

15 Zinc Deficiency Symptoms and Best Food Sources



by
DR. JOCKERS

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15 Zinc Deficiency Symptoms

Zinc deficiency is a common problem throughout the world that contributes to many unwanted health problems. Zinc is a foundational mineral that is essential to human and animal growth patterns and has an essential role in the development of hormones and immune molecules. Zinc is one of the best mineral supplements to boost and balance out a tired and over stimulated immune system. This article goes into detail on 15 zinc deficiency symptoms and best food sources.

Experts predict that almost 2 billion people which is roughly 25% of the world's population is deficient in zinc (1). This is thought to be from inadequate consumption through the individual's diet. From a functional health perspective there is a lot more zinc deficiency in our society due to poor biochemical pathways.



Depleting Our Zinc Stores:

When we have poor blood sugar signaling due to a diet that is high in sugar and carbohydrates we are unable to adequately absorb zinc. Individuals with leaky gut syndrome often will develop a zinc deficiency from poor absorption.

Consuming high amounts of phytic acids in grains and legumes can adversely affect zinc levels. The regular use of non-steroidal anti-inflammatory drugs (**NSAIDs**) depletes zinc levels in the body as well. Here are the most common symptoms associated with a zinc deficiency.

SIGNS OF ZINC DEFICIENCY



Lowered Immunity



Breast & Prostate Cancer



Poor Memory



Infertility



Loss of Sex Drive



Frequent Colds/Flu's



Unusual Hair Loss



Slow Thinking Processes



Spots on Fingernails



Loss of Taste or Smell



Sinus Problems & Allergies



Skin Rashes /Eczema



Loss of Appetite



Insomnia



Low Energy

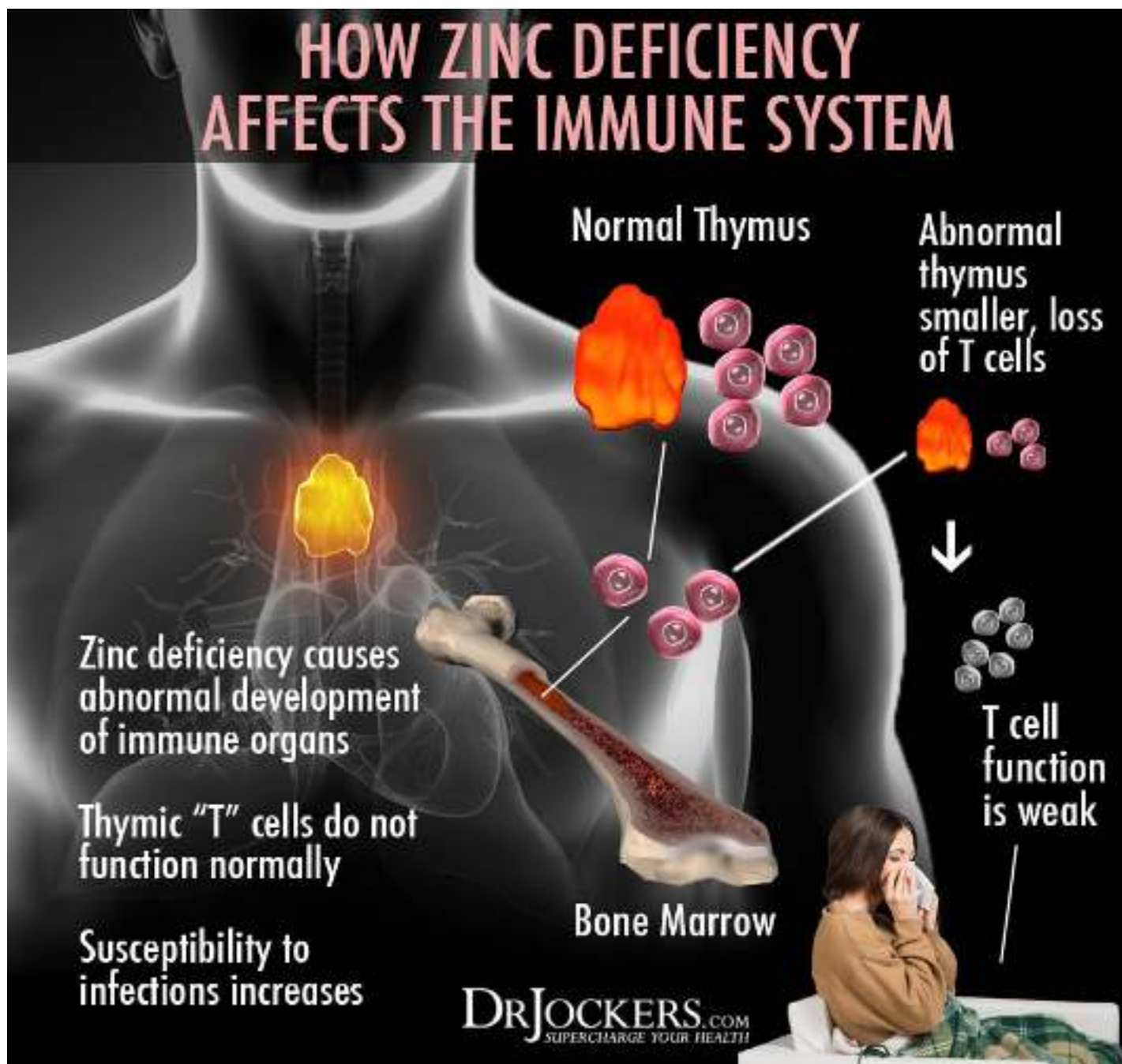


Zinc is Critical For Immune Health:

Zinc is critical for balancing the immune system and keeping the Th-1 and Th-2 systems in check. Zinc potentiates the action of the human cytokine interferon alpha, a protein that inhibits viral replication. This reduces immunological stress and improves the immune coordination (2).

Zinc is also a very specific component of specific enzymes in the body including superoxide dismutase enzymes (SODs). SOD is a powerful intracellular antioxidant that protects the

cellular genomics and prevents against **viral infection** and toxic debris accumulation within the cellular matrix.



Zinc Reduces Inflammation in the Body:

