



Juicing 101

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Important

Anyone on medication must refer to his or her prescribing physician to determine what regime is suitable. Some juices can interfere with medications (such as grapefruit). Anyone with pre-existing health conditions should refer to their primary care physician. It is usually better to start with a more gentle protocol for many people—adding a glass of fresh vegetable juice each morning—and build up to more in-depth protocols such as a full juice fast.

Juicing

Figure 1: Berries are high in antioxidants and other phytochemicals and are a valuable addition to juices. Be sure to use only organic berries, but in particular strawberries, as conventionally grown strawberries retain high levels of fungicides and pesticides.



You can use juices as a valuable addition to the everyday diet and therapeutically for specific conditions. Let's face it—most people would benefit from more vegetables and fruits in their diet! Most Americans are suffering from nutrient deficiencies while consuming too many calories. Our bodies are crying out for nutrients in the only way they know how—using hunger! And many of the things we eat (sugar, white flour, fat, and processed foods) are addictive, perpetuating the cycle.

WHY ARE JUICES VALUABLE?

- » **All life on planet earth comes from the sun.** This is not some crazy plot of an alien movie! Green plants use photosynthesis to produce the sugars that fuel our existence from sunlight. Most of us learn this in third grade, and then put it out of our minds. Eating green vegetables is one of the eco-friendliest ways to fuel our bodies—we're eating right from the bottom of the food chain!
- » **Along with the energy in plants (and those "sugars" are not the white table sugar stuff) comes a boatload of amazing phytonutrients—vitamins, minerals, antioxidants—that fuel your body and allow you to be the best you can be.** With a few exceptions, these phytonutrients are stripped away by processing. Many of us believe that the best way to get nutrients is the way nature intended: Through foods!
- » **Juices highly concentrate these phytochemicals, and strip away the fiber from the vegetables and fruit, letting the molecules absorb easily through our gastro- intestinal (GI) system.** This is what's called "bioavailability." Juicing allows us to absorb phytochemicals, antioxidants, and enzymes through the gastrointestinal tract within minutes.

Compare that to the time it takes to digest the salad eaten with a meal of proteins and carbs: The average American meal of steak potatoes and salad may take over 6 hours to be digested! During that time, the levels of antioxidants and other phytochemicals are reduced, and many simply pass out in the partially digested food.

- » **Enzymes: Juices are full of them.** Is that a good thing? Yes! Enzymes can be thought of as the "spark plug" that turns on many of the chemical reactions that make life possible! There are over 2,500 types of enzymes. Enzymes are needed for digestion, antioxidant actions, and to support the immune system. Heat (above about 100 degrees) destroys enzymes so we only get them in our raw foods—including juices. Many holistic health advocates recommend getting more than half of your foods raw for optimal health—depending on your constitution and personal wellness needs you might ramp this up to 80 or 90% raw! Does this sound untenable? By starting the day with a fresh glass of vegetable juice, you'll be well on your way to hitting not only the USDA five a day but your wellness goal of over half raw vegetables and fruit!

OK, so hopefully now you want to juice ... but how do we do it?

Equipment

To make juice, you need a juicer (sometimes called a juice extractor). It is well worth the initial investment, provided you make use of it. We keep ours on the kitchen counter to ensure regular use. The choice of juicer is also important. Most juicing advocates recommend choosing a model that grinds as well as juicing, to ensure optimal bioavailability. In addition, choose a model that's designed to limit how much heat the juice is exposed to: Heat is the enemy of enzymes!

Good juicers are expensive but are an investment in your good health—a juicer may only be 10 doctor visit co-pays!!!! Keep an eye out on eBay and craigslist for good brands or split the cost with a roommate!

We love our Jay Kordich juicer, which grinds as it juices, replicating chewing to release the most nutrients from the vegetables and fruits. We're arranged for you to get a discount on these juicers through the Apothecary Shoppe College Store.

