



**ZINC LG**



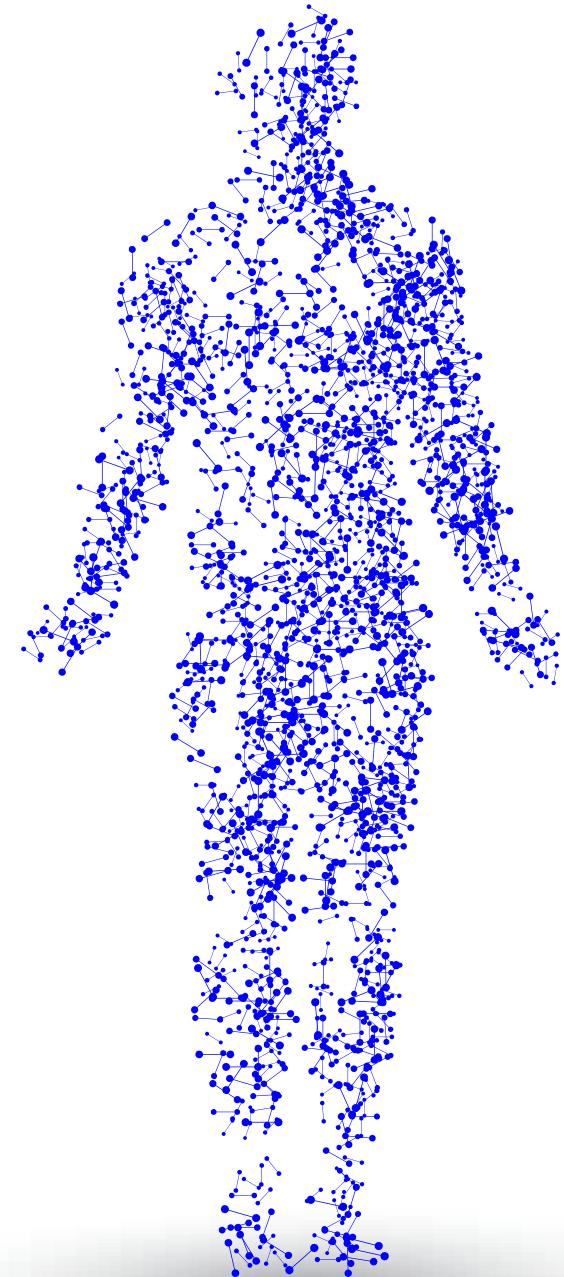
**A Powerful Source of Zinc**  
for Optimal Absorption and Performance

# The Impact of Zinc on the Human Body

**Zinc is a vital nutrient that the human body requires for important biological functions.** Zinc deficiencies are often present in various populations including the elderly, pregnant women and people who adhere to plant-based diets. Low zinc levels may also have adverse effects on male reproduction. Poor absorption might be the cause for these shortages, which may negatively affect human performance and the attainment of optimum zinc levels.

Enter **Zinpro® Zinc LG, a patented zinc solution**, with a distinct molecular design that allows the mineral to be easily absorbed and utilized by the body, which can help improve an individual's overall zinc levels (1).

**Discover how zinc deficiencies impact different populations and how Zinpro Zinc LG can be a valuable resource for any personal supplement regimen.**





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## Zinc, a Vital Micronutrient

**Zinc is a vital micronutrient that plays an essential role in numerous physiological processes in the human body.** It is a co-factor in over 300 enzymes, important in multiple systems including epithelial tissue repair, immune and reproductive. People may have poor absorption of zinc due to components of a regular diet and antagonists like iron and calcium, interactions with phytic acid from cereals or drugs like proton pump inhibitors. A reduction of zinc status in the body can lead to many health problems. **Zinpro® Zinc LG is a powerful source of zinc that can help improve the absorption and utilization of this essential mineral in the body** (2).

**Zinc is Essential for Life**



**21 Million**  
**Elderly  
Individuals in  
the U.S. are at  
Risk of Zinc  
Deficiency**

## Potential for Zinc Deficiency in the Aging Population

Numerous global factors contribute to poor zinc absorption among the elderly population, including genetic predisposition, malabsorption syndromes, stress and dietary patterns. Individuals over 50 years of age experience a decline in gastric acid production, a critical element for zinc absorption from food. This decrease in acid impairs the body's ability to effectively absorb zinc.