When the immune system recognizes a pathogen it sets off a series of molecules to create a process that activates the innate immune response. This process involves the Nuclear Factor – kappa Beta (NF- κ B) pathway. Healthy immunity depends upon sensitive NF- κ B activity but must reduce the over stimulation of NF- κ B or we risk **chronic inflammation** (3).

Zinc plays an important role as it binds to a protein within the NF- κ B pathway that halts its activity (4). This is a programmed shut down of the NF- κ B pathway that reduces the effects of too much inflammatory activity within the cells. Without adequate zinc the NF- κ B pathway gets over stimulated and creates chronic inflammatory conditions that have been linked to degenerative disease processes (5).



ZINC DEFICIENCY SYMPTOMS

- Spots on Fingernails
- Low Energy
- Insomnia
- Infertility
- Loss of Taste or Smell
- Skin Rashes / Eczema
- Loss of Appetite
- Lowered Immunity
- Poor Memory
- Sinus Problems and Allergies
- Breast and Prostate Cancer
- Loss of Libido
- Frequent Colds or Flu
- Abnormal Hair Loss
- Slow Thinking Process

FUNCTIONS

- Decreases inflammation
- Suppresses abnormal tissue growth
- Boosts healthy Immune function
- Supports progesterone production, essential for balancing estrogen
- Reduces risk and development of any cancers including esophageal, bladder, breast, skin, prostate and head and neck cancers
- Supports the p53 Gene, which protects against breast and prostate cancer
- Inhibits angiogenesis
- Stimulates apoptosis

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DR. MICHAEL J. JOCKERS, M.D.

Zinc Deficiency and Pyroluria:

Pyroluria, also called Malvaria, is a unique metabolic condition that is very rarely recognized in both the medical and natural health world. It is considered by many in the functional medicine world the most common unknown disorder.

There are several waste products that are produced when the body makes hemoglobin for the red blood cells. These waste products are called kryptopyrroles which are technically called hydroxyhemopyrrolin-2-one (HPL) which are typically excreted by our body. Individuals with **pyroluria** are unable to clear the HPL effectively and they build up in the system (6, 7).

The HPL binds strongly to zinc, biotin and vitamin B6 which are critical nutrients for cellular metabolism. Over a period of time, the body becomes very deficient in these critical nutrients and symptoms arise. These individuals need high doses of these key nutrients and typically will need 60-100 mg of zinc supplementation daily.

