wild.

Strawberry is a celebratory food that teaches us to take in the ripeness of the moment. Northwest Coastal Native People traditionally ate them fresh in the field and considered them a party food. They can be eaten fresh, baked into desserts, added to drinks, made into jam, sauce or fruit leather, or frozen for later use.



*You could smell ripe strawberries before you saw them, the fragrance mingling with the smell of sun on damp ground. It was the smell of June, the last day of school, when we were set free... Even now, after more than fifty Strawberry Moons, finding a patch of wild strawberries still touches me with a sensation of surprise, a feeling of unworthiness and gratitude for the generosity and kindness that comes with an unexpected gift all wrapped in red and green.*

-Robin Wall Kimmerer, *Braiding Sweetgrass*

**Strawberry medicine:** Strawberry leaves can be dried and made into a mineral-rich tea. They have a pleasant mild flavor and will act as an astringent to gently tighten inflamed tissue, including swollen gums, sore throats, upset stomach, sore eyes, burns and diarrhea.

The whole strawberry plant is thought to be cooling, strengthening and healing. The leaf contains vitamin C, which helps to heal and strengthen tissue, Methyl salicylate, which feels cooling and acts as an anti-inflammatory, and quercetin, which stabilizes inflammation. Recent research has revealed that strawberry contains ellagic acid, which has antioxidant, anti-mutagen and anti-carcinogenic properties. Many people value strawberry leaf as a women's tonic to strengthen blood (it contains iron and other minerals), prevent miscarriage and ease morning sickness.



**Strawberry leaf tea:** Use 1 tablespoon per cup and steep about 15 minutes. Drink 1-3 cups a day. It combines well with other berry leaves including huckleberry, raspberry and hawthorn.

# Wild Rose

Wild roses have beautiful pink five-petaled flowers that develop into red to orange colored round fruits called rosehips.

We have several species of wild roses in our area including Nootka rose, swamp rose and bald hip rose. They grow in variety of habitats including wooded, open, dry and moist

locations from low to middle elevations. Nootka Rose generally prefers sunnier spots while dwarf Wild Rose is usually found in shaded areas. Many roses form dense thickets. Rose flowers are harvested in May, while the hips are harvested in early to mid-autumn when they are ripe but not turning brown.



**Food and Medicine:** Rose petals have a delicious taste and can be added to drinks, syrups and desserts. They are often dried and added to teas. Because of their strong flavor, they are best when combined with other herbs. Rose petals can also be infused in oil, honey, vinegar and alcohol. They tighten inflamed tissue and promote healing.

Rosehips are so loaded with nutrients that they can be considered a superfood. They contain the Vitamins A, B complex, C, E, K as well as numerous minerals, including calcium, silica, iron and phosphorous. Rosehips are particularly high in flavonoid-rich antioxidants, including rutin that help strengthen our heart and blood vessels. They contain carotenes including lycopene that have been linked with cancer prevention. Natural pectin found in rosehips is beneficial for gut health.



Perhaps the most common use of rosehips throughout history has been for prevention and treatment of colds and flu. Wild varieties have the highest concentration of Vitamin C, with some estimates reporting 30-50 times the Vitamin C of oranges. Natural health stores carry many types of rosehip remedies including teas, syrups and capsules. Most grocery stores now carry rosehip tea. You can remove rosehip seeds

with a tiny spoon or the head of a nail. You can also dry them whole as long as you remove the brown sepals, which allows the inside to air dry without molding.

**Rosehip Tea:** Use 1 heaping teaspoon of deseeded rosehips or 1 tablespoon of whole dried rosehips per cup of boiled water and steep in hot water for 20 minutes. Some people prefer to boil rosehips, which makes a stronger tasting brew. You will lose some Vitamin C with boiling but it may increase mineral and pectin content.



# Navigating the Beverage Aisle

Our grocery stores and convenience stores are packed with beverages in a dizzying assortment of flavors and colors. Labels and advertisements claim that drinking these products will renew our energy, make us better athletes, help us find community and even enjoy life more. Here is some information to help you make empowered choices about what you drink:



**Sugary drinks:** The amount of sugar in drinks can be surprising. Four grams of sugar equals one teaspoon. Divide four into the number of grams of total carbohydrate (which is a fancy word for sugar) to find the number of teaspoons of sugar per drink. Many drinks have two to four servings in each container, so multiply the sugar in one serving by the number of servings.