Moreover, the utilization of prescription medications, alteration in intestinal physiology, gastrointestinal inflammation and shifts in microbiota composition can further interfere with zinc absorption in this demographic. This could potentially lead to mild-to-severe zinc deficiency and increase the risk of health-related consequences. In addition, as people age, they may adhere to more restrictive diets or exhibit reduced food intake, further exacerbating the problem.

**Maintaining recommended zinc levels in the elderly population is essential due to a variety health implications.** Therefore, people 50 years of age and older are encouraged to consume a zinc-rich diet and take the appropriate supplements necessary to maintain their zinc status (3).

## Zinc Absorption in Individuals Following Plant-Based Diets

Zinc is naturally present in a wide array of dietary sources such as animal-derived options like meat, seafood and dairy products, as well as plant-based alternatives such as legumes, nuts and whole grains. It is essential to acknowledge that differences exist in the body's ability to absorb zinc from these sources. Scientific studies have illustrated that zinc obtained from plant-based foods may exhibit lower bioavailability in contrast to animal-based foods. This disparity may have unintended implications for individuals that have vegetarian or vegan diets, where they rely on plant sources for their zinc intake.

The bioavailability of zinc in plant-based foods is influenced by several factors. Phytates or phytic acids, are naturally occurring compounds found in plant foods that bind to zinc, thereby interfering with its absorption. The presence of this acid can result in a diminished uptake of zinc by the body.

Vegetarians and vegans sometimes take supplements such as calcium or iron, especially women, alongside zinc-rich which can block and reduce the absorption of zinc. Some supplements can act as inhibitory factors, reducing the absorption of zinc. So, it is important to stagger the intake of these nutrients throughout the day to optimize zinc absorption (4).

**Zinc supplementation in individuals adhering to plant-based diets can be a valuable resource for any personal supplement regimen.**



**Up to 5%  
of the U.S.  
Population  
Consume Plant  
Based Diets**



**6.7 Million**  
are Pregnant  
in the U.S.

## Zinc Absorption During Pregnancy

**Zinc deficiency is a common condition among pregnant women, which may have significant ramifications for both mother and child.** During pregnancy, a woman's zinc requirement increases along with an elevated predisposition to zinc deficiency, especially in women living in impoverished conditions, those with limited access to nutrient-rich foods and individuals predominantly adhering to plant-based diets. Various factors may exacerbate zinc deficiency, such as inadequate dietary intake, impediments in nutrient absorption, increased losses of zinc via bodily fluids like urine, perspiration and breast milk.

In addition, the presence of folic acid, calcium and iron in prenatal supplement formulas interferes with the zinc they provide, diminishing the quantity of zinc absorbed from dietary sources, thus potentially causing a zinc deficiency.

Women afflicted by zinc deficiencies are predisposed to complications such as preeclampsia, postpartum hemorrhage and maternal mortality. Notably, zinc insufficiency may exacerbate cognitive impairments and developmental delays in the child (5).

**Zinc Deficiency is a Widespread Condition Among Pregnant Women**



**43 Million  
Men Experience  
Reproductive  
Health Problems**

## **Zinc Absorption and Its Impact on Male Reproductive Health**

Zinc plays a pivotal role in the intricate process of sperm production. Several research studies have indicated that zinc deficiency can lead to decreased sperm production in men. In 2022, the Human Reproduction Update published a meta-analysis that showed a significant reduction, up to 50%, in sperm concentration and total sperm counts among men across the globe. These findings suggest an ongoing decline will continue at an accelerated pace throughout the 21st century.

Sperm production is a complex process that requires the involvement of various enzymes and hormones. Zinc assumes a critical role in the regulation of testosterone, a male sex hormone pivotal for sperm development. Insufficient zinc in the body can cause a reduction in testosterone levels, leading to a decrease in sperm count and motility.

Research has also shown that zinc is essential in the development of the male reproductive system. Zinc's involvement is indispensable for the optimal function of the prostate gland, which produces the seminal fluid that nourishes and protects sperm. In cases of zinc deficiency, there is a heightened risk of prostate enlargement and inflammation, exacerbating the harmful impact on sperm production.