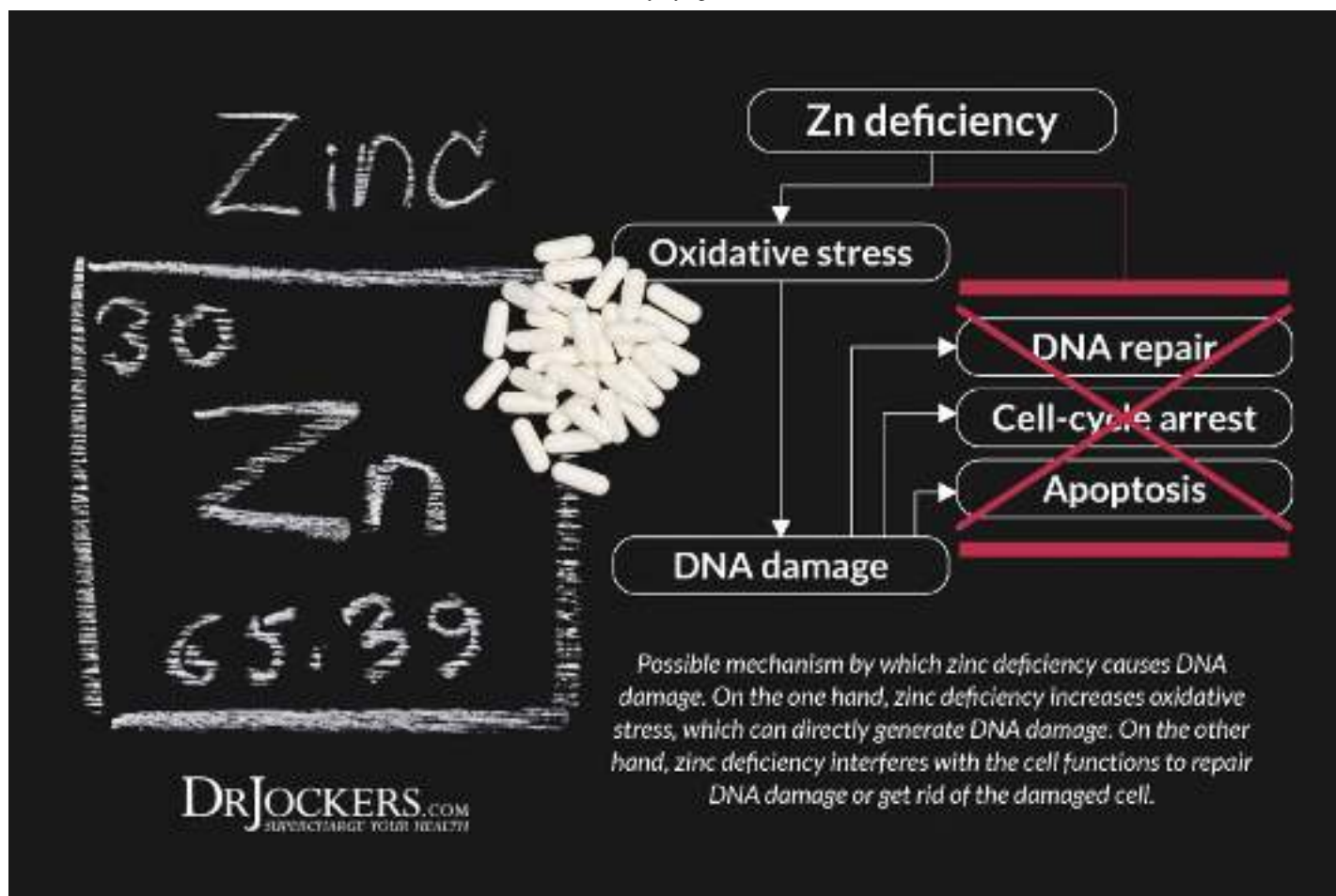
5 Reasons Why You May Be Zinc Deficient



Zinc Helps Reduce Cancer Cell Growth:

Zinc's modulatory effect on NF-kB makes it a formidable player in the prevention of cancer cell growth patterns. It has been shown to decrease tumor cell angiogenesis and the induction of inflammatory cytokines. It also increases apoptosis (programmed cell death) in abnormal cell lines which reduces the chances of cancer growth (8).