**Drinks with added vitamins, minerals and herbal extracts:** The beverage aisle is full of drinks that include minerals, vitamins and herbs. Beverage companies claim these supplements will make us stronger, healthier and more energetic. There are about 30 vitamins and minerals that we need to stay healthy, and these are best obtained from whole foods that are found in nature. Many vitamins and minerals are created synthetically in laboratories, and we do not digest and absorb them as readily. Vitamins taste bad, and when they are added to beverages, companies mask the flavor with a significant amount of sweetener.

Drinks that boast herbal supplements like ginseng contain such small amounts of plant medicine that the effects are insignificant. It is also difficult to know how these plants were grown, harvested and handled. When plants like agave, kava, Acacia and ginseng become the latest health craze, increased demand often has a negative impact on the place where the plants grow and the people who traditionally use them.

**Key Teaching:** *Vitamins, minerals and herbal medicines are best found in whole foods and teas.*

**Juice:** In moderation, juices are good for you. But juice tends to be high in sugar, and this simply isn't the best way to get our calories. Pediatricians recommend no more than 6 ounces of juice a day for children up to age 6 and no more than 12 ounces for children ages 7-18. Dentists recommend that children consume juice with meals so that the sugar has less of a chance to adhere to tooth walls. Also, if juices are ingested before bed, make sure your child brushes their teeth so cavities don't have a chance to form.

Juices with pulp retain more nutrients and raise blood sugar more slowly. You will find pure juice in the refrigerator case of your supermarket, frozen and concentrated juice in the freezer section and canned and bottled juices on the beverage aisle. Fresh squeezed is the most nutritious and flavorful, followed by squeezed and pasteurized and then reconstituted from concentrate. If the product does not say 100% juice on the front label it probably has very little juice. Minute Maid orange drink is just 3% juice from concentrate, for example. Look at the label for the percentage of juice and amount of sugar.

**Key Teaching:** *Eat your fruits and vegetables instead of drinking them.*

**Artificial Sweeteners:** Artificial sweeteners are chemical compounds that are 30 to 8,000 times sweeter than sugar, but without the calories. Saccharin, acesulfame potassium (Ace K), advantame, aspartame (NutraSweet, Equal), neotame, and sucralose (Splenda) are currently approved by the FDA. The first artificial sweeteners were introduced to foods in the 1960's and they have been intensely controversial since because we simply don't know the health impacts over a long period of time. Health studies generally find that they are safe at recommended daily doses, but they have had mixed results at larger doses, and studies are often conducted by industry. Some people find that artificial sweeteners have an unpleasant chemical or bitter aftertaste. Sucralose is a chlorinated sugar that becomes indigestible and is excreted in the urinary tract. Phosgene, a poisonous gas, is used in the chlorination process. Some people who consume aspartame experience negative symptoms including dizziness, headaches and indigestion. Natural markets like Whole Foods refuse to carry artificial sweeteners due to health concerns and offer a variety of natural sweeteners instead.

Unfortunately, studies show people who consume diet beverages with artificial sweeteners are just as likely to develop obesity and insulin resistant disorders as those who drink sugary beverages. In the San Antonio Heart Study, participants who drank more than 21 diet drinks per week were twice as likely to become overweight or obese than those who don't drink diet soda. In the Multiethnic Study of Atherosclerosis, people who drank diet drinks on a daily basis had 36% greater risk for metabolic syndrome and a 67% increase risk for type 2 diabetes. Our body responds to artificial sweeteners in complex ways. Here are a few points to consider:

- It seems that artificial sweeteners trick us into thinking we can eat or drink other foods with calories. If we have a diet soda, we can have dessert, right? Recent research suggests that artificial sweeteners may take away our ability to associate sweetness with calorie intake. For instance, if we drink a sweet tasting diet drink, we have a harder time understanding that ice cream or sugary cereal will cause us to gain weight.
- Sweet tasting foods and drinks seem to increase cravings for more sweets. We tend to choose sweet tasting foods over nutritious non-sweet foods and drinks.
- When we overstimulate our sweet taste receptors it appears to diminish our ability to taste other flavors. Many adults who drink sweet beverages say that they do not like the taste of water. Children who consume sweet flavors are less likely to enjoy the flavors of fruits, vegetables, low sugar juices and teas. Fortunately, our ability to taste complex flavors returns once we consume less sweet and salty foods and drinks.

