
Building a Better Smoothie

Smoothies can be a convenient, nutrient-dense, and delicious part of your diet. This guide shows you how to build a balanced smoothie and provides ideas for each ingredient category.

Key

- c = cup
- g = grams
- oz = ounce
- T = tablespoon
- tsp = teaspoon

Healthy Smoothie Ingredients

- ¼ c ice cubes (optional)
- 1-2 T healthy fats, such as nuts, seeds, nut and seed butters, and avocado
- 1 scoop protein powder (approximately 30 g)
- 1-2 c vegetables
- ½ to 1 c fruit
- 4-6 oz base liquid (approximately ½ to ¾ c)
- Additional water if the smoothie is too thick, as needed



What About Juice?

Fruit juice lacks the fiber found in whole fruit, which means it can raise your blood sugar levels more easily.⁶ Juice production can decrease antioxidant levels, making some fruit juices lower in antioxidants than whole fruit.⁷⁻⁹ Eating whole fruits is more filling than drinking juice, helping you regulate your calorie intake.⁶ Choose whole fruit instead of fruit juice in your smoothie most of the time.

Based on your health goals, certain fruit juices may be fine to include in your smoothie occasionally, such as:

- **Tart cherry juice:** Is associated with exercise recovery, possibly by regulating inflammation.¹⁰
- **Beetroot juice:** Is associated with a modest decrease in blood pressure in people with high blood pressure.¹¹
- **Pomegranate juice:** Is associated with reduced inflammation¹² and increased HDL cholesterol and lower triglycerides in women with polycystic metabolic ovarian syndrome (PMOS).¹³

Base Liquid

Use 4-6 oz of water, brewed tea, dairy milk, or non-dairy milk as the base liquid.

Tea

Tea is sold as tea bags or dried bulk herbs. You can also use fresh herbs, if available. When purchasing tea, ask manufacturers what contaminants they screen for and choose unbleached, biodegradable tea bags. Research links plastic teabags to microplastic release into tea.^{1,2}

Here are general guidelines for how much tea to use per 8 ounces of water:

- Tea bags: 1 tea bag
- Bulk (dried) tea: 1 tsp
- Fresh herbs: 1 T

To brew tea, pour boiled water over the herbs, cover, and steep for 5-10 minutes. Remove the tea bags or strain out the herbs. Let the tea cool for 20 minutes, then add 4-6 ounces to the blender for one smoothie. Refrigerate any extra prepared tea.

Types of tea to try:

- Cinnamon
- Dandelion
- Elderberry
- Ginger
- Green
- Lemon balm
- Milk thistle
- Peppermint
- Rosemary
- Other herbal tea

If you are taking medication, have a health condition, or are pregnant or breastfeeding, talk with your healthcare provider before using tea in your smoothie.

Dairy Milk

Unsweetened, organic milk is preferred. You can also use kefir, a probiotic-rich fermented milk drink.

Non-Dairy Milk

You may use non-dairy milk, such as organic soy, almond, or coconut milk, as the liquid base for your smoothie. Non-dairy yogurt or kefir are also an option. If you use either of these ingredients, add extra water to give your smoothie a drinkable consistency.

Choose non-dairy milk without emulsifiers, an ingredient used in ultra-processed foods (UPFs) to prevent the separation of water and fat ingredients. Emulsifiers are associated with negative effects on gut health.³⁻⁵ Examples of emulsifiers include carrageenan, cellulose gum, gellan gum, guar gum, and xanthan gum.

If you include fruit juice in your smoothie, use a small amount (½ cup or less) and avoid juice with added sugars and preservatives.

Healthy Fats

Healthy fats like nuts, seeds, and avocado make your smoothie filling. Nut and seed butters blend better in smoothies than whole nuts and seeds.

Nuts, seeds, and nut/seed butters to add to your smoothie include:

- Almond butter
- Avocado
- Cashew butter
- Chia seeds
- Flaxseed (ground)
- Hempseeds
- Peanut butter
- Sunflower seed butter
- Tahini (ground sesame seeds)

Protein

Including protein in your smoothie may help balance your blood sugar and make your smoothie filling.

Protein powder is a common way to incorporate protein into a smoothie. Protein powders are made from refined proteins, like egg white or pea protein. While they are ultra-processed foods, some protein powders are linked to potential health benefits. For example, whey protein powder is linked to increased muscle strength when combined with resistance training.¹⁴ Beef protein powder is also linked to improved body composition.¹⁵ The healthiness of a protein powder comes down to how it is sourced and the other ingredients it contains.

When possible, choose protein powder made with organic ingredients. Avoid protein powders with added sugars and artificial sweeteners. Some protein powders may contain heavy metals.¹⁶ A nutrition professional can help you source a high-quality protein powder.

You can also use a whole-food source of protein in your smoothie, such as Greek yogurt or silken tofu.

