

## The Beast that is Yeast! (the Good, the Bad, and the Fungus) 😊

### Written by Sheila from She She's Bakery

A customer recently asked me why exactly we are a yeast free bakery. My answer, though clear and concise in my mind, was verbally jumbled and my actual response was only subpar. I basically said because I have been doing it for so long and I know it is healthier! Needless to say, she inspired me to write about this and yes, she had first dibs on this write up. 😊 We are continuously challenged by our customers and this helps us grow and improve as a new business, we love it!

I am inclined to use musical quotes because of my talented musician husband. "Blues is to jazz what yeast is to bread--without it, it's flat." However, here at She She's Bakery, we have managed to create lots of "un-flat" flavorful goodies without yeast. Any dough rising that is needed works just as good with organic baking powder and soda. Also part of the reason we use alcohol-free vanilla extract in our goodies!

Years ago when I first became chronically ill, I ventured to try different diets during my treatments, and though the diets may have differed in what food items were eliminated and what were added, one thing remained pretty consistent in that they needed to be yeast-free; or at the very LEAST, NO YEAST with the exception of nutritional yeast or *saccharomyces boulardii* in the form of a probiotic. I will elaborate on what both are in this article.

What exactly is yeast? Besides the magical ingredient that makes bread rise or that yummy frothy addition to beer? To put it simply, yeast is a fungus. But before you freak out, not all fungi are bad for you and certainly not all are created equal!

There are many types of yeast. In fact, we all have yeast in our bodies, one type that is called candida. *Candida albicans* is the most common strain. But there are at least 20 candida species that cause infections in humans (<https://www.webmd.com/diet/ss/slideshow-yeast-and-your-body>). If candida strains in general grow out of control due to prolonged antibiotic treatments, oral birth control medications, and/or a diet high in yeast, sugars, and simple carbohydrates, it can also lead to an infection. And if you are already dealing with a weakened immune system, these infections can happen frequently.

Candidiasis, or a yeast infection, can happen when yeast is out of balance in our bodies. Yeast infections can affect our skin, feet, and other private parts of our bodies. This often leads to gas, bloating, acne, diarrhea, mouth sores, bad breath, a coating on your tongue, or itchy rashes. Therefore, it makes sense to cut out certain yeast rich foods from your diet if you are chronically ill to help your healing process. Or of course if you are just striving to maintain good health. While this is rare, if yeast overgrows and gets into your blood, it could cause infection throughout your whole body which is called systemic candidiasis. Treatment for this would require both medical care and complete elimination of yeast/sugar/simple carbs from your diet. *Candida auris* is a newly discovered fungus in this family that has become a concern in the medical field and is the yeast that is most often to blame for health problems. Antifungal drugs do not seem to work against this strain and hospital patients infected with it can get very ill.

Some people develop allergies certain types of yeast in foods like bread, vinegar, and beer and can develop hives on their skin as a reaction. There are also severe yeast allergies that could make it hard to

breathe or cause your throat to swell. This is something you can determine with an allergist and allergy skin testing.

As I mentioned earlier, not all yeast is bad for you. In fact, you can get plenty of proteins and B vitamins from yeast-rich healthy foods (for example, mushrooms). Yeast keeps your digestive system healthy and in balance and the right amount in your body helps your immune system do its job. Yeast needs to be a part of a healthy mix of bacteria in your gut. It can help you better absorb vitamins and minerals from your food, and even fight disease.

Nutritional yeast has been a recent healthier trend as it is a deactivated yeast that is fortified, often a strain of *Saccharomyces cerevisiae*, meaning it's grown on molasses and then harvested, washed, and dried with heat to kill or "deactivate" it. Because it is inactive, it does not grow like baking yeast does and has no leavening ability. And therefore, it will not cause or contribute to infections or inflammation in our bodies. It is actually good for our bodies because it is a rare non-animal source of vitamin B12 that helps us break down foods for energy. It delivers large amounts of the B vitamins, including folic acid, plus protein, iron, and potassium, all without saturated fat or sugar. It is also very low in sodium with only 25 milligrams per serving, or just 1 percent of the daily nutritional value. You can find it at a health-food store or the healthy foods section of any supermarket, where you can buy a bag of nutritional yeast flakes, and sprinkle on your popcorn or homemade sauces. It has a cheesy and nutty flavor (identified as umami flavor)! We are working on some delicious new savory menu items at She She's Bakery that will include nutritional yeast, stay tuned!!

