

Immune response to H. Pylori by Astaxanthin (abstract)

## **Effect of antioxidants on the immune response of Helicobacter pylori.**

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Antioxidants are substances capable of inhibiting oxidation. In chronic diseases, inflammatory response cells produce oxygen free radicals. Oxygen free radicals cause DNA damage, and this may lead to gene modifications that might be carcinogenic. Chronic Helicobacter pylori infection causes the production of DNA-damaging free radicals. In recent years, various groups have studied the effects of antioxidants, especially on H. pylori-associated gastric cancer. In most of the studies, it has been shown that H. pylori infection does affect the level of antioxidants measured in the gastric juice, but there are also controversial results. Recent experimental studies, both in vivo and in vitro, have shown that vitamin C and astaxanthin, a carotenoid, are not only free radical scavengers but also show antimicrobial activity against H. pylori. It has been shown that astaxanthin changes the immune response to H. pylori by shifting the Th1 response towards a Th2 T-cell response. Very few experimental studies support the epidemiologic studies, and further studies are needed to describe the effect and the mechanism of antioxidants in the H. pylori immune response.

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