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The role of flax seeds in Hashimoto's thyroiditis

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Hashimoto’s thyroiditis is an autoimmune disease where there is the destruction of thyroid cells caused by an antibody-mediated immune disorder. In developed countries, this is the cause of hypothyroidism in contrast to iodine deficiency-mediated hypothyroidism that is observed in developing countries. This disease occurs due to antibodies attacking the thyroid cells, thereby causing progressive fibrosis which is the formation of a compact mass in the upper pulmonary lobes, leading to scarring of the lungs. According to scientific studies, tissues that are affected by Hashimoto’s thyroiditis are more likely capable of producing an increased amount of cluster of differentiation 95 (CD95) proteins which leads to apoptosis of the cells. Therefore, managing this disease requires both intervention of medicine and diet. A diet that focuses on anti-inflammatory compounds such as flax seeds can notably decrease the levels of the inflammatory marker C-reactive protein (CRP). According to studies, there are two inflammatory markers, namely CRP and tumour necrosis factor-alpha (TNF-α) which can be decreased with the presence of flax seed in the diet. Flax is a flowering plant (Linum usitatissimum) widely found in temperate regions. The bioactive agents of flax seed that are responsible for anti-inflammatory action are alpha-linolenic acid (ALA), omega-3 fatty acid and flavonoids. All three bioactive agents have anti-inflammatory properties which help in maintaining the disease condition. Flax seed contains zinc and vitamin E, primarily as gamma-tocopherol in a fair amount which has anti-inflammatory characteristics. Zinc has the ability to inhibit T helper 17 (Th17) lymphocytes which are associated with the development of autoimmune diseases, plays a role in T cell differentiation that is important for a balanced immune system as well as reduces the level of inflammation. Flax seeds are also a rich source of lignans which are polyphenolic compounds with a wide spectrum of biological functions including anti-inflammation, antioxidant and antitumour. Lignans are converted by intestinal bacteria into enterolignans, enterodiol and enterolactone, which help in lowering the risk of thyroid cancer as well as cardiovascular disease. Therefore, flax seeds along with other anti-inflammatory sources can help maintain the health of people with Hashimoto’s thyroiditis.

Keywords: Flax seed, Anti-inflammation, Hashimoto's thyroiditis, Healthy diet, Hypothyroidism, Bioactive agents

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