TIPS FOR SUCCESSFUL JUICING

- » **Make juices right before you intend to drink them to avoid unnecessary loss of minerals, vitamins, and enzymes.** Yes, we know some resources tell you that you can juice in the morning and take your juice to work with you, but we don't recommend that. The whole point of juicing is fresh! If you don't have a kitchen at work to juice in (what about starting a juicing club at work!) then juice in the morning and evening instead.
- » **Always use fresh, organic fruits and vegetables.** Grow your own as much as possible! Farmers markets can be good resources for fresh produce. You may also find organic farmers in your area who are happy to find a buyer for their imperfect produce, which is perfect for juicing. Many supermarkets will special order large organic bags of juicing carrots that are much less expensive than buying small bags or bunches. Costco is also a surprising source of many organic choices, and the more you ask, the more they will stock!
- » **Because any pesticide residues in the fruit and vegetables will be concentrated, we strongly recommend avoiding conventionally grown produce.** However, if you simply cannot get organic or grow your own, check the Dirty Dozen and Clean Fifteen Lists at www.ewg.org
- » **Scrub your produce**—even organic—as bacteria such as E. coli have been found on the outside of melons and pineapples.
- » **You can make juices from single fruits and vegetables or combinations.** Most juicing advocates recommend that you do not mix fruit and vegetable juice together. Mixing them can impair digestion and assimilation, resulting in gas and only a partial assimilation of nutrients. One common exception is adding apples to vegetable juices.
- » **Try to use organic fruits and vegetables in season,** as this is when their vitamin and mineral content are highest.
- » **Drink your juice slowly and savor each mouthful of the juice.** This not only enhances your enjoyment, but also allows your saliva to begin the digestive process that usually occurs during chewing.

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- » Never heat the juice at all, as this will destroy nutrients and enzymes.

What About Fiber?

Juicing removes most of the fiber from the fruits and vegetables: You are releasing the juice from the fiber. This makes the nutrients more bioavailable and is one of the reasons that juices are such a powerhouse of nutrients. However, this also means that juices should not replace your usual fruit and vegetable intake, as your body needs 25-35 grams of fiber per day to function at its best.

What Fruits and Vegetables Can Be Juiced?

Most of them! We can't cover everything here, but the following list will indicate their potential. Remember, we're including this information for educational purposes—we're not claiming that these juices will cure diseases and we're not selling juice.

FRUITS

- » **Apple:** Contains vitamin c, beta-carotene, beta-cryptoxanthin, flavonoids including quercetin, and phytosterols. Acts as an antioxidant, general cleanser, fights infection, supports heart health, supports lung health, and stimulates digestion.
- » **Apricot:** Contains vitamin A, vitamin C, tryptophan, potassium, alpha-carotene, beta-carotene, beta-cryptoxanthin, lutein, flavonoids including quercetin, and phytosterols. Great antioxidant, supports vision, digestion, circulatory system, and skin.
- » **Cantaloupe melon:** Contains vitamin C, vitamin A, potassium, some B6, folate, B3, alpha and beta-carotene, beta-cryptoxanthin, lutein, phytosterols. (Always get organic). Good for eye health, immune health, heart health, healthy cells.
- » **Grapes:** Contain manganese, vitamin C, vitamin B1 and B6, potassium, alpha- carotene, beta-carotene, and lutein. Great for an energy boost, for heart health (particularly with low blood pressure), promote women's health, avoid anemia (red grapes and raisins), and respiratory problems.
- » **Lemon:** Contains beta-carotene, beta-cryptoxanthin, lutein, and the flavonoids hesperitin, naringenin, and quercetin. Great for general health and wellness as it is a wonderful alkalizing tonic (add the juice of a lemon to ambient temperature water first thing in the morning and last thing at night). It's often recommended for respiratory health, heart health, gout, arthritis, as a laxative, and to soothe sore throats (always dilute).
- » **Pear:** Contains vitamin C, copper, vitamin K, beta-carotene, beta-cryptoxanthin, lutein, and the flavonoids catechin, epicatechin, isorhamnetin, and quercetin, and phytosterols. Promotes heart health, promotes good digestive health as a mild laxative (for constipation), and skin eruptions.
- » **Pineapple:** Contains manganese, vitamin C, B1, copper, B6, beta-carotene, bromelain (sulfur-containing enzyme that helps digest proteins and is also anti-inflammatory). Is anti-

inflammatory, antioxidant, and promotes energy.

- » **Watermelon:** Contains vitamin C, vitamin A, B6, B1, potassium, magnesium, beta-carotene, beta-cryptoxanthin, lutein, lycopene, and phytosterols. Great for heart health, healthy weight control, and antioxidant protection.