Research shows that zinc is particularly important in prostate and **breast cancers**. A 2012 study showed that individuals with BRCA1 gene (strongly associated with breast cancer development) that had the highest levels of zinc had the lowest risk of cancer development. The study also showed that those with the lowest zinc levels had significantly elevated risk of developing breast cancer (9).



Zinc Deficiency and Estrogen Balance:

In other research, Dr. David Watts reviewed the hair trace mineral reports of thousands of women and found that a pattern of elevated boron, copper and calcium levels with lower levels of zinc occurred in women with breast cancer. Dr Watts' understanding is that boron and copper appear to make the body more sensitive to the stimulatory effects of estrogen, and less responsive to the quieting effects of progesterone.

Zinc is the mineral that aids in the production and utilization of progesterone, so this pattern of mineralization makes women less progesterone responsive and more estrogen sensitive. Raising zinc levels and lowering boron, copper and calcium levels can bring these women into mineral balance and help in the creation of hormonal balance.

The primary gene protecting men from prostate cancer and women from breast cancer is the **p53 gene**. This is thought to be the guardian of the human genome. When this gene becomes mutated it allows for the development of cancer. The gene requires zinc and zinc deficiencies are shown to cause mutated versions of the p53 gene (10). This dramatically raises the risk of breast and prostate cancer cell development.



Relationship Between Zinc and Copper

Zinc and copper compete against one another as antagonist in order to properly regulate the physiological pathways in your body. The proper balance between the two **trace minerals** is critical to maintaining health.

Unlike zinc, copper can readily accumulate in the body into toxic concentrations. In order to maintain adequate zinc levels, a higher dose of zinc compared to copper is required daily. Zinc is only stored for short durations in the blood and bone and is quickly excreted through our urine and fecal matter. (11)

Ideally, nutritional biochemist Dr. Paul Eck recommends that the proper intake of copper to zinc should be a 1:8 ratio (12). When properly concentrated in the right balance, zinc behaves like the bigger brother blocking copper in food and in the body from being absorbed (13). Fortunately, the foods that are high in zinc, such as meat, seafood, nuts and pumpkin seeds are also very high in copper so you get both of these together in your diet.

We test plasma zinc and serum copper levels and the ideal ratio is roughly 1-1.2, meaning you should have equal or slightly higher levels of plasma zinc than you have serum copper.

PLASMA ZINC AND SERUM COPPER RANGES

Zinc and Copper are trace minerals that play an important role in a number of physiological pathways. These 2 compete with each other for uptake and utilization in the body. You can test your levels with a simple blood test.

IDEAL RANGES:

| | |
|----------------------------|--------------|
| Plasma Zinc: | 90-135 ug/dL |
| Serum Copper: | 70-110 ug/dL |
| Zinc: Copper Ratio: | 1.0 - 1.2 |



CLINICAL BENEFITS OF ZINC

- ✓ Blood Sugar Support
- ✓ Healthy Skin & Immunity
- ✓ Speeds Up Healing
- ✓ Improves Hormone Balance
- ✓ Enhances Sexual Health

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How Much Zinc Should You Take In?

The best food sources of **zinc** include oysters, shellfish, meat, eggs, nuts and seeds. I personally do not recommend relying only on nuts and seeds as they also contain phytic acids that bind to zinc and have reduced zinc absorption through the digestive system. Seafood, grass-fed beef and organ meat and pasture raised eggs are much better sources.

Sprouting seeds helps to remove phytic acids and lectins and makes the **zinc** and other minerals more bioavailable and easy to absorb. Look for sprouted pumpkin, sunflower, hemp and chia seeds for good zinc sources.

The recommended daily allowance for zinc is between eight to eleven milligrams for most adults. However, for functional health most progressive nutritionists and doctors recommend between 30-40 mg/daily. Zinc can be a problem when one takes in more than 100 mg/daily. The preferred form of **zinc** is in an amino acid chelate such as glycinate chelate.



