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Viewpoint

# Do Pregnant Mothers Need to Intake Zinc Supplementation During the COVID-19 Pandemic?

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**Running Title** Do Pregnant Mothers Need to Intake Zinc During the COVID-19?

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## ABSTRACT

Zinc is an essential trace element for the healthy life of mothers during pregnancy. Besides it plays a critical role during infancy. All over the world zinc deficiency during pregnancy is a common problem. Since the immune system needs sufficient zinc for protective effects, especially in COVID-19 infection. Therefore, in this letter, the author has a special proposal to pay attention to zinc deficiency.

**Keywords:** Pregnancy, Zinc, COVID-19, Infant, Fetus

Micronutrient deficiency during pregnancy is an important problem in developing countries [1]. During pregnancy micronutrient deficiency especially zinc in all cultures and socioeconomic levels is a common issue [2]. Zinc deficiency in this period is still an unsolved concern that may cause adverse effects on pregnancy outcomes [3]. Maternal zinc deficiency in this period may cause infant complications such as preterm birth, low birth weight, influence on passive or active immunity in infants, and increased infant morbidity and mortality [2, 3].

Recommended daily allowance of Zinc for pregnant mothers is 11mg/day [4]. Pregnant mothers are more at risk for zinc deficiency since, they do not intake basic food requirements from their meals due to their diet being characterized by staple foods (cereals and legumes) with a small amount of food from animal sources or even vegetables and fruits. The best sources of zinc are seafood, red meat, poultry, and nuts which are so expensive and for some mothers inaccessible especially in middle and low-income countries [3, 5].

Among the dietary micronutrients, zinc is an essential element that plays different roles in biological processes

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at the cellular and molecular levels. Zinc is required for the structural and catalytic function of hundreds of key regulatory enzymes. It is an essential trace element for the appropriate functioning of the immune system. Zinc deficiency may have impaired function of the immune system and consequently increase the risk of viral, fungal, and bacterial infection [2, 6]. During pregnancy, zinc deficiency decreases the level of antibody and lymphocyte proliferation, which affect subsequent generation [6]. Therefore, it is necessary to ensure the adequacy of zinc intake during the COVID-19 pandemic. Zinc element prevents the entry of the virus with changes in the strengthening of the epithelium and cilia in the respiratory system, prevents the proliferation of the virus, strengthens the immune system, prevents oxidative activities, and reduces inflammation [7]. A previous study showed that level of zinc during pregnancy correlated with a higher immune response against infection [8]. An optimal diet can improve people's health, and as a result, it may reduce the risks and consequences of COVID19 infection [9].

During the COVID-19 pandemic micronutrient deficiency especially zinc deficiency reported by Bahat et al. in turkey. This micronutrient deficiency may contribute to the decreased immune response to COVID-19 infection. This infection might cause adverse pregnancy outcomes such as preterm birth and increase maternal and fetal morbidity and mortality [7, 10].

The effects of covid-19 infection on pregnant women and their fetuses are unknown. Considering the protective role of zinc in controlling inflammation, oxidative stress, and fighting against viral infections, it is necessary to ensure that pregnant women take enough zinc during the corona pandemic. Taking Zinc supplementation during pregnancy is beneficial for both mothers and infants especially during pandemics to prevent infection.

## Ethical Considerations

### Compliance with ethical guidelines

There were no ethical considerations to be considered in this research.

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### Conflict of interest

The author declared no conflict of interest.

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