Yeast extract is another ingredient that we see in many food items, particularly vegan "meat" products. While it is very similar to nutritional yeast, the difference between the two is how strong the yeast extract flavor is compared to nutritional yeast. Yeast extract consists of the cell contents of yeast without the cell walls and really are used as food additives or flavorings. It is made by adding sugar to yeast in a warm environment and as the yeast expands, the walls of its cells soften. This mixture is then spun in a centrifuge and the loosened cell walls are extracted and used to become the yeast extract ingredient in many products. It has recently become a healthier alternative to MSG (Monosodium glutamate), a controversial ingredient that many IBS (irritable bowel syndrome) patients need to avoid. Yeast extract contains naturally occurring glutamates, but not as much as MSG. The main difference between yeast extract and MSG in foods comes down to flavor. MSG does not have a flavor while yeast extract tastes like meat bouillon! This may be another ingredient we add to our savory menu in the near future, in small doses of course and with complete transparency like we do everything else! We still prefer yeast extract to using yeast because the yeast extract is more nutritious and has also been deactivated like nutritional yeast.

Similar to many trends with health benefits, probiotics had a slow start even though they have been part of our lives for thousands of years. Long before we knew the words probiotics or microbes, or even had microscopes to see strains, people were eating fermented foods. Beer, wine, yogurt, cheese, kefir, and sauerkraut were not only delicious menu items but were also discovered to be healthy. In ancient Rome, the famous naturalist philosopher and author, Pliny the Elder, would often prescribe fermented milk as a treatment for intestinal problems (<http://internationalprobiotics.org/resources/history/>), never knowing really understanding how or why it worked the way it did. Probiotics are live bacteria and yeasts that are good for you, especially your digestive system. It is what I referred to earlier as good bacteria and are now prescribed by doctors (even though they are over the counter supplements) to

take for many illnesses (eg. IBS, IBD, Diarrhea due to infection), or simply as a supplement to boost your gut health. Doctors will now also recommend that if you are taking antibiotics (medication developed to kill ALL bacteria in your body, good or bad) that you should take probiotics alongside your antibiotic treatment in order to add back the good bacteria in your gut. I have personally found it best to take the probiotics at least two hours away from the antibiotics so that the two basically do not cancel each other out (from my experience and research, this has not been FDA confirmed). Many types of bacteria are classified as probiotics and they all have different benefits and come from various fermented foods. But most come from two groups – Lactobacillus and Bifidobacterium. *Saccharomyces boulardii* is a yeast found in probiotics that help fight diarrhea and other digestive problems.

On an innovative and hopeful note, I came across in my “research/yeastsearch” 😊 that new cancer drugs and screening tests that use yeast are taking place. Many genes involved in cancer are like those found in yeast, which makes them easier to map and study. One of the first scientists to discover some of these cancer-causing mutations was a biologist and Nobel Prize winner named Leland H. Hartwell. He found out that he could use an easy-to-manipulate, single-celled eukaryote as a model system for studying cancer and the cell cycle. This organism was *Saccharomyces cerevisiae*, or baker's yeast. Hartwell discovered the same genes that control the cell cycle in baker's yeast (and that malfunction in tumor cells) exist in the same capacity in human cells. One project that scientists are working on is even using yeast to create new drugs to treat aggressive breast cancer linked to the BRCA gene! Here are She She's, we have been glad to give up baker's yeast for both research and health purposes. 😊

As you can see there are many advantages to the body having yeast in its different forms, but the key word like everything else in maintaining good health, is balance and informed research before you put something new in your body. At She She's Bakery, we like to take the healthier alternatives as much as possible. I was happy to do the research on this topic and I believe it helped reiterate the point of why we are a yeast-free bakery. We would, however, like to add nutritional yeast and yeast extract to a small selection of our near-future menu as we add new savory items and want you to enjoy the vegan alternatives to absorbing the wonderful B vitamins!

## Sources:

<https://www.healthline.com/health/food-nutrition/is-yeast-extract-bad-for-me#4>

<https://blog.fatfreevegan.com/2011/10/what-the-heck-is-nutritional-yeast.html>

<http://www.differencebetween.net/object/difference-between-yeast-and-yeast-extract/>

<https://www.webmd.com/diet/ss/slideshow-yeast-and-your-body>

<https://www.webmd.com/digestive-disorders/what-are-probiotics#1>

<https://zbiotics.com/blogs/journal/a-brief-history-of-probiotics-span-a-walk-down-memory-lane-from-the-beginning-of-probiotic-history-to-today-and-beyond-span>

<https://www.nature.com/scitable/topicpage/l-h-hartwell-s-yeast-a-model-808/>