

nutrition

(*Making sense of all that science*) **made easy**

Build a Healthier Gut

Trillions of reasons to add new gut-healthy foods to your diet

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Giving yourself a gut check may be one of the best things you can do for your overall health. Your bacterial community (aka the microbiome) is home to trillions of bacteria that thrive on the foods we eat, and may play a role not just in digestive health but in mental health, too. It might even be possible to alter this “second genome,” which has been proven to respond to the foods we eat. A 2013 Harvard-led study found that diet can alter the population of human gut bacteria within a day.

What does all this mean for you? Healthy food stimulates healthy bacteria. The reverse is also true. Diets low in fiber and high in sugar and meat have less bacterial diversity and contain more of the “bad” bacteria associated with obesity. But a diverse diet rich in vegetables, fruits, and good-for-you bacteria will help seal your gut lining and prevent bad bacteria from entering the blood, which causes bloating and gas. How do we get more of these good bacteria into our diet? It’s easier—and tastier—than you might think. Read on for the hows, whys, and ways to start building a healthier gut.

Use probiotic-packed kefir in place of milk in your overnight oats. Recipe page 64.



GUT-HEALTHY
FOODS

8 Things to Eat for a Healthier Gut

Glossary

Probiotics

Meaning “for life,” these live, good-for-you bacteria are found both in your body and in some of the foods we’ll be discussing. They improve digestion, enhance immune health, and improve mental outlook.

Prebiotics

Food for probiotics. Prebiotics contain a fiber that escapes digestion in the upper GI tract (where most carbs break down), enabling them to travel into the colon and feed all the probiotics.

Gut Microbiome

The community of microorganisms living in the GI tract—weighing up to 4.5 pounds. Research suggests that the relationship between gut microbiota and humans is mutualistic.

Fermentation

The process of breaking down natural sugars to form lactic acid—a preservative that inhibits bad bacteria and has a very sour, pungent flavor. Think of it like a form of predigestion, making hard-to-digest nutrients more bioavailable.

Antibiotics

Medication used to treat and prevent infections caused by “bad” bacteria. Antibiotics are not selective when it comes to killing bacteria. They aim to kill them all—good and bad.

1 KEFIR

Liquid yogurt that’s naturally effervescent and extra tangy. It’s cultured five to eight times longer than yogurt, giving good bacteria more time to multiply. It contains as many as 12 strains (versus about two in yogurt). It’s great for smoothies and overnight oats (see recipe below). Another reason we love it: It has 11g protein per cup, and you can use it as a 1-to-1 substitution for buttermilk. Buy the plain variety to avoid added sugars.

OVERNIGHT OATS WITH KEFIR, BERRIES, AND TOASTED COCONUT

Hands-on: 10 min.

Total: 12 hr. 10 min.

The active cultures in kefir are sensitive to heat; resist the urge to microwave the oats, keeping it chilled for maximum benefits.

- 1 1/3 cups plain low-fat kefir (such as Lifeway)
- 2/3 cup old-fashioned rolled oats
- 2 teaspoons honey
- 1/4 teaspoon ground cinnamon
- 1/2 cup sliced strawberries
- 1/2 cup blueberries
- 2 tablespoons unsweetened coconut flakes, toasted

1. Combine first 4 ingredients in a bowl. Cover and refrigerate overnight; stir. Divide oat mixture between 2 bowls. Top servings evenly with berries and coconut.

➤ **SERVES 2** (serving size: 1 bowl)
CALORIES 263; **FAT** 6.8g (sat 4.2g, mono 0.8g, poly 0.8g); **PROTEIN** 12g; **CARB** 42g; **FIBER** 5g; **SUGAR** 21g (est. added sugar 6g); **CHOL** 7mg; **IRON** 2mg; **SODIUM** 86mg; **CALC** 214mg



2 KIMCHI

We love the crunchy, near-tingly texture and umami-rich flavor of kimchi, a spicy Korean vegetable side dish that’s created by mixing cabbage and other veggies with garlic, ginger, chili peppers, and fish sauce. The mixture is then set aside to ferment, a process that adds a belly-full of health benefits (see sidebar at left) to its profile. Kimchi’s spice and puckery tartness make it difficult for some people to eat by itself, so we’ve blended it with yogurt in this recipe for a tart-tangy combination that does wonders for roasted veggies, eggs, and wilted greens. Bonus: yogurt + kimchi = double the good bugs.

