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Is Zinc Deficiency Behind the Dramatic Spike in Yeast Infections?

Analysis by Dr. Joseph Mercola | February 07, 2024

STORY AT-A-GLANCE

- Three out of four women will have a vaginal yeast infection in their lifetime and an estimated 140 million women worldwide suffer recurrent infections
- According to recent research, vaginal yeast infections may be triggered by zinc insufficiency. Candida feeds on zinc, and when zinc is low, it releases an inflammatory zinc-scavenging protein called pH-regulated antigen (Pra1). Pra1-induced inflammation is what causes the hallmark burning and itching that goes along with a vaginal yeast infection
- In a pilot study, commercially available zinc-containing vaginal cream prevented yeast reinfection in five out of six women. A larger clinical trial is planned to confirm the results
- Other supplements that can be helpful in the treatment of Candida include caprylic acid, berberine, echinacea, pau d'arco and aloe vera gel
- A yeast infection will produce an odorless, white, curd-like discharge from your vagina along with itching and swelling of the vagina and vulva, while cloudy, foul-smelling urine and frequent painful urination are hallmarks of a urinary tract infection. Common causes and treatments of UTIs are also addressed

Three out of four women will have a vaginal yeast infection in their lifetime and an estimated 140 million women worldwide suffer recurrent infections.[1] Recurrent infections can have a significantly detrimental impact on quality of life, and because

resistance against existing treatments is on the rise, women are in dire need of viable treatment alternatives.

Most vaginal yeast infections are caused by a yeast called Candida albicans, the same fungus that is also responsible for yeast infections — also known as thrush — in the mouth, throat and gut.

The video above features an **interview I did with Dr. Leon Chaitow** back in 2016, in which he reviews how Candida can affect your health. Vaginal yeast infections in women is just one potential outcome.

Interestingly, according to recent research,[2,3,4] zinc deficiency may be what's allowing thrush to flourish, and this is something we did not know back in 2016. As it turns out, Candida feeds on zinc, and when zinc is low, it releases a zinc-scavenging protein called pH-regulated antigen (Pra1) to take advantage of what little zinc is available.

The problem is that Pra1 triggers inflammation in the host. The Pra1-induced inflammation is what causes the hallmark burning and itching that goes along with vaginal yeast infection.

Vaginal Zinc Cream Effectively Prevents Reinfection

In experiments, the researchers found that inflammation could be prevented in mice by manipulating genes in the yeast that blocked production of Pra1. Giving the mice a low-dose vaginal zinc gel produced the same results.

Lastly, they tested a commercially available zinc-containing vaginal cream (sold under the brand name Juvia) in six women who'd had recurring vaginal yeast infections at least once every three months. The cream was applied nightly for two weeks, and then twice a week for another 10 weeks.

> **"In a pilot study, commercially available zinc-containing vaginal cream prevented yeast reinfection**

> **in five out of six women. A larger clinical trial is planned to confirm the results."**

At the end of the three-month study, five of the six women had not experienced reinfection. The team is now planning to conduct a larger clinical trial to confirm the effectiveness of the zinc treatment. In a media press release, research leader Duncan Wilson, Ph.D., of the University of Exeter's MRC Centre for Medical Mycology, commented:[5]

> *"Recurring thrush can be deeply distressing and problematic, and we urgently need new treatments. Our new finding on zinc is very exciting, because it suggests that simple provision of zinc could block the production of the inflammatory Pra1 molecule, but we're not in the position to make treatment recommendations at this stage.*
>
> *We need larger scale trials to confirm the effect. Please don't apply any products that are not designed for the genital area, as zinc can be toxic at high concentrations and it could be extremely unsafe."*

Signs and Symptoms of Candida

Candida albicans is a very pervasive yeast. Most people have it in their system, and for most, it poses no problem at all. However, if your immune system becomes disrupted from exposure to antibiotics, lack of sleep or eating too much sugar, Candida can begin to grow out of control.

One major — and clearly visible — clinical sign of Candida is a white coating on your tongue. When your microbial balance is normal, your tongue is typically clean and pink. Early intervention at this point could potentially avert many cases of thrush.

Aside from that, the symptoms of Candida overgrowth typically begins in the gut, with things like bloating, constipation or diarrhea. The normal flora in your gut produces biotin, which suppresses the ability of yeast to change into more aggressive forms.

