# Celiac, Zinc, and Tobacco Use

The researchers in the Mayo Clinic journal article studied 309 men and women between January 1, 2000, and October 21, 2014, with an average age of just over 46. All had been tested and newly diagnosed with celiac.

Several micronutrients were low in each patient, but a zinc deficiency eclipsed them all. In fact, 59.4% of the patients were found to be zinc deficient, and to varying but lesser degrees, deficiencies in the other nutrients, including copper.

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Zinc is the second most abundant trace mineral in our bodies. We don't store it so we need to ingest zinc regularly. Zinc is needed for the proper function of more than 100 enzymes in your body. Zinc helps us digest food and synthesize proteins, vitamins, and other minerals.

> *Our study suggests that the presentation of celiac disease has changed from the classic weight loss, anemia and diarrhea, with increasing numbers of patients diagnosed with nonclassical symptoms. Micronutrient deficiencies remain common in adults, however, and should be assessed." Assessment should include vitamin D, iron, folic acid, vitamin B12, zinc and copper.*
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> *Dr. Bledsoe, the study's primary author*

Zinc deficiency was observed most frequently at diagnosis, the study says, with 59.4% of patients having a deficiency. Other deficiencies included iron, vitamin D, copper, vitamin B12 and folate.

**Related: *Gluten Intolerance, Wheat Allergies, and Celiac Disease – It's More Complicated Than You Think***

Zinc is absorbed throughout the small intestine. Celiac disease damages the small intestinal. It is also very likely that zinc is needed for gluten digestion. If that's true, a zinc deficiency would create a negative feedback loop with gluten digestion issues.

Vitamin D, copper, zinc, and iron are imperative for a healthy microbiome. And, gut bacteria play a key role in how we utilize copper, zinc, iron, and B vitamins. Smoking inhibits the uptake of minerals including the aforementioned while it reduces vitamin levels including vitamin D and B vitamins.

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People who smoke alter their gut microbiomes substantially. Studies show smoking causes many vitamin and mineral deficiencies. Tobacco users do not digest food as well, and an inability to properly digest gluten is more likely in someone who smokes.

In my experience, people who are dealing with autoimmune disease cannot digest gluten well. Autoimmune disease is synonymous with an impaired gut microbiome.

## Additional Sources:

- *Celiac Disease and Nutrient Deficiencies: How Are Your Zinc Levels?* – Nourished Health
- *Micronutrient deficiencies common at time of celiac disease diagnosis* – Science Daily
- *Powerful research tool uncovers link between gut microbiota and copper* – UCalgary UToday
- *Zinc Uptake by Lactic Acid Bacteria* – Hindawi