KIMCHI YOGURT DRESSING

Hands-on: 10 min.

Total: 10 min.

This flavor combo is surprisingly similar to pimento cheese.

- 2/3 cup plain 2% reduced-fat Greek yogurt
- 1/2 cup kimchi, drained (such as Simply Seoul)

1. Combine ingredients in a food processor. Process until smooth.

➤ **SERVES 6** (serving size: 2 tablespoons)
CALORIES 22; **FAT** 0.5g (sat 0.3g, mono 0g, poly 0g); **PROTEIN** 2g; **CARB** 2g; **FIBER** 0g; **SUGAR** 1g (est. added sugar 0g); **CHOL** 2mg; **IRON** 0mg; **SODIUM** 121mg; **CALC** 17mg

3 YOGURT

This popular source of probiotics needs little introduction. The active cultures in yogurt not only help with digestion (one reason lactose-intolerant people are able to eat yogurt) but also help us better absorb nutrients from our food. The FDA requires at least two strains of bacteria in all yogurt

(*L. bulgaricus* and *S. thermophilus*), though manufacturers can add more. Check the ingredients list, which often includes the different bacterial strains. Other reasons we love yogurt: It’s packed with protein (14g in 6 ounces of Greek), easy to find, and offers up 30% of your daily needs for calcium, which is more readily absorbed by your body thanks to the probiotics.

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6 TEMPEH

Fermented soybeans packed into cakes, this tofu counterpart is not only an anti-inflammatory but also a great source of plant-based protein, with 16g in just 3 ounces. The whole bean is used (making it less processed than tofu), and it has a nutty, slightly sour, savory flavor. Fermentation reduces the

amount of phytic acid, a substance found in soy that prevents your body from absorbing good-for-you nutrients. Another reason we love tempeh: It makes a delicious plant-based riff on a Reuben (see recipe page 72) and packs 9g fiber (a third of your daily needs) into just 3 ounces.

7 DANDELION GREENS

Pleasantly peppery with a bitter edge, these greens are a top source of prebiotics, a specific carbohydrate that feeds probiotics. Prebiotics are high in an indigestible fiber called inulin, which enhances the gut's production of friendly bacteria. Food sources include whole wheat, leeks, cabbage, artichokes, and breast milk. Dandelion greens make a lovely addition to stir-fries, soups, and pestos (recipe below). Rich olive oil, salty cheese, and buttery pine nuts offset the sharpness of the greens.

- 1 garlic clove, crushed
- 1 tablespoon fresh lemon juice
- 1/2 teaspoon kosher salt
- 3 tablespoons olive oil

1. Place first 5 ingredients in a food processor. Process until finely chopped. Add juice and salt; pulse 5 times. With processor on, slowly pour oil through food chute; process until well blended.

➤ **SERVES 8** (serving size: about 2 tablespoons)
CALORIES 104; **FAT** 9g (sat 1.8g, mono 4.7g, poly 1.8g); **PROTEIN** 3g; **CARB** 4g; **FIBER** 1g; **SUGAR** 0g; **CHOL** 5mg; **IRON** 1mg; **SODIUM** 223mg; **CALC** 121mg

DANDELION GREENS PESTO

Hands-on: 15 min.

Total: 15 min.

Drizzle this edgy, bitter pesto over summer tomatoes, whole grains, or scrambled eggs. For a milder version, use more basil or spinach.

- 4 cups dandelion greens, coarse stems removed (about 4 ounces)
- 1 cup loosely packed fresh basil leaves
- 3 tablespoons pine nuts, toasted
- 1.5 ounces Parmesan cheese, grated



MISO CITRUS VINAIGRETTE

Hands-on: 10 min.

Total: 10 min.

We love the sweet, savory, citrus-packed punch this bright dressing adds to fresh greens, grains, or seafood.

- 2 tablespoons fresh orange juice
- 1 tablespoon white miso
- 1 tablespoon rice vinegar
- 1 tablespoon water
- 1/2 teaspoon grated peeled fresh ginger
- 3 tablespoons canola oil

1. Combine first 5 ingredients in a small bowl, stirring well with a whisk. Slowly drizzle oil into miso mixture, stirring constantly with a whisk until well blended.

➤ **SERVES 8** (serving size: about 1 tablespoon)
CALORIES 52; **FAT** 5.3g (sat 0.4g, mono 3.3g, poly 1.5g); **PROTEIN** 0g; **CARB** 1g; **FIBER** 0g; **SUGAR** 1g (est added sugar 0g); **CHOL** 0mg; **IRON** 0mg; **SODIUM** 68mg; **CALC** 0mg

vitamin availability, and gives sauerkraut that pleasantly sour edge. Choose refrigerated varieties instead of canned; the latter have been pasteurized, which kills all the probiotics. Another reason we love kraut: It's a delicious, lower-in-sodium sub for pickles. Use fresh sauerkraut in place of pickles and you'll cut sodium in half.

5 SAUERKRAUT

In its most basic form, sauerkraut is just cabbage and salt. Millions of good-for-you bacteria (the same found in yogurt) live on the surface of cabbage. When sealed airtight, they convert the natural plant sugars to lactic acid, which aids in digestion, increases



8 KOMBUCHA TEA

Drink up! This fermented beverage is made by adding a culture of probiotic-rich bacteria and yeast (called a SCOBY) to lightly sweetened tea. It's fizzy and pleasantly puckery, like a sweet carbonated vinegar with a subtle yeastiness similar to beer. Often made with fruits and herbs, it's like a probiotic-packed soda—cold, bubbly, and sweet—but with 45 fewer grams (about 11 teaspoons) of sugar. We like it extra fizzy (look for GT's brand), with less than 5g sugar per serving.



4 MISO

This savory, nutty paste is made from fermented soybeans; it's loaded with umami and rich in probiotics. The concentrated salt content (about 400mg to 600mg per tablespoon) helps protect these good bacteria from contamination, and there's a balanced sweetness that makes the flavor much milder than most super-sour fermented products. The longer it ferments, the darker in color (often red) and the saltier and richer in flavor it gets. Another reason we love miso: It's versatile—a lovely addition to soups, marinades, grains, and dressings, like this Miso Citrus Vinaigrette.

The Gut Makeover

EVEN THE HEALTHIEST eaters have to take a round of antibiotics on occasion. The bad news is that in doing their job, antibiotics wipe the gut clear of *all* bacteria, not just the bad stuff. The good news is that there's no better way to replenish that store of healthy bacteria than with food. Sure, you can eat a few tubs of plain yogurt or kimchi, but how about diving into something a little more fun and filling? Enter the Tempeh Reuben (recipe on next page),

which stacks a variety of probiotic foods between two slices of prebiotic-packed bread. Braised tempeh stands in for salty corned beef and is piled high with fresh sauerkraut, Swiss cheese, and a zesty yogurt-based Russian-style dressing to keep the sandwich properly messy. Our Reuben not only enhances the production of gut-friendly bacteria but also saves 518 calories, 21g sat fat, and 1,513mg sodium per sandwich over the classic corned beef version.

WHOLE-GRAIN RYE

Not all rye bread is created equal. Make sure to use whole-grain, a source of prebiotics that'll feed your inner probiotics.

TEMPEH

Braised and glazed in a dill-infused soy mixture, this fermented soybean cake subs for corned beef (a salt-soaked brisket) to boost good bacteria and trim 106 calories, 6g sat fat, and 1,146mg sodium per sandwich. Bonus: It packs in 5g fiber per serving.

For the crispiest crust, sear under a heavy pan in an oil-spritzed skillet.

FRESH SAUERKRAUT

Canned kraut has been pasteurized, which kills the billions of good bacteria found in just a few ounces. We use fresh kraut, keep it cold, and use it twice: in the dressing and piled high between the bread.

YOGURT DRESSING

Our take on Russian dressing swaps heavy mayo for probiotic-packed yogurt and adds zing with extra sauerkraut (skip the pickles) to save 141 calories, 16g fat, and 87mg sodium per sandwich.



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TEMPEH REUBENS

Hands-on: 20 min.

Total: 40 min.

STAFF FAVE Braising may destroy some of the good bacteria on the surface of the tempeh. But as long as the internal temp doesn't get too high, most of the probiotics will survive.

- 1/3 cup 2% reduced-fat Greek yogurt
- 1 1/2 tablespoons ketchup
- 3/4 cup plus 2 tablespoons refrigerated sauerkraut (such as Bubbies), drained and divided
- 1 teaspoon Dijon mustard
- 8 ounces tempeh
- 1 tablespoon olive oil
- 1 cup chopped onion
- 2 garlic cloves, thinly sliced
- 1 tablespoon cider vinegar

- 1 tablespoon lower-sodium soy sauce
- 1/2 teaspoon dried dill
- 1/2 teaspoon caraway seeds
- 1 1/4 cups water
- 8 (1-ounce) slices whole-grain rye bread, toasted
- 2 ounces Swiss cheese, shredded (about 1/2 cup)

1. Place Greek yogurt, ketchup, 2 tablespoons sauerkraut, and mustard in a mini food processor; process until smooth.
2. Cut tempeh in half horizontally; cut each half into 4 slices, forming 8 pieces. Heat a large skillet over medium heat. Add oil to pan; swirl to coat. Add onion; cook 5 minutes or until tender. Add garlic; cook 1 minute, stirring constantly. Add vinegar, soy sauce, dill, and caraway, stirring constantly. Add tempeh; cook 1 minute on each side. Add 1 1/4 cups water; bring to a boil. Reduce heat; simmer, uncovered, 10 minutes or until water evaporates,

turning tempeh occasionally.

3. Preheat broiler to high. Place 4 bread slices in a single layer on a heavy baking sheet. Divide cheese evenly among bread slices. Broil 1 minute or until cheese melts. Top cheese with about 1 tablespoon yogurt mixture, 1 1/2 tablespoons onion mixture, 2 pieces tempeh, and about 3 tablespoons sauerkraut. Spread remaining yogurt mixture evenly over 1 side of remaining 4 bread slices. Place bread, yogurt side down, on top of sauerkraut.

👉 SERVES 4 (serving size: 1 sandwich)

CALORIES 382; **FAT** 16.6g (sat 4.5g, mono 5.2g, poly 2.7g); **PROTEIN** 22g; **CARB** 41g; **FIBER** 10g; **SUGAR** 6g (est. added sugar 2g); **CHOL** 14mg; **IRON** 4mg; **SODIUM** 740mg; **CALC** 285mg

OUR TEMPEH REUBEN SAVES

518 calories, 21g sat fat, and 1,513mg sodium over traditional corned beef Reubens.

WHAT'S NEXT IN RESEARCH

OBESITY A number of studies have shown that transplanting gut bacteria from obese mice into thinner mice causes weight gain, and that the reverse is also true. Now, researchers at Massachusetts General Hospital are about to perform the same test on humans, with a clinical trial that will study the effects of gut microbes from lean, healthy individuals on people with obesity and insulin sensitivity.

MENTAL HEALTH

Emerging research is discovering that there is communication between the gut and the brain—known as the gut-brain axis, a whole set of neurotransmitters that reduce depression, anxiety, and stress.

TREATING DISEASE

Not all probiotics are created equal. There are millions of strains, and people respond differently to each one. Each one of us has a unique microbiome, and certain probiotics will affect different people in different ways. Science agrees that these beneficial bacteria have a positive effect on our overall health, but their ability to treat specific diseases is still unknown.

70%

The approximate percentage of your immune system that is located in your gut. When your gut is healthy, it helps your entire body stay healthy.

Gut Busters

Heat

For optimal benefits, keep fermented foods chilled and below 115°; high heat destroys good bacteria. Many fermented items are pasteurized, which kills live cultures. (Freezing, however, is fine.)

Artificial Sweeteners

Early studies are finding that these noncaloric sweeteners may disrupt the microbiome and boost the growth of certain bacteria that trigger fat storage.

Refined Sugar

High-sugar diets may impair cognitive ability by altering gut bacteria (some scientists refer to Alzheimer's as type 3 diabetes). Sugar also stimulates *Candida*, a yeast that eats away at your gut lining.

Processed Foods

A diet high in processed foods promotes a less diverse gut, which limits the amounts of good-for-you bacteria and may eventually lead to diabetes and obesity. Eat more whole foods.