Vegetables

Vegetables fill your smoothie with fiber, vitamins, minerals, and phytonutrients, plant components that provide health benefits when we consume them. Add 1-2 cups of leafy greens or other fresh or frozen vegetables to the blender. Here are some vegetables that work well in smoothies:

Non-starchy vegetables:

- Beets (boil and chill before adding to your smoothie)
- Bell peppers
- Carrots
- Cauliflower
- Cucumber
- Leafy greens: arugula, Swiss chard, collard greens, dandelion greens, kale, microgreens, spinach

Colorful Smoothies

Pairing similarly colored vegetables and fruits makes a vibrant, colorful smoothie. Examples of colorful fruit and vegetable combinations include:

- **Red:** Beet + cherries + splash of unsweetened pomegranate juice
- **Orange:** carrot + cantaloupe + orange
- **Yellow:** banana + gold kiwi
- **Green:** avocado + spinach + kiwi
- **Blue/purple:** blackberries + blueberries

Starchy vegetables (cook and chill before adding to your smoothie):

- Higher-carb squash: acorn, buttercup, butternut, carnival, hubbard
- Pumpkin
- Sweet potato

Fruit

Fruits add vitamins, minerals, phytonutrients, and a touch of sweetness to your smoothie. Add ½ to 1 cup of fresh or frozen, unsweetened fruit to your smoothie. A nutrition professional can help you determine how much and which types of fruits to include.

- Apple
- Banana
- Blackberries
- Blueberries
- Cherries
- Kiwifruit
- Mango
- Melon
- Orange
- Peach
- Raspberries
- Strawberries

Organic Ingredients

When possible, choose organic ingredients for your smoothie. It is more important to prioritize buying some ingredients organically than others. For example, in the United States, some fruits and vegetables are more heavily sprayed with pesticides than others. The Environmental Working Group (EWG) releases a report each year¹⁷ that shows the most contaminated fruits and vegetables – these are the ones to prioritize buying organic, if possible.

Smoothie Recipes

Brain Health Smoothie

Makes 1 serving (about 12 fluid ounces)

Ingredients

- ½ c blueberries^{18,19}
- ½ frozen banana
- ¼ avocado^{20,21}
- 2 small handfuls of baby spinach²²
- 1 T cacao powder^{23,24}
- 1 scoop protein powder
- Optional: 2 tsp MCT oil^{25,26}
- 1 c unsweetened nut milk, such as almond or coconut milk^{27,28}

Directions:

Place all ingredients into a blender. Pulse the blender a few times, then blend until the desired consistency is reached.

Cardio Smoothie

Makes 1 serving (about 12 fluid ounces)

Ingredients

- ¼ c frozen strawberries²⁹
- ¼ frozen banana
- ¼ peeled, boiled, and chilled beet¹¹
- 1 small handful of baby spinach³⁰
- 1 T chia seeds³¹
- 1 T nut butter, such as almond butter³²
- 1.5 oz silken tofu³³
- ¼ c chilled green tea³⁴
- 1 tsp lemon juice
- Pinch of finely ground sea salt
- ¼ c cold filtered water
- ½ c unsweetened nut milk or soy milk

Directions

1. Soak the chia seeds in the green tea for five minutes. This step will help them blend into the smoothie.
2. Once the chia seeds are hydrated, place all the ingredients into a blender. Pulse the blender a few times, then blend until the desired consistency is reached.

Notes:

- We recommend drinking this smoothie right after making it, before the chia seeds fully gelatinize.
- If you don't want to use silken tofu as your protein source, you may use ½ c of plain Greek yogurt.
- While the tsp of lemon juice and pinch of sea salt may seem minor, they are important for reducing the earthy flavor of the beet.

Smoothie Recipes (continued)

Green Smoothie

Makes 1 serving (about 12 fluid ounces)

Ingredients

- ¼ frozen banana
- 1 handful of baby spinach
- 3-4 slices peeled cucumber
- ½ ripe kiwi (peeled)
- ¼ avocado
- 1 scoop protein powder
- ¾ c unsweetened nut milk

Directions

1. Place all the ingredients into a blender. Pulse the blender a few times, then blend until the desired consistency is reached.
2. Drink immediately after blending. Letting this smoothie sit may create a bitter taste.

Post-Physical Activity Recovery Smoothie

Makes 14 fluid ounces

Ingredients

- ¼ c tart cherry juice¹⁰
- ½ c frozen mixed berries³⁵⁻³⁷
- 1 scoop collagen powder³⁸ or whey protein powder³⁸
- 1 T chia seeds
- 1 T nut butter, such as almond butter^{39,40}
- 1 small handful of baby spinach⁴¹⁻⁴³
- ½ med banana^{44,45}
- ½ c filtered water or coconut water

Directions

1. Soak the chia seeds in tart cherry juice for five minutes. This step will help them blend more evenly into the smoothie.
2. Once the chia seeds are hydrated, place all the ingredients into a blender. Pulse the blender a few times, then blend until the desired consistency is reached.

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