**Key Teaching:** *For optimal health, limit consumption of artificial sweeteners.*

# Additional Resources

Power point on sugar from Cynthia Lair, Bastyr University

[http://bastyr.edu/sites/default/files/images/pdfs/Marketing/BCNH Sweeteners Living Naturally 2.pdf](http://bastyr.edu/sites/default/files/images/pdfs/Marketing/BCNH_Sweeteners_Living_Naturally_2.pdf)

UCSF Sugar Science: the Unsweetened Truth

<http://sugarscience.ucsf.edu/sugar-sweetened-beverages/#.WQjJXk10y70>

<http://sugarscience.ucsf.edu/resource-kit/#.WQjI9U10y70>

Activities on oral health and sugary drinks: <http://cavityfreekids.org/>

Guess the sugar activity: <http://2oseib2jk7sm2ch5uy3ibuss.wpengine.netdna-cdn.com/wp-content/uploads/2016/03/Family-Engagement-Guess-the-Sugar.pdf>

Sugary Foods in a Day: <http://cdn2.cavityfreekids.org/site/wp-content/uploads/2016/03/Family-Engagement-The-Sugar-We-Eat-in-One-Day.pdf>

Water: <http://osnap.org/wp-content/themes/osnap.1.0/tip-sheets/water.pdf>

Posters: <http://www.kickthecan.info/educational-material>

Aboriginal Rethink Sugary Drinks. See videos and drink calculator:

<http://www.rethinksugarydrink.org.au/koori>

Harvard School of Public Health:

<https://www.hsph.harvard.edu/nutritionsource/healthy-drinks/sugary-drinks/>

Overview of drink resources: <http://www.kickthecan.info/educational-material>

## References:

- American Diabetes Association. *Economic costs of diabetes in the US in 2012*. Diabetes Care
- Derig, E. and Fuller, M. (2001). *Wild Berries of the West*. Mountain Press.
- Fallon, S. (2014). *Nourishing Broth*. Hachett Book Group.
- Gladstar, R. (1993). *Herbal Healing for Women*. Fireside.
- Henderson, R. (2000). *The Neighborhood Forager*. Chelsea Green.
- Krohn, E. (2007). *Wild Rose and Western Red Cedar*.
- Moore, M. (1993). *Medicinal Plants of the Pacific West*. Red Crane Books.
- Nestle, M. (2006). *What to Eat*. North Point Press.
- O'Connor, L et al (2015). *Prospective Associations & Population Impact of Sweet Beverage Intake*. Diabetologia.
- Pederson, M. (1998). *Nutritional Herbology*. Whitman.
- Petrucchi, K. (2015). *Dr. Kellyann's Bone Broth Diet*. Rodale Books.
- Pojar and Mackinnon. (1993). *Plants of the Pacific Northwest Coast*. Lone Pine.
- Schofield, J. (1989). *Discovering Wild Plants*. Alaska Northwest Books.
- Thayer, S. (2010). *Nature's Garden*. Forager's Harvest.
- Turner, N. (1995). *Food Plants of Coastal Northwest Peoples*. UBC Press.
- Vartanian LR, et al. (2007) *Effects of Soft Drink Consumption on Nutrition and Health: A Systematic Review and Meta-Analysis*. American Journal of Public Health.

### Web References:

- <https://authoritynutrition.com/how-much-water-should-you-drink-per-day/>. Accessed May 7th, 2017.
- <http://www.health.harvard.edu/blog/artificial-sweeteners-sugar-free-but-at-what-cost-201207165030>. Accessed May 2nd, 2017.
- <https://www.fda.gov/food/ingredientpackaginglabeling/foodadditivesingredients/ucm397725.htm>. Accessed May 4, 2017.
- <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1829363/>
- <https://www.ncbi.nlm.nih.gov/pubmed/10846639>
- <http://www.ncbi.nlm.nih.gov/pubmed/20443063>