VEGETABLES

- » **Beets:** Contains folate, manganese, potassium, vitamin C, magnesium, tryptophan, iron, copper, phosphorus, and beta-carotene. Dissolves calcium deposits, kidney problems, helps digestion (constipation), and nerves. Can be strong detox effect so add small amounts to start. It has high concentrations of oxalates, which may interact with some medications. Greens are particularly good for heart health and health in general. Greens have been shown to be chemo-protective.
- » **Cabbage:** Contains vitamins K, C, B6, B1, B2, A, manganese, folate, omega-3s, calcium, potassium, tryptophan, magnesium, alpha and beta-carotene, and lutein. Great for weight management, antiseptic, duodenal ulcers, and constipation. Cabbage, along with other brassica family members (such as broccoli and Brussels sprouts), contains anticancer compounds.
- » **Carrots:** Contains vitamins A, K, C, B6, B1, B3, potassium, manganese, molybdenum, phosphorus, magnesium, folate, alpha and beta-carotene, beta-cryptoxanthin, lutein, lycopene, and the flavonoid quercetin. Carrots promote heart health, lung health, and are said to fight infection in the respiratory tract. The carotenoids particularly support eye health. Carrot is the core of many juice blends!
- » **Cucumber:** Contains vitamin C, molybdenum, vitamin A, potassium, manganese, folate, tryptophan, magnesium, and beta-carotene. Great for healthy skin, weight control, heart health, healthy digestions (diarrhea), heart health (diuretic action helpful when blood pressure at issue), split nails, and hair loss.
- » **Celery:** Contains vitamins K, A and C, potassium, folate, molybdenum, manganese, B6, calcium, B1, magnesium, tryptophan, phosphorus, B2, iron, beta-carotene, lutein, flavonoids including quercetin, and phytosterols. Great antioxidant and diuretic, supports heart health, and coumarins support immune health.
- » **Greens:** Kale, broccoli, bok choy, spinach, endive, parsley, and dandelion greens. Powerhouses of antioxidants and phytosterols!



COMBINATIONS

When you start juicing, begin with 70% carrot and add additional vegetables. Note that there is no need to be super precise with the measurements—it's OK to eyeball it! A stalk of that, a handful of this ... your blends will never be the same from day to day!

Start with carrots and alternate with the other ingredients—you can use the carrots to push through the other items.

Try the following combinations:

- » Six carrots and two apples: The classic antioxidant blend—also Dr Gerson’s “Anti-cancer” drink
- » Four apples with one half of a beet and beet greens: Liver cleanser
- » Eight carrots, handful of parsley, handful of spinach, three stalks of celery, one apple: Digestive tonic
- » Four stalks celery, one cucumber, one apple: Diuretic
- » Eight carrots and a handful of spinach: Digestive tonic (IBS)
- » Six carrots, handful of spinach, one apple, one beet
- » Three beets, one apple, and a handful kale: So called vampire juice by Erika’s daughter! This is a great way to test gastrointestinal transit times! Your poop will turn red—don’t panic!
- » Six carrots, handful of kale, and inch piece of ginger, and one apple: Fall pick-me-up
- » Six carrots, three stalks of celery, a quarter of a cabbage (red or green): Stomach tonic (ulcers)



FRUIT COMBINATIONS

- » Melon (only organic), pineapple, apple
- » Nashi (Asian pear), apple, carrot
- » Half a pineapple and three apples: Arthritis and joint health
- » Five apples and two pears: Laxative and digestive health
- » Watermelon (with skin—only use organic): Kidney tonic

Juicing vs Smoothies

First, both are healthier than soda, processed foods, and junk foods. You can't go wrong eating vegetables and fruits whether you juice them or stick them in a blender!

There are strong advocates for juice and strong advocates for smoothies; advocates of smoothies say they want the fiber that a juicer leaves behind. Proponents include such folks as author of *Green for Life* Victoria Boutenko. However, juicing advocates say smoothies are blended foods, that making a smoothie doesn't simulate the chewing process, and that this is not a healthy way to eat. Dr. Brian Clement, Co-Director of Hippocrates Health Institute, thinks that green smoothies are very unhealthy. He is a follower of Ann Wigmore, the "wheatgrass lady," whom Dorene Petersen also trained with.

A quality juicer acts like teeth in your mouth—grinding the vegetables and fruits under pressure so that it emulates the chewing process.

Try both and see for yourself what works for your system. Keep a daily journal of what you eat and how you feel so you can track energy levels, weight, mental clarity, and more.

Juice Fasting

So you have started juicing and now want to go further? Juice fasting is a type of elimination regime or protocol designed to assist the body to cleanse and heal. By eliminating certain foods (or in the case of fasting—all solid foods), the enormous amount of energy required to digest food can be released and put to the task of spring-cleaning the body. The liver and whole digestive system are given a well-earned rest. After all, we spring clean our homes, but how often do we spring clean our body?

There is a spectrum of elimination protocols, from eliminating one or more food groups, to completely abstaining from food, also called fasting. Fasting is a more extensive protocol and is studied in more depth in more advanced courses at ACHS along with other elimination regimes. For now, it is sufficient to be aware of the parameters of a fast.

Fasting begins as soon as you stop eating. There are many types of fasts and the duration will depend on a person's work commitments as well as physical and mental state.