Multiple studies have suggested that zinc supplementation can improve sperm count and motility in men with zinc deficiency. A study by the Journal of Andrology documented men with a low sperm count who received zinc supplementation for six months showed a significant increase in sperm count and motility compared to a placebo group.

It is essential to note that an excessive intake of zinc can exert adverse consequences on sperm production. Elevated zinc levels from conventional supplements can disrupt the balance of other essential minerals in the body, such as copper, potentially impacting sperm quality (6).

Due to the important role of zinc in male reproductive health, it is advisable to consider zinc supplements with superior bioavailability, ensuring optimal absorption by the body while mitigating interference with other essential minerals that affect sperm production.

**Zinc Deficiency Can Lead to a Decrease  
in Sperm Production**



**Zinc Supports Overall Health and Wellbeing in those with Acrodermatitis Enteropathica**

## **The Benefits of Zinpro® Zinc LG in People with Zinc Absorption Issues**

Thanks to its unique molecular design, **Zinpro Zinc LG is readily absorbed and efficiently metabolized, making it an excellent source of zinc for restoring levels in the body helping to support overall health and wellbeing.**

Research conducted at Limerick University in Ireland demonstrated that Zinpro Zinc LG uses amino acid transporters for absorption, which makes it effective in individuals with Acrodermatitis Enteropathica. These individuals cannot absorb zinc due to a genetic mutation affecting regular gut cell di-metal transporters. Correcting this zinc absorption issue is crucial, as it can be life threatening.

**Zinpro Zinc LG is an excellent source of zinc due to its unique, soluble and stable properties, ensuring efficient delivery to human organs, even in challenging cases (7).**

# Addressing Zinc Absorption Challenges for Enhanced Performance

Zinpro® Zinc LG amino acid complex is a unique form of zinc known for its high bioavailability and ease of absorption by enterocytes, the cells lining in the human gut. Its unique molecular design enables it to transverse the body through amino acid transporters without encountering other nutrients that may affect absorption.

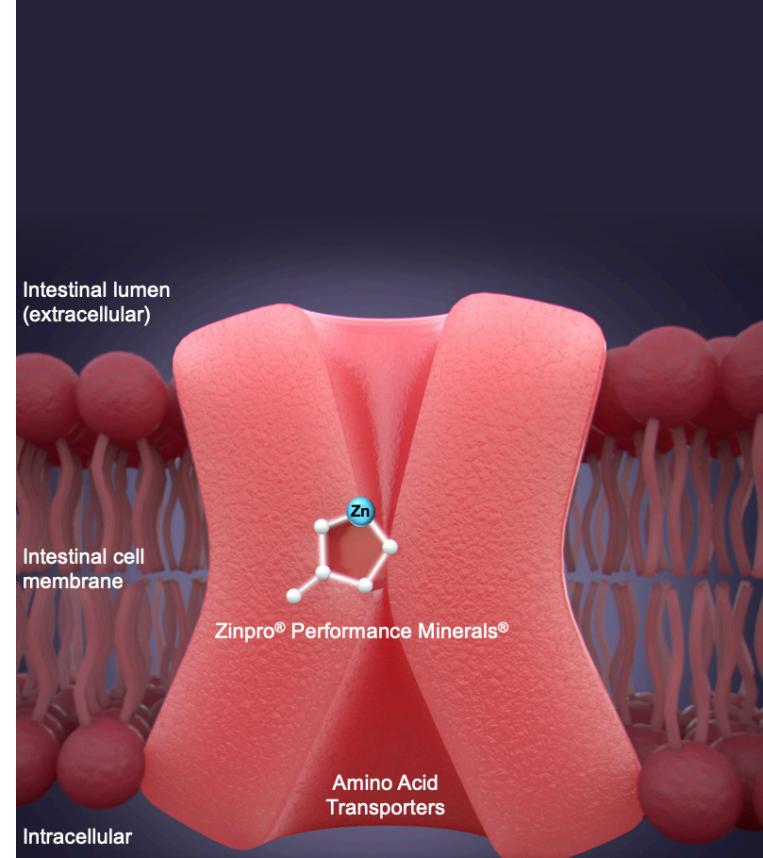
What makes Zinpro Zinc LG different is that it has exceptional stability and solubility, even in the presence of low pH in the gastrointestinal tract. It retains its structural integrity until it is absorbed, avoiding antagonists like chelating agents, such as phytic acid.

