



Key words: Coronavirus, Immunity, Healthy eating, Physical activity

1. Background

Coronavirus disease 2019 (COVID-19) is a disease discovered in 2019 caused by SARS-CoV-2 virus which affects the respiratory system. Among 99 study subjects, 83% manifested with fever, 82% cough, 59% loss of taste and smell, 31% short breath, 75% severe pneumonia and 11% died (Panyod, Ho & Sheen, 2020). Currently, there is no cure. Wearing of face masks, handwashing, social distancing, and vaccination are some of the strategies taken world widely to prevent the virus. Although nutrition is not among the strategies above, disregarding its role in the fight against the virus can pose hazardous health repercussions. This fact sheet presents evidence-based nutrition advice in the context of COVID-19.






2. COVID-19 impact on Nutrition

- During lockdowns, people have ↑energy intake and ↓ energy expenditure.
- Unhealthy diet and physical inactivity lead to overweight and obesity.
- Obesity is linked to chronic conditions such as type 2 diabetes, cardiovascular diseases (CVDs) and certain cancers.
- Loss of taste and smell lead to low food intake, undernutrition, and weak immunity (Panyod, Ho, & Sheen, 2020).
- Chronic condition/undernutrition + COVID-19 = severe complications & death.

3. Immune-supportive nutrients

- No food or dietary supplement can prevent or cure SARS-CoV-2 (Aman, 2020).
- **Zinc, Selenium, vitamin A, C, D and E** are micronutrients that have potential immune boost and antiviral properties (Muscogiuri, et. al., 2020).
- **Zinc** helps maintain immune function. Source: pumpkin seeds, sesame seeds, beans, and lentils.
- Selenium, vitamin A, C, and E are **antioxidants** that increase T & B-cell subsets.
- **Vit. A** source: sweet potatoes, carrots, and green leafy vegetables.
- **Vit. C** source: red peppers, broccoli, kiwi, mangoes, grapes, and citrus fruits.
- **Vit. E** source: vegetable oils, nuts, seeds, spinach, and broccoli.
- **Vit. D** has anti-inflammatory properties. Source: 90% from sunlight, 10% from diet: fish, liver, egg yolk and dairies.

4. Dietary Recommendation

- **Eat variety** of locally available, fresh, unprocessed food from each food group for adequate supply of nutrients (de Faria Coelho-Ravagnani et al., 2021). 
- **Dietary supplements** be taken under medical supervision when deficient, at risk, or sick. Beware of toxicity. 
- **Portion sizes:** overeating leads to weight gain, obesity. 
- **Food safety:** 20 seconds handwashing; separate raw from cooked; cook thoroughly; store <5 °C or >60 °C: to prevent foodborne diseases that can weaken immunity. 
- **Alcohol intake** reduced: men < 2 drinks; women < 1 drink daily. Excess alcohol weakens immunity. 
- **Breastfeed:** exclusively until 6 months age and continue until 2 years. COVID-19 positive mothers do not stop. Antibodies from breast milk protect child from viral infections (WHO, n.d.). 
- **Exercise:** for >30 minutes 5 days a week or be physically active by walking, climbing stairs, or doing household chores. This helps to manage weight, reduce risk of chronic diseases. 
- **Early treatment of infections:** illness reduces food intake, poor nutrition and reduce ability to fight infections 

5. Conclusion

Covid-19 lockdowns cause physical inactivity and under/overeating resulting in undernutrition, obesity, and chronic diseases. Patients with undernutrition or chronic diseases have weak immunity and often have severe COVID-19 complications or even die. Zinc, selenium, vitamin A, C, D, and E have potential immunomodulatory and antiviral activities against SARS-CoV-2. They are found in citrus fruits, green leafy vegetables, meat, and dairy products. Diet could be a complementary preventive therapy for respiratory infections; however, this hypothesis warrants experimental validation specifically in COVID-19 patients.

References

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