



Polyphenols and Immunity

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POLYPHENOLS

Polyphenols are organic compounds with specific chemical ring structure

They are found in plants and plant foods, especially in fruits and vegetables

Plants use them to defend themselves against radiation or pathogens

Thousands of phenolic compounds have been identified and many of them are exerting beneficial health outcomes



POLYPHENOLS

Polyphenols can:

- + Reduce common cold symptoms and the number of days with symptoms
- + Reduce the number and severity of upper respiratory tract infections (URTI)
- + Reduce the number of URTI related sick days
- + Modulate immune cell activities and their proliferation
- + Support to fight Influenza A

REFERENCES – some examples

- A. Derksen et al., “Antiviral activity of hydroalcoholic extract from Eupatorium perfoliatum L. Against the attachment of influenza A virus,” J. Ethnopharmacol., vol. 188, pp. 144–152, 2016, doi: 10.1016/j.jep.2016.05.016.
- C. Esposito et al., “A standardized polyphenol mixture extracted from poplar-type propolis for remission of symptoms of uncomplicated upper respiratory tract infection (URTI): A monocentric, randomized, double-blind, placebo-controlled clinical trial,” Phytomedicine, vol. 80, no. October 2020, 2021, doi: 10.1016/j.phymed.2020.153368.
- D. C. Nieman et al., “Quercetin reduces illness but not immune perturbations after intensive exercise,” Med. Sci. Sports Exerc., vol. 39, no. 9, pp. 1561–1569, 2007, doi: 10.1249/mss.0b013e318076b566.
- M. P. Nantz et al., “Consumption of cranberry polyphenols enhances human $\gamma\delta$ -T cell proliferation and reduces the number of symptoms associated with colds and influenza: A randomized, placebo-controlled intervention study,” Nutr. J., vol. 12, no. 1, pp. 1–9, 2013, doi: 10.1186/1475-2891-12-161.
- S. A. Heinz, D. A. Henson, M. D. Austin, F. Jin, and D. C. Nieman, “Quercetin supplementation and upper respiratory tract infection: A randomized community clinical trial,” Pharmacol. Res., vol. 62, no. 3, pp. 237–242, 2010, doi: 10.1016/j.phrs.2010.05.001.
- S. Ding, H. Jiang, and J. Fang, “Regulation of immune function by polyphenols,” J. Immunol. Res., vol. 2018, 2018, doi: 10.1155/2018/1264074.
- T. Magrone et al., “Olive Leaf Extracts Act as Modulators of the Human Immune Response.,” Endocr. Metab. Immune Disord. Drug Targets, vol. 18, no. 1, pp. 85–93, 2018, doi: 10.2174/1871530317666171116110537.
- U. Kalus, A. Grigorov, O. Kadecki, J. P. Jansen, H. Kiesewetter, and H. Radtke, “Cistus incanus (CYSTUS052) for treating patients with infection of the upper respiratory tract. A prospective, randomised, placebo-controlled clinical study,” Antiviral Res., vol. 84, no. 3, pp. 267–271, 2009, doi: 10.1016/j.antiviral.2009.10.001.

SUMMARY

A polyphenol-rich supplement can be a good way to support the immune system especially if the consumption of fruits and vegetables is low.

The product's benefits on immunity and its safety should be proven by clinical research.