

California Grapes Support Immune Function and Overall Health

Supporting immune function through a healthy diet has become a focus for government officials, registered dietitians, and the medical community during the COVID-19 pandemic. One key dietary recommendation is to eat more fruits and vegetables each day to improve immune function and prevent heart disease and diabetes. “How Your Diet Can Help Flatten the Curve” by two professors from the Tufts University Friedman School of Nutrition Science and Policy and a former Secretary of Agriculture provides important facts on how a healthy diet contributes to improved health overall.¹ Excerpts include:

- Higher intakes of specific nutrients appear to boost the immune system, while low intakes lead to less effective immune responses and higher susceptibility to infection.
- Beyond the measures taken to fight the virus in the short term, long-term impacts must be reduced. Preventing and lessening the severity of existing cardiovascular disease and diabetes should be a key tactic. Among different risks and preventive approaches for these diseases, nutrition tops the list.
- A recent multi-investigator study estimated that about 45 percent of all cardiovascular disease and diabetes deaths are directly attributable to poor diet. Another recent study estimated that poor diet kills about 530,000 Americans annually; equating to nearly 1,500 deaths every day.

Studies have found grapes to be both heart healthy and linked to benefits in multiple areas of health, including support for immune function. Some specifics:

- Fresh, whole grapes contain over 1,600 natural plant compounds including antioxidants and other polyphenols, both of which have been shown to protect the health and function of cells which help protect against diseases.
- Grapes are a natural source of the polyphenols resveratrol and quercetin, which studies suggest may positively influence immune function.^{2 3 4}
- Grapes are a good source of vitamin K which research suggests may help support lung health during COVID-19.⁵
- Grapes are hydrating, containing about 82 percent water. Hydration is critical to optimizing immune response.

¹<https://www.cnn.com/2020/03/27/opinions/healthy-diet-immune-system-covid-19-mozaffarian-glickman-nikbin-meydani/index.html>.

² Malaguarnera, L. (2019). Influence of resveratrol on the immune response. *Nutrients*. 11(5).

³ Filardo, S., Di Pietro, M., Mastromarino, P., & Sessa, R. (2020). Therapeutic potential of resveratrol against emerging respiratory viral infections. *Pharmacology & Therapeutics*, 214, 107613.

⁴ Brito, J.C.M., Lima, W.G., Cordeiro, L.P., & Da Cruz Nizer, W.S. (2021). Effectiveness of supplementation with quercetin-type flavonols for treatment of viral lower respiratory tract infections: systemic review and meta-analysis of preclinical studies. *Phytotherapy Research*, 2021: 1-13.

⁵ Dofferhoff, A.S., Piscaer, I., Schurgers, L.J., Visser, M.P.J., et al. (2020). Reduced vitamin K status as a potentially modifiable risk factor of severe coronavirus disease. *Clin Infect Disease*. DOI: 10.1093/cid/ciaa/258.

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- Grapes are heart healthy. Nutritional studies have shown that adding grapes to your diet every day supports a healthy heart and may reduce certain risk factors for heart disease.⁶
- Grapes are a low glycemic index fruit and can fit into balanced diabetic diets. A recent study found that eating grapes was associated with a lower risk of type 2 diabetes, unrelated to their low glycemic index.⁷
- Grapes may help support a healthy brain. In a preliminary study conducted at UCLA, researchers found that consuming a little over 2 cups of grapes every day preserved healthy metabolic activity in regions of the brain associated with early-stage Alzheimer's disease.⁸
- Grapes may help protect against certain cancers, such as colon cancer. Researchers found that consuming about 2½ cups of grapes every day for two weeks showed a significant reduction in the expression of certain target genes responsible for promoting tumor growth in the colon.⁹

⁶ Fernandez, M.L., Barona, J. (2016). Grapes and atherosclerosis. In J.M. Pezzuto (Ed.) Grapes and Health (pp. 53- 76). Springer. DOI 10.1007/978-3-319-28995-3_3.

⁷ Muraki, I., Imamura, F., Manson, J.E., Hu, F.B., Willett, W.C., van Dam, R.M., Sun, Q. (2013). Fruit consumption and risk of type 2 diabetes: results from 3 prospective longitudinal cohort studies. *BMJ* 2013; 347:f5001 doi: 10.1136/bmj.f5001.

⁸ Lee, J.K., Torosyan, N., Silverman, D.H. (2017). Examining the impact of grape consumption on brain metabolism and cognitive function in patients with mild decline in cognition: A double-blinded placebo-controlled pilot study. *Experimental Gerontology*, 87 (Pt A), 121-128. <https://doi.org/10.1016/j.exger.2016.10.004>.

⁹ Nguyen, A.V., Marinez, M., Stamos, M.J., Moyer, M.P., Planutis, K., Hope, C., Holcombe, R.F. (2009). Results of a phase I clinical trial examining the effect of plant-derived resveratrol and grape powder on Wnt pathway target gene expression in colonic mucosa and colon cancer. *J. Cancer Mgt and Research*, 1, 25-37.