Key Benefits of Zinc Charge

- ✓ Supporting Enzymatic Reactions and Protein Metabolism*
- ✓ Promoting Immune and Reproductive Health*
- ✓ Supporting Antioxidant Activity*
- ✓ Enhancing Overall Sensory Perception*

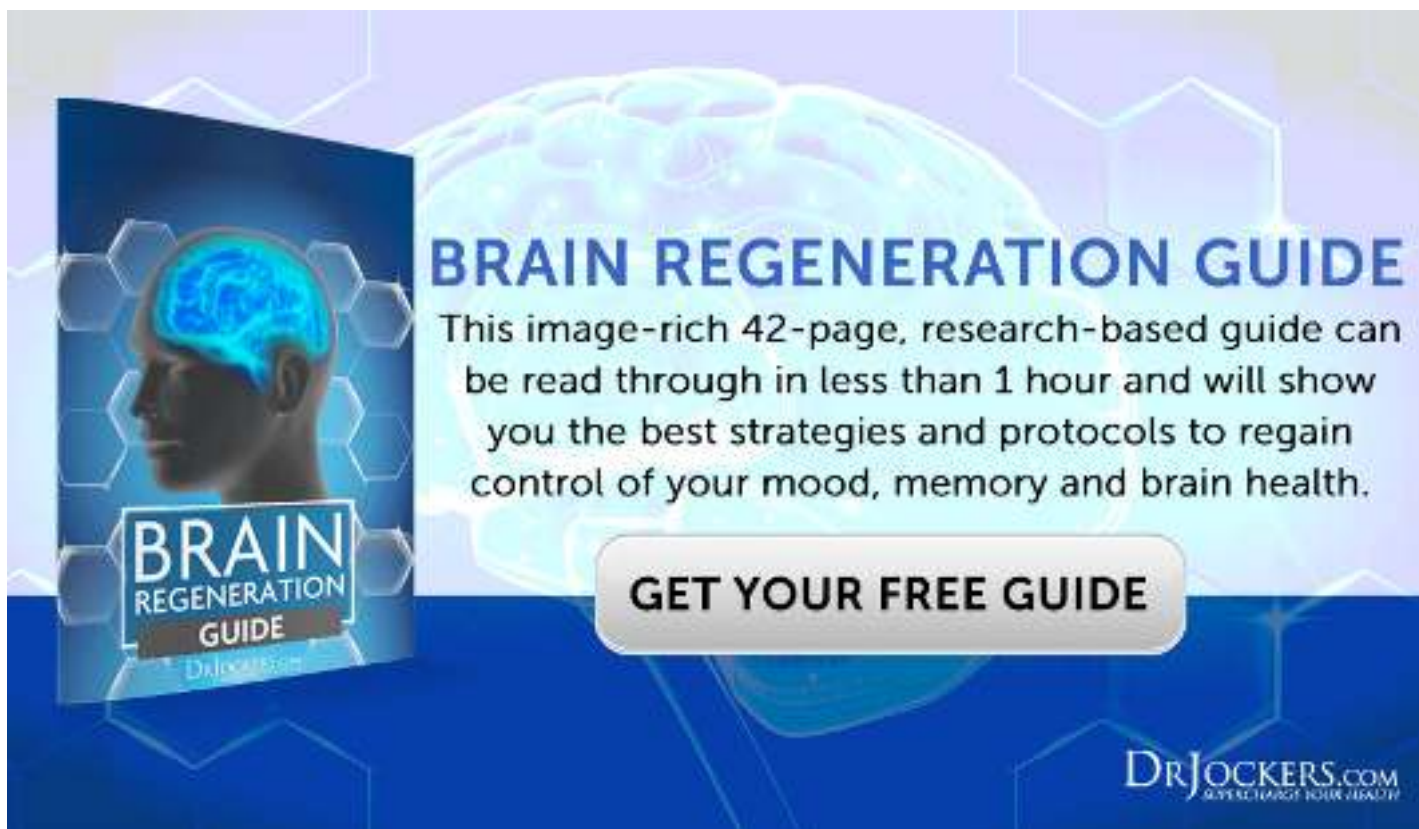
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Dr. Jockers

Dr David Jockers is passionate about seeing people reach their health potential in mind, body and spirit. He is the host of the popular “Dr Jockers Functional Nutrition” podcast and the

author of the best-selling books, “The Keto Metabolic Breakthrough” and “The Fasting Transformation.”

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comments

Comments

Mike

January 7, 2014 at 7:58 am

You talk about sun flower and pumpkin seeds as good sources of zinc but earlier you mentioned how phytic acid limits the absorption of zinc. So are they good sources?

[Reply](#)

Dr. Jockers

January 7, 2014 at 7:59 am

Mike, that is a great question. Both contain megadoses of zinc so they are very good sources but if they are not soaked or sprouted they will also leach some of the zinc out due to the phytic acids. However, both of these seeds have been proved to increase zinc levels in zinc deficient individuals.

[Reply](#)

Zena

August 9, 2016 at 4:20 am

hi , Do you do skype consultation ?

[Reply](#)

Alan

December 4, 2016 at 12:38 am

I would really appreciate if the letters of your post could be bigger or to be able to magnify the by expanding the screen ..thank you so much

[Reply](#)

Marsha Scheitlin

December 10, 2017 at 6:42 pm

Do you have a reference to verify that Dr David Watts, CEO of Trace Elements Inc, has studied HTMA reports of many women with breast cancer and that he noted that boron and copper seem to stimulate estrogen?

[Reply](#)

Emy

June 20, 2021 at 12:55 pm

More synthesis please

[Reply](#)

shira

February 26, 2018 at 6:20 am

To check for zinc deficiency do you recomend using this zinc specifically (to see if a subject feels any taste): Zinc Status – Ethical Nutrients – 120ml – Liquid
?

[Reply](#)

Dr. Jockers

March 4, 2018 at 8:11 am

Yes that this the one. <https://amzn.to/2oHFlUy>

[Reply](#)

Crystal

September 8, 2018 at 6:20 pm

Could this be a cause for Crohn's disease? I have two sons diagnosed over a year ago, 17 and 21 years old.

Reply

Dr. Jockers

September 11, 2018 at 8:16 am

It could certainly be involved Crystal!

Reply

Janet

May 9, 2019 at 2:53 pm

Hi, I was told by a nutritionist to get zinc only from whole foods but I don't see how this is possible.

I have white spots on my nails and also ridges, decreased sense of smell and taste, hair loss and sinus infection for 3 months now.

What amount of zinc should I start with and can taking zinc supplements cause any loss of smell?

Reply

Dr. Jockers

May 9, 2019 at 7:57 pm

Hi Janet, I am sorry to hear about this. Zinc deficiency can lead to a variety of impaired functions including loss of smell. This article will help you understand the effects of zinc deficiency and offer additional recommendations for supplementation:

<https://drjockers.com/test-zinc-levels-home/>

[Reply](#)

Linda

January 25, 2023 at 9:30 am

Research zinc and quercetin taken together before bed. Better absorption.

[Reply](#)

Barbara medina

July 23, 2019 at 1:34 pm

I have contact dermatitis , allergic to many things including metal, nail adhesive, hair color and many more. Is it safe to take a low dose of zinc? I was told it supports the immune system.

[Reply](#)

Gaz mattocks

September 17, 2019 at 4:20 pm

Hi dr does zinc have a link with anxiety

Thanks

[Reply](#)

Dr. Jockers

September 18, 2019 at 8:53 am

Hey Gaz, Yes, Zinc is a powerful antioxidant and helps inflammation, stress, digestive issues, etc. Correcting a deficiency in zinc is important for brain function and mental health. However, there are many important nutrients for brain health and it is important to correct any nutrient deficiencies. This [article](#) offers more informa-

tion on improving symptoms of anxiety and a **functional health practitioner** can help you customize a health plan.

[Reply](#)

Tersia v Eeden

August 21, 2021 at 1:36 am

I get little sleep

[Reply](#)

Eileen Waldow

August 23, 2021 at 12:29 pm

I recently had my serum zinc level tested and it was high 160 compared to lab normals 44-115. What is the optimal level?

[Reply](#)

Dr. Jockers

August 23, 2021 at 4:43 pm

That is a high level. What is your copper level?

[Reply](#)

Beverly

March 2, 2022 at 2:16 pm

Can you take Zinc if you have Stage 3 Kidney Disease and and also take Eliques? And have High Blood Pressure? Thank you... Beverly

Reply**Dr. Jockers**

March 5, 2022 at 3:43 pm

Yes you can Beverly!

Reply**Melise Rider**

May 6, 2022 at 3:08 pm

Hi I know that I need to take a zinc but every time I take zinc my iron plummets and I know that zinc and iron compete for the same place in the body along with the copper how can I increase my zinc up take without becoming so anemic

Reply**Dr. Jockers**

May 9, 2022 at 3:17 pm

Hello Melise,

I would recommend optimizing your stomach acid levels which are key for absorbing both iron and zinc and eating grass-fed beef. Here is a helpful article:

<https://drjockers.com/10-ways-improve-stomach-acid-levels/>

Reply**Cee**

July 5, 2022 at 11:00 am

Thank you, Dr. J for a fabulous article re zinc ! I learned sooo much from it. All of your articles provide such great education. Keep going ! 😊

[Reply](#)

Dr. Jockers

July 19, 2022 at 9:18 am

Great to hear this!