Sometimes in diets, supplements like calcium, iron, copper, folic acid and common medications like proton pump inhibitors can interact with and reduce zinc status. Zinpro Zinc LG is unaffected by these compounds, ensuring a good trace mineral balance.

Once absorbed and introduced into the bloodstream, this unique molecule persists in circulation for an extended duration compared to conventional minerals, effectively delivering zinc to the cells that need it. This process is a novel way of absorbing, utilizing and metabolizing zinc in the human body.

Zinpro has a patented blend of two advanced zinc mineral complexes, each one binding a single zinc atom to one amino acid. This results in a zinc source that meets four important criteria: solubility, stability, absorbability and metabolic availability. It is the only zinc source known to use amino acid transporters within human enterocytes (gut cells), instead of the conventional dimetal transporters, making it a standout option in the market.

**The exceptional absorption and metabolic availability of Zinpro Zinc LG make it an excellent zinc supplement that promotes overall health and wellbeing by providing the body with essential zinc (8).**



## Biological Efficacy

- Novel Absorption
- Novel Uptake
- Novel Metabolism



1

Zinpro Zinc LG reaches the intestinal lining



2

Utilizes a unique pathway for absorption

Amino Acid Transporters



3

Remains in circulation longer than traditional minerals

## Navigating Zinc Entry: Zinpro® Zinc LG and Amino Acid Transporters

Zinpro Zinc LG is a unique 1:1 zinc chelate compound made up of two amino acids. Bioavailability studies have shown that this amino acid combination leads to superior absorption compared to various zinc amino acid complexes and inorganic zinc sources. The difference is that it uses amino acid transporters, like those used for essential amino acids, rather than conventional di-metal transporters. This unique feature enables Zinpro Zinc LG to avoid interactions with other minerals, enhancing its readiness for absorption by the body.

For zinc to be utilized by humans, it must first reach the small intestine, be absorbed by enterocytes or intestinal cells, and then enter the bloodstream. From there it will be delivered to the cells that need it.

**Zinpro research has identified the specific amino acids used in Zinpro Zinc LG as vital for exceptional mineral absorption.** This form of zinc remains intact even in the acidic, low pH environment of the stomach, avoiding antagonists and interactions that can affect other mineral sources. Furthermore, Zinpro Zinc LG undergoes a distinctive metabolic process, which allows it to stay in circulation longer than conventional minerals (9).

# Unlocking the Power of Zinpro® Zinc LG

**Zinc is a vital micronutrient that plays an essential role in numerous physiological processes within the human body.** It serves as a co-factor for over 300 enzymes, with particular importance in various systems such as immune function, epithelial tissue repair and reproduction. Given that the body lacks zinc reserves accessible during times of low zinc status, a consistent dietary supply is imperative.

Numerous factors can influence the availability of dietary zinc including antagonistic nutrients in the diet, age-related declines in absorption, folic acid and plant-based dietary choices. In some instances, zinc supplementation becomes necessary to meet the body's zinc requirements.

Certain populations within the United States face a heightened risk of inadequate zinc absorption:

- Elderly
- Vegetarians and vegans
- Pregnant women
- Males of reproductive age

**Understanding the differences in zinc supplements and how they are absorbed by the body is crucial for choosing the best supplement to meet individual needs.**





## Restore the Zinc Levels in Your Body with Zinpro® Zinc LG

Inorganic zinc can interact with antagonists, leading to poor absorption. Similarly, organic complexes lacking evidence of absorption through the amino acid transporter will have the same problem.

Zinpro Zinc LG amino acid complex, a 1:1 chelate composed of two amino acids, demonstrated superior absorption in bioavailability studies when compared to various zinc amino acid complexes and inorganic zinc sources using human enterocytes or gut cells.

Proven to be an outstanding zinc source in studies, **Zinpro Zinc LG is unique, soluble and has stable properties, which enable the efficient delivery of zinc to human organs, even in complex cases.**



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