Anyone on medication must refer to his or her prescribing physician to determine what regime is suitable. It is better to start with a more gentle protocol for many people and build up to more in-depth protocols.

As you will learn in more advanced courses at ACHS, constitution is very important when considering what elimination protocol is appropriate. Your constitution is your overall health. Someone who seldom gets sick, who can “burn the candle at both ends,” who can soldier on for days with little rest, is said to have a “strong” or even an “iron” constitution. Someone who gets sick easily, who needs lots of sleep to stay well, and who needs to almost “pamper” themselves to be at their best, has a less robust constitution. You will sometimes see this written as a “weak” constitution. However, this implies that it is somehow lesser than the strong constitution, which we want to avoid. We are all different. It is important to be aware of and respect our differences so that we can all be the best we can be.

We would not recommend fasting to someone who is very sickly or who has a less robust constitution. For someone who needs a gentler approach, an elimination diet places less stress on the client and is more likely to be followed than a strict juice fast. After all a protocol is only effective if someone can follow it!

Basic Guidelines for Fasting

BEFORE A FAST

- » Consult your primary care physician before undertaking a fast if you are on medication or have a health condition.
- » Do not fast if you are pregnant or nursing.
- » Plan to start your fast at a time when you can rest as needed. But, don't let a busy work or family life (or both!) put you off doing anything—start by adding a glass of fresh juice to your morning regime instead!
- » During a fast you cannot smoke, or drink alcohol, black tea, or coffee. You may want to cut down consumption of these items gradually in the weeks before the fast.
- » Clean out your kitchen of any tempting foods that could cause you to stray from your fast. Donate to your food bank if you need to.
- » Two days before a fast eat only light foods, mainly vegetables and some fruit.

DURING THE FAST

- » Allow yourself to rest when you feel like it during the fast. You may experience some discomfort, headaches, dizziness, and nausea as toxins are eliminated, but it should not be extreme. Remember that your ability to fast comfortably is affected by your constitution. Before embarking on a full juice fast, try eating just fruits and veggies for a few days and see how you feel. Then try a one- or two-day juice fast and see how you feel. In other words, build up slowly.
- » Avoid stress and concentrate on a positive thoughts. Easy exercises like gentle yoga, walking, reading, stretching are all good.
- » Use freshly extracted vegetable and fruit juices, purified water, and herb teas. Use mostly vegetables. Do not mix fruit and vegetable juices. Never use canned or bottled juice. Fasting on just water can place an unnecessary strain on the body and is not recommended.
- » It is important to have a bowel movement at least once a day while your body cleanses; the toxins must be excreted through your skin, bowels, and urine. Use senna *Senna alexandrina* leaf tea, flaxseed *Linum usitatissimum* tea, or enemas if necessary to loosen bowel movement.
- » Use dry skin brush to encourage elimination via the skin. If at all possible, use steam rooms and saunas to aid elimination.
- » Discontinue dietary supplements. (Again, refer back to the prescribing physician if you are taking any prescription medications.)
- » No smoking, or drinking alcohol, black tea, or coffee. Again: You may want to cut down consumption of these items gradually in the weeks before the fast.

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- » Do not use any sweeteners.
 - » Drink AT LEAST eight glasses of purified water a day. Add a squeeze of organic lemon juice to alkalize and freshen the breath. During a fast your breath may get smelly!
 - » Exercise regularly; walking or yoga are ideal. Completing a marathon while fasting is usually not recommended, though everyone is different. Some people experience a surge of energy while fasting or following an elimination regime. It's not a competition—do what feels right to you. If that's walking, then walk!
 - » Resume eating gradually after fasting. Start with a piece of fruit or lightly steamed vegetables. Take two to three days, depending on the duration of the fast, to resume normal food intake. Never overeat after a fast. This could place a dangerous overload on the whole body.

The benefits of fasting are said to be far-reaching. Advocates of fasting list a range of benefits, including: Elimination of toxins, tissue regeneration, and slowing down aging¹.

¹We look at research on the effects of fasting in Nat 308.

Please Note: Disclaimer

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There are many excellent books about juice therapy. Favorites are:

- » Kordich, J. (2005). *Live Foods Live Bodies*. Kordich Group International.
- » Clinkard, CE. (2008). *The Uses of Juices*. New York: Penguin Global.
- » Lust, J. (1982). *Raw Juice Therapy*. Paso Robles: Benedict Lust Publications.
- » <http://www.vivo.colostate.edu/hbooks/pathphys/digestion/basics/transit.html>

We look at juicing in more detail in Nat 308 along with smoothies. For those of you who want to extend your learning in this module, we recommend the documentary *Fat, Sick and Nearly Dead*, available on Netflix.com.

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