[Reply](#)

Sylvia

February 28, 2023 at 8:58 pm

Hi Dr. Jockers can I talk to you privately through email

[Reply](#)

Jennifer Camero

March 6, 2023 at 5:38 pm

What is the best zinc to take if you can't take pills please?

[Reply](#)

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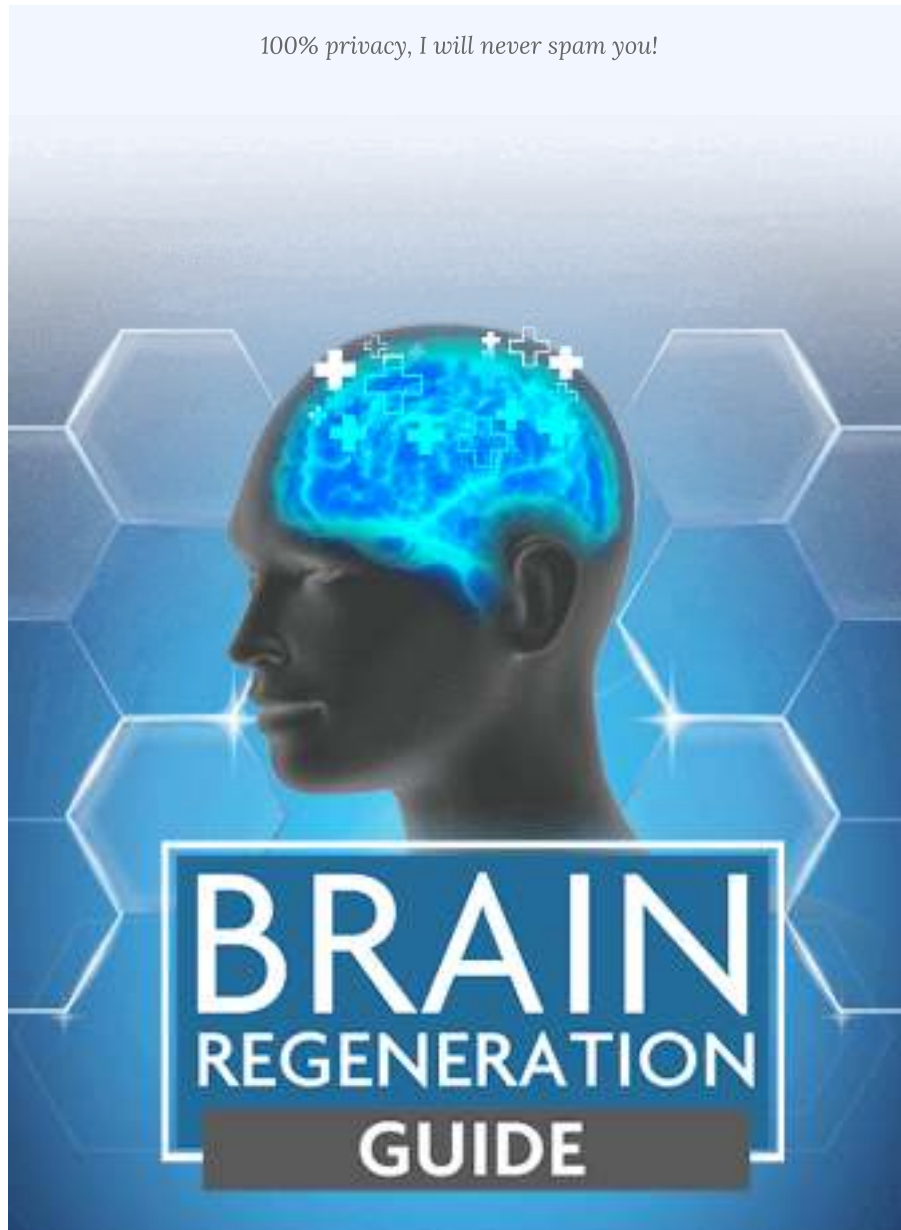
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