

## SUPPLEMENTATION FOR TENDINOPATHIES

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**Abstract:** In this work we will address inflammation in the tendons, also called tendinopathies or tendinitis, where we aim to describe the treatment with dietary supplements, which among other approaches is a great ally for the treatment of pain and good evolution of patients with tendinitis, both acute and chronic, and supplementation may be one of the multiple treatments together with other methods for clinical improvement of the patient. The incidence of tendinopathy of the lower limbs is 10.52 per 1000 person-years, which even exceeds the incidence of osteoarthritis (8.4 per 1000 person-years); 1%-2% of adults (18-65 years of age) experience lower extremity tendinopathy during their lifetime. The lifetime prevalence of Achilles tendinopathy in athletes was 23.9% compared to 5.9% in the general population (Millar NL. 2021). Numerous therapeutic measures are performed, including non-steroidal anti-inflammatory drugs, physiotherapy, eccentric stretching, adequate physical activity, corticosteroids, shock wave therapy, sclerotherapy, surgery, regenerative therapies. TENDOFORTE is a specific supplement for tendons and ligaments, it activates tissue metabolism for its natural renewal, being a great therapeutic option in conjunction with physiotherapy, cryotherapy, shock waves and others (CHANG EY. 2015). TENDOFORTE is an effective nutritional product for tendons and ligaments. They are Bioactive Collagen Peptides, specifically developed to increase the health and quality of ligaments and tendons. Preclinical and clinical studies show positive effects, especially when combined with physical activity. The risk of injury decreases considerably as flexibility improves.

**Keywords:** Supplementation. Tendinopathies. Treatment.

## INTRODUCTION

Tendinopathy is the term used for persistent tendon pain, loss of function and is related to mechanical loading and is used for any problems with the connective tissue surrounding the tendon (Emanuel Azizi et al. 2010). Tendinopathy, which is a chronic clinical syndrome typically defined by longstanding pain and tendon dysfunction, is a common and burdensome condition that is prevalent among the general public and athletes. The aim of this article is to address supplementation for tendinopathies, in addition to presenting how they act.

## OBJECTIVES

Addressing the new method of treatment for tendinopathy through supplementation.

## METHODOLOGY

This work done through a monographic study, a descriptive research to present the results on supplementation in tendinopathies.

## RESULT AND DISCUSSION

The incidence of tendinopathies is 10.52 per 1000 people per year, the different types of tendinopathies vary in the general population, being more frequent in the shoulder 5.5% usually in volleyball, handball and tennis players; hip 4.2%; foot or ankle 2.4% usually due to excessive load on the tendon, which can affect athletes who do a lot of jumping; knee 1.6% due to excessive load, many repetitions, technique errors, which could be in bodybuilding and running, and elbow 0.6% due to repetitive movement such as in tennis players. (WEIIS LJ et al. 2018)

According to MATTHIAS CHIQUET (2003), the tendon itself is the final structure formed by numerous tendon fascicles, held together by a loose epithelium, a layer of tissue called the epitenon, which contains

blood vessels and larger nerves and is a potential source of new fibroblasts during periods of tendinous growth and repair. The main structural protein of the tendon is type I collagen, which represents 65%-80% of the dry weight of the tendon. Types I and III collagens are part of the fibrillar collagen family and play an important role in the longitudinal transmission of force during locomotion. (MATTHIAS CHIQUET. 2003)

Tendinitis may have the following anatomopathological classification: Tendinitis: Acute alteration with vascular damage and inflammatory response, Tendinosis: Intratendinous degeneration with collagen disorientation and/or focal necrosis, Paratendinitis: Inflammation of the external layer without internal alteration of the tendon. (Ryösä A et al. 2017). Compared to healthy tendons, tendinopathies show intense disorganization and separation of collagen fibrils, where type III collagen contributes to weakness in the diseased tendon. Numerous therapeutic measures are performed, including non-steroidal anti-inflammatory drugs, physiotherapy, eccentric stretching, adequate physical activity, corticosteroids, shock wave therapies, sclerotherapy, surgeries, regenerative therapies.

A new treatment option is effective supplementation for tendinopathies, rich in specific collagen bioactives, rich in essential amino acids such as arginine and glutamine, which are very important for muscle metabolism, which includes the structure of ligaments and tendons. Studies show that TENDOFORTE supplementation increases RNA expression, type I and III collagen biosynthesis, proteoglycans and elastin, increases levels of glycine, proline, hydroxyproline and hydroxylysine in circulating blood, in addition to the functional effects where there is an increase in tensile load, ligament strength and stiffness that increased

after supplementation with collagen peptides (Kannus P. 2009). In some clinical studies nutritional supplementation improves the functional property of the ankle in athletes with chronic instability, ankle sprains were significantly reduced and patients who took supplementation the results were superior to those who took placebo. With regard to pain, supplementation increases vascularity and improves symptoms in combination with structured exercises in patients with Achilles tendinopathy. An in vitro experiment revealed a significant increase in RNA expression and biosynthesis of collagