

The 9 Very Worst Foods and Drinks for Your Immune System



They say not all heroes wear capes—and no place is that more true than when it comes to your [immune system](#). This unassuming defender acts in the background of your body, taking care of potential issues before they get out of hand and often going unnoticed until something goes dramatically wrong, but it plays such a key role in keeping you well.

You probably already know that keeping your immune system healthy is crucial for warding off health challenges before they start, and keeping little issues from becoming big problems—and you may even know just how closely connected it is to your gut health, but you might not realize just how much of an impact certain foods and drinks can have on it. With the [modern Western lifestyle](#) presenting a multitude of challenges for your immune system (including [stress](#), [antibacterial cleansers](#), and exposure to [antibiotics](#) in food or medication), when you add on immune-unfriendly foods, you've got a recipe for feeling under the weather.

While you can't eliminate these challenges entirely, you do have the power to make positive choices that will help keep your immune system in excellent shape—and your [diet](#) is one of the best places to start. To help you make the best immune-boosting choices, we've researched the very worst foods and drinks for your immune system, along with some alternatives and immune *boosting* foods that'll help keep you feeling ready to take on the world.

1. Fast food

We all know that eating fast food isn't the best for your body—but surely a burger here and there can't be all that bad for your immune system, can it? Research disagrees. Regularly eating fast

food can actually reprogram the way your immune system reacts to potential issues, putting it in a prolonged state of “high alert”.¹

In one study, mice who ate a diet that was high in [sugar](#) and low in [fiber](#) had some striking physical responses: after a month, their bodies were acting like they were fighting off microbial invaders, and their systems didn’t get back to normal when they switched to a healthier diet. While the acute immune response died down, their immune systems more generally stayed in that “ready to react” stage. Constantly being on alert for every little thing is really rough on your immune system, and correlates with unwanted changes in health. Long story short? That burger and fries could really come back to bite you.

Try this instead: It’s so easy to make healthy alternatives to typical fast foods at home—and they tend to taste much better! Try substituting high quality, organic beef burgers and baked sweet potato fries for your normal fast food fare. And to avoid the temptation to pick up something quick while you’re [out and about](#), keep some healthy snacks in your car. Things like kale chips, smoothies, nuts, and healthy bars all travel well and can help stave off the munchies until you get home.

2. Foods with MSG

MSG is a flavor shortcut that gives food a delicious umami taste, but it has some pretty harsh effects on your immune system. Studies indicate that eating foods containing MSG can cause unwanted changes to your thymus and spleen, both of which are key players in your immune function. (Both your thymus and your spleen create lymphocytes, which take out foreign invaders; your spleen also makes antibodies that help keep you well.)²

MSG causes significant oxidative stress to both the thymus and spleen, disrupting their ability to function by both causing them to produce fewer lymphocytes and making it more likely that those they do produce might not be able to work right (meaning that you’re more likely to get an immune overreaction). What’s more, it also throws off your levels of interleukin, a signaling molecule that helps modulate your immune response.

The good news? These changes do appear to be reversible if you cut MSG out of your diet, although studies show that it can take a long time to repair the damage to your spleen.

Try this instead: Be aware of just how prevalent MSG is in restaurant foods, and do your best to avoid it when eating out. To get that same umami taste, look for natural alternatives like meat broths, mushrooms, high quality cheese, and [fermented foods](#).

3. Alcoholic beverages

Have you ever noticed that it seems to be easier to pick up a bug if you’ve been drinking a little more than usual? It’s not all in your head—alcohol has a couple of effects on your immune system that you could do without, including reducing the function of your macrophages (the cells that break down foreign invaders), messing with your immunoglobulin and cytokine levels, and impairing the production of T cells and B cells, both of which act as first responders in the body.³

What's more, drinking alcohol can affect your hormones, disrupting your Circadian rhythm. (This is why you may wake up in the middle of the night after you've been drinking.) Your [sleep cycles](#) are closely connected to your immune function, so alcohol-related changes in your Circadian rhythm can have you feeling unwell before you know it.

While these effects are most noticeable in people who regularly drink to excess, even moderate drinking can temporarily lower your immune function, especially if you're having all your drinks back to back, instead of spreading them out over a couple days.

Try this instead: When you drink, go for options like [wine](#) and beer—studies show that drinking these in moderation can actually give your system a little boost.⁴ Also, make sure that you alternate your alcoholic beverages with glasses of [water](#) (it's good for your body and helps you avoid a hangover), and don't overdo it.

4. Caffeine

Caffeine may make your mornings better, but it can also have some unwanted effects on your immune system. That boost of [energy](#) that helps you wake up in the morning can also come with the unpleasant side effect of boosted cortisol levels. Cortisol (a [hormone](#) released in response to stress) does a number on your metabolism and mood, and it can also lower your immune function if you regularly have high levels of it flowing throughout your body.⁵

What's more, regularly consuming caffeine may also make it harder for your body to stay well by reducing the number of T cells your body produces, suppressing the function of your lymphocytes, and lowering your interleukin production.⁶

Try this instead: You don't have to give up your beloved cup of Joe, but do be aware of how much caffeine you're getting in a day. (You might be surprised to find it hiding out in strange places like chocolate, soda, cereal, and even some medications!) You may also want to consider switching to lower-caffeine beverages, like tea. Just remember that moderation is the key!

5. Pesticide-laden, falsely ripened fruits and vegetables

While nutritional experts have gone back and forth on the health-giving properties of certain foods (we're looking at you, eggs and butter!), one piece of advice has remained constant: a diet based on a variety of colorful fruits and [vegetables](#) is crucial for enjoying good health. To understand why, you first need to have an understanding of how your gut microbes impact your immune system.

Your gastrointestinal tract is home to more immune cells than any other area of your body, housing more than 80% of your immune function. Beneficial gut microbes (also called probiotics) work together to support the strength of your [gut barrier](#), the layer of cells that make up the intestinal wall and act as a defense, keeping out undesirable bacteria, antigens, and environmental toxins. But they can only do this when you have enough of them in your gut, and it can be really hard to maintain high enough numbers of beneficial bacteria given the number of

common things that can destroy them. (Think: antibiotics in food or medication, harsh cleansers, getting too little sleep, etc.)

That's where a high veg diet comes in. Many fruits and vegetables are rich in [prebiotic fiber](#), which feeds your beneficial probiotics so they can have the edge over the bad guys to better support your immune function. One trial that focused on the effects of fruit and veggie consumption on the immune function of [older people](#) found that consuming five or more servings of vegetables a day had a significant impact on the participants' antibody response to vaccination, one of the markers of a well-functioning immune system.⁷

So why exactly have fruit and vegetables made the list? It comes down to how they're produced. Produce picked before it has had the chance to ripen contains high levels of lectin, a substance that naturally decreases as the plant matures and changes color. While useful for plants, lectin is less beneficial for the people eating them, as it can promote conditions in your gut that interfere with your microbial balance.^{8,9}

Plants grown out of season are also often loaded with pesticides that aren't good for your gut microbiome either. In fact, studies have found that some pesticides can change the composition of the gut microbiome, producing unwanted effects on immune function, as well as changes to your metabolism and [reproductive system](#).¹⁰

Try this instead: Filling your plate with a rainbow of beautiful vegetables is crucial for optimal immune function—just make sure you stock your fridge with organic, [seasonal produce](#) that's ripened naturally. Your local farmers' market is the perfect place to start!

6. Diet soda

You know soda isn't the best choice when you want to hydrate, but is diet soda a better option? Unfortunately not; while it's free from microbiome-disrupting sugar, diet soda is chock full of artificial ingredients, including sweeteners like aspartame, saccharin, and sucralose, none of which do your immune function any favors. Studies have shown that these ingredients can reduce levels of beneficial bacteria in your gut and have an adverse effect on glucose [metabolism](#), which has an extended effect on how well your body is able to respond to potential threats.¹¹

Try this instead: When it comes to quenching your thirst on a hot day, you can't beat a nice, cool glass of filtered water. If you prefer something with a bit more flavor, try adding a few fruit slices to your glass or go for an antioxidant-rich cup of [green tea](#).

7. Sugary snacks

It's no surprise that sugar is on the list of foods to avoid. Unwanted strains of bacteria positively thrive on sugar, and the more they have to feed on, the faster they grow, allowing them to crowd out beneficial bacteria.¹² Since your bacterial good guys are responsible for a whole host of health-promoting functions in the body, this imbalance can have a negative effect on your mood, your blood sugar levels, and of course, your immune function.

Sugar also directly impacts your immune system by competing for space with vitamin C, a core nutrient for your immune cells. The more sugar in your system, the harder it is for your immune cells to get the vitamin C they need to function, resulting in an up to 40% decrease in effectiveness lasting for hours after you consume the sugar!¹³

Try this instead: If you're feeling particularly motivated, why not try a temporary sugar detox? Avoid all sugar (including naturally occurring sugars like those found in fruit) for 10 days. By the end of the challenge you should find that you're more than happy to swap your favorite candy bar for a juicy apple with no complaints from your taste buds.

If you still find yourself craving the occasional sweet treat, go for a natural sweetener like prebiotic-rich honey, which can help promote the growth of friendly gut bacteria.

8. Products containing gluten

Gluten is another frequent flier when it comes to “worst foods” lists, and for good reason; a protein naturally found in **grains** such as wheat and barley, gluten is extremely difficult for your body to digest. As it passes through your system, it triggers the production of a protein called zonulin, which breaks down the cells of your intestinal walls. This gives toxins, food particles, and other harmful substances free rein to get into your bloodstream, often causing an unwanted immune response and leaving you feeling less than your best. And this doesn't only apply to people whose bodies really can't handle gluten—even those without a gluten sensitivity can experience **gastrointestinal symptoms** after eating gluten-containing foods.¹⁴

Try this instead: There are lots of gluten-free breads and pastas available these days, and you can have fun trying out recipes that call for naturally gluten-free foods like rice flour or oats. And make sure you're reading your labels! Gluten can show up in some surprising places, including condiments, dairy products, and candy.

9. Refined oils

Oil can be incredibly healthy for you, providing much-needed fatty acids like omega-3 and vitamin E, but only when they're produced right. Unfortunately, most oils are refined, meaning that they've been produced in a way that strips out the nutrients and mutates the natural molecular structure of the oil. If you're thinking that that sounds like it can't possibly be good for you, you're right.

Eating food cooked in refined oils can put a lot of stress on your system, leading to the production of free radicals that damage your delicate tissues and put your body through bouts of temporary inflammation. All of this is bad news for your immune system, reducing its ability to function and leaving you more likely to feel unwell.

Try this instead: Stick to high quality, cold pressed oils as much as you can. Coconut oil, ghee, organic extra virgin olive oil, and avocado oil are all good bets: they're not only much less likely to cause immune issues when you get high quality versions, they're also good sources of other healthy nutrients.

When it comes to immune function, the message is clear: take good care of your immune system, and it will take care of you. Avoiding or limiting the foods listed here is a great start but not always possible, so don't panic if you have the odd glass of unfiltered water or piece of non-organic fruit. You've got lots of options for supporting your immune function, with one of the most important ones being maintaining the health of your gut microbiome with [prebiotics](#), [probiotics](#), and gut-healthy habits.

[Prebiotic-rich foods](#) create a welcoming environment for beneficial bacteria in the gut, nourishing it and helping it thrive, so try to add lots of lovely prebiotic foods to your meals. (Onions, garlic, [apples](#), dandelion greens, asparagus, and bananas are all options, and a [prebiotic powder](#) can drastically increase your intake!) It's also worth looking at your lifestyle beyond diet and considering ways to reduce [stress](#), [increase movement](#) in your daily routine, and get plenty of [rest](#).

Finally, amp up your immune-supporting efforts by supplementing with a premium probiotic like [Hyperbiotics Immune](#), which contains five targeted probiotic strains, including *Lactobacillus* and *Bifidobacterium*, to help maintain your healthy gut microbiome and discourage the damaging effects of a modern lifestyle on your immune function. It also contains EpiCor®, a yeast superfood to support your immunity from three critical angles by keeping your skin and mucous membranes healthy, maintaining proper activity in three types of immune cells, and encouraging the production of T-cell and B-cell immune factors. With additional immune-specific additions like bioavailable vitamin C, zinc, and echinacea, this powerful daily immune formula can help keep you feeling your best, no matter what life throws your way!

References:

1. Christ, A., Gunther, P., Lauterbach, M.A.R., Duewell, P. . . . Latz, E. (2018). Western Diet Triggers NLRP3-Dependent Innate Immune Reprogramming. *Cell*, 172(14), 162–175. doi: 10.1016/j.cell.2017.12.013
2. Hassan, Z.A., Arafa, M.H., Soliman, W.I., Atteia, H.H., Al-Saeed, H.F. (2014). The Effects of Monosodium Glutamate on Thymic and Splenic Immune Functions and Role of Recovery (Biochemical and Histological study). *Journal of Cytology & Histology*, 5(6). doi: 10.4172/2157-7099.1000283.
3. Molina, P.E., Happel, K.I., Zhang, P., Kolls, J.K., Nelson, S. Focus On: Alcohol and the Immune System. *Alcohol and Health*.
4. Romeo, J., Wärnberg, J., Nova, E., Díaz, L.E., Gómez-Martinez, S., Marcos, A. (2007). Moderate alcohol consumption and the immune system: a review. *The British Journal of Nutrition*, 98(Suppl 1), S111-5. doi: 10.1017/S0007114507838049
5. Lovallo, W.R., Whitset, T.L., al'Absi, M., Sung, B.H. . . . Wilson, M.F. (2008) Caffeine Stimulation of Cortisol Secretion Across the Waking Hours in Relation to Caffeine Intake Levels. *Psychosomatic Medicine*, 67(5), 734–739. doi: 10.1097/01.psy.0000181270.20036.06

6. Horrigan, L.A., Kelly, J.P., Connor, T.J. (2006). Immunomodulatory effects of caffeine: friend or foe? *Pharmacology & Therapeutics*, 111(3), 877-92. doi: 10.1016/j.pharmthera.2006.02.002
7. Gibson, A., Edgar, J. D., Neville, C. E., Gilchrist, S. E., Mckinley, M. C., Patterson, C. C., . . . Woodside, J. V. (2012). Effect of fruit and vegetable consumption on immune function in older people: A randomized controlled trial. *American Journal of Clinical Nutrition*, 96(6), 1429-1436
8. Banwell J.G., Howard R., Kabir I., Costerton J.W. 1988. Bacterial overgrowth by Indigenous Microflora in the Phytohemagglutinin-fed Rat. *Canadian Journal of Microbiology* 34(8)
9. Gundry, S. R. 2017. The Plant Paradox: The Hidden Dangers in "Healthy" Foods That Cause Disease and Weight Gain. New York, NY: Harper Wave.
10. Shehata, A. A., Schrödl, W., Aldin, A. A., Hafez, H. M., & Krüger, M. (2012). The Effect of Glyphosate on Potential Pathogens and Beneficial Members of Poultry Microbiota In Vitro. *Current Microbiology*, 66(4), 350-358.
11. Suez, J., Korem, T., Zeevi, D., Zilberman-Schapira, G., Thaiss, C. A., Maza, O., . . . Elinav, E. (2014). Artificial sweeteners induce glucose intolerance by altering the gut microbiota. *Nature*, 514(7521), 181-186
12. Turnbaugh P.J., Ridaura, V.K., Faith, J.J., Rey, F.E. . . . Gordon, J.I. (2009) The Effect of Diet on the Human Gut Microbiome: A Metagenomic Analysis in Humanized Gnotobiotic Mice. *Science Translational Medicine* 1(6). doi: 10.1126/scitranslmed.3000322
13. Sanchez, A., Reeser, J.L., Lau, H.S., Yahiku, P.Y. . . . Magie, A.R. (1973). Role of Sugars in Human Neutrophilic Phagocytosis. *American Journal of Clinical Nutrition*, 26(11):1180-4.
14. Biesiekierski, J. R., Newnham, E. D., Irving, P. M., Barrett, J. S., Haines, M., Doecke, J. D., . . . Gibson, P. R. (2011). Gluten Causes Gastrointestinal Symptoms in Subjects Without Celiac Disease: A Double-Blind Randomized Placebo-Controlled Trial. *The American Journal of Gastroenterology*, 106(3), 508-514. doi:10.1038/ajg.2010.487

Rachel Allen is a writer at [Hyperbiotics](#) who's absolutely obsessed with learning about how our bodies work. She's fascinated by the latest research on bacteria and the role they play in health, and loves to help others learn about how probiotics can help the body get back in balance. For more ideas on how you can benefit from the power of probiotics and live healthier days, be sure to subscribe to our newsletter. To learn more about how a healthy microbiome can enrich your life, subscribe to our [newsletter](#).

This Healthy Living section of the Hyperbiotics website is purely for informational purposes only and any comments, statements, and articles have not been evaluated by the FDA and are not intended to create an association between the Hyperbiotics products and possible claims made

by research presented or to diagnose, treat, prevent, or cure any disease. Please consult with a physician or other healthcare professional regarding any medical or health related diagnosis or treatment options. This website contains general information about diet, health, and nutrition. None of the information is advice or should be construed as making a connection to any purported medical benefits and Hyperbiotics products, and should not be considered or treated as a substitute for advice from a healthcare professional. Always seek the advice of your physician or other qualified health professional with any questions you may have regarding a medical condition.