So-called mycelial forms of yeast actually put down tiny "roots" that penetrate the mucus membrane of your gut, thereby allowing toxins from your gut to spill out and cause systemwide symptoms, such as unusual, persistent fatigue, sudden development of food sensitivities, unusual aches and pains that do not appear to have a determinable cause (such as an injury), dry skin patches, and vaginal yeast infections in women.

So, while yeast is not problematic per se — it's a normal part of healthy gut flora — it becomes problematic when it's not kept in check and starts to turn into the mycelial form. It's quite likely that women who suffer recurrent vaginal infections have dysregulated gut flora, and that's why they never experience full recovery.

How to Control Candida

To control the Candida yeast you need to starve it. This will suppress it naturally rather than using drugs to kill it outright. Candida can be viewed as a free-loader that takes advantage of your dietary and lifestyle mistakes. Things that will promote Candida overgrowth include anything that will suppress your immune function, such as:

- Eating too much refined sugar and processed foods
- Drugs such as antibiotics, steroid hormones and oral contraceptives; by changing your microbiome, they predispose Candida to grow into its more invasive form
- Lack of restorative sleep
- Lack of fresh air, physical activity and exercise

As noted by Chaitow in 2016:[6]

> *"The ... overarching approach to all these chronic problems is to ... enhance immune function, whichever way you can ... It can be just better lifestyle, better sleep, more exercise and improved, enhanced diet.*
>
> *Stop feeding the yeast, stop damaging your immune function, and replenish the gut flora as best [as] possible. The yeast, controlled, takes care of itself. You don't have to kill it … We have this natural wonderful symbiosis with our gut*

flora. It keeps us alive. It keeps us healthy. But if we damage it, we pay the price ...

The diet is the key. The diet needs to be as unprocessed as possible … The Mediterranean Diet is the ideal one. It's fish (not farmed fish if possible) [and] lean meat … The agricultural industry is the main user of antibiotics [so] that's where we're most at risk …

Vegetables, fruits — not too much of the very sweet fruits at the beginning of the anti-Candida program, but certainly fruits like papaya are wonderful.

The avoidance of anything that is going to provoke fermentation. Sugar is key to avoid. At the beginning, that even covers things like honey in the first month or two of an anti-Candida program.

I think it's quite a simple process. It's healthy lifestyle, healthy diet. The program has to be coupled initially by trying to encourage more normal gut flora. We go straight into the prebiotics and probiotics. That needs to be accompanied by change in diet and avoiding antibiotics wherever possible."

To those basic guidelines we can now add the recommendation to boost your zinc intake. Making sure you're not zinc deficient will also help prevent Candida overgrowth in the first place. Only in severe and/or intractable cases do I recommend using an antifungal drug like Nystatin, which is a relatively benign drug with few side effects.

Useful Supplements

Chaitow recommends a number of supplements that can be useful against Candida, including:

- **Caprylic acid**, a medium-chain triglyceride (MCT) with eight carbons (which is why it's also known as C8). While it's found in coconut oil, you can also buy MCT oil, either straight C8 or in combination with capric acid (C10). No other food source converts to ketones more readily than C8, and ketones are a magnificent, efficient

fuel for your body. Caprylic acid is also a potent antifungal, and Chaitow recommends it in lieu of antifungal drugs.

- **Aloe vera gel** contains a mucopolysaccharide with powerful immune benefits:
    - **Antifungal properties —** Aloe vera contains compounds that have antifungal activities, which can help in inhibiting the growth of Candida, the yeast responsible for vaginal candidiasis. Studies have shown that aloe vera can be effective against several Candida species, including Candida albicans, which is commonly involved in vaginal yeast infections.
    - **Anti-inflammatory effects —** Vaginal candidiasis can cause inflammation and irritation. Aloe vera has anti-inflammatory properties that can help reduce these symptoms. It soothes the inflamed tissues, providing relief from itching and discomfort associated with the infection.
    - **Healing properties —** Aloe vera is well-known for its healing and regenerative properties. It can help in the repair of damaged tissue in the vaginal area caused by the yeast infection. This is due to the presence of glycoproteins and polysaccharides in aloe vera, which are known to aid in skin healing and regeneration.
    - **Immune-boosting effects —** The immune-modulating properties of aloe vera can be beneficial in fighting off infections, including yeast infections. By boosting the body's immune response, aloe vera can help in quicker resolution of the infection.
    - **Moisturizing effect —** Aloe vera is a natural moisturizer, which can help in maintaining the natural moisture balance in the vaginal area. This is important because both excessive dryness and excessive moisture can contribute to the conditions that promote yeast overgrowth.
    - **pH balancing —** Maintaining the natural pH of the vagina is crucial for its health. Aloe vera can help in maintaining the vaginal pH, thus creating an

environment less conducive for the growth of Candida.

- **Natural and gentle —** Aloe vera is a natural and gentle remedy, which makes it suitable for sensitive areas like the vaginal region. It is less likely to cause irritation or adverse reactions compared to some chemical-based treatments.

How to Tell a Yeast Infection and a Urinary Tract Infection Apart

If you're a woman, it can in some cases be difficult to tell whether you're suffering from a vaginal yeast infection or a urinary tract infection (UTI). Both cause pain and discomfort, but there are key differences by which you can tell them apart.[7]

A yeast infection will produce an odorless, white, curd-like discharge from your vagina along with itching and swelling of the vagina and vulva, while cloudy, foul-smelling urine and frequent painful urination are hallmarks of a UTI.

In severe cases, a UTI can also cause fever, chills, nausea and vomiting, which typically never happens if you have a yeast infection. In rare cases, a severe UTI can also trigger acute psychosis, especially in those already suffering from major depressive disorder with psychotic features.[8] It's also known to induce delirium in elderly patients,[9] and those with Alzheimer's appear to be at increased risk.[10]

How to Treat UTIs

UTIs are most often caused by Escherichia coli bacteria,[11] which can be introduced into your urinary tract in a number of ways, such as via your own feces or during sexual intercourse. The urethra, which carries urine out of your body from your bladder, is much shorter in women than in men, which is one reason why women tend to get more UTIs.

If not effectively treated, UTIs can progress to kidney infections, sepsis and even death. Deaths from UTIs increased by 2.4-fold from 1990 to 2019. One of the reasons for this is because many of the bacteria responsible for UTIs have developed resistance to the antibiotics used to treat them.[12] According to a 2019 study,[13] more than 92% of UTI-

causing bacteria are now resistant to one or more commonly used antibiotics, and nearly 80% are resistant to two or more.

The good news is you don't need antibiotics. Methylene blue is a highly effective agent against UTIs; it kills virtually any pathogen in your bladder without disrupting the microbiome the way antibiotics do. Cranberries can also be helpful. Research published in the Cochrane Database of Systematic Reviews noted that the proanthocyanidins in cranberries help prevent E. coli from sticking to the urothelial cells lining the bladder.[14]

How to Reduce Your Risk of UTIs

As with yeast infections, eating a diet that promotes a healthy gut flora will help reduce your risk of UTIs. Aside from that, commonsense hygiene is also important, as you want to avoid harmful bacteria from entering your urethra.

For example, make sure you wipe from front to back to prevent bacteria from entering your urethra, or better yet, install a bidet, which allows you to rinse off your genitals after each bathroom break, and pat dry. Also cleanse male and female genital areas prior to sexual intercourse.

If you're prone to UTIs, avoid hot tubs and Jacuzzis, especially public ones, and take showers instead of baths. Also drink plenty of pure, filtered water every day, urinate when you feel the need (don't resist the urge to go) and avoid using feminine hygiene sprays, which may irritate your urethra.

Raw Poultry Responsible for Most UTIs

Lastly, use caution when handling raw poultry, as researchers have conclusively demonstrated that a majority of UTIs are caused by exposure to contaminated chicken. I reported this in "**What Are the Primary Causes and Potential Complications of Urinary Tract Infections?**"

In short, in most cases, the UTI-causing E. coli is introduced to your body from the food you eat, primarily concentrated animal feeding operation (CAFO) chicken, but also, potentially, pork and beef. According to one study, E. coli from food may be responsible for 640,000 UTIs in the U.S. each year, and numbers may be higher in areas near CAFOs. To avoid this risk, follow these guidelines:[15]

Never wash raw chicken, as it spreads bacteria around. If needed, pat the chicken with a paper towel while still in its packaging rather than rinsing it
Place raw chicken on the lowest shelf of your refrigerator or freezer to prevent bacteria-laden juice from dripping onto other foods
Refrigerate at 40 degrees F. or lower for no more than two days, or freeze at zero degrees F.
Use a designated cutting board for chicken; do not cut vegetables on this board
Thoroughly wash your hands after handling raw chicken
Do not place the cooked meat on the same plate used to hold the raw chicken
Cook the chicken until internal temperature reaches 165 degrees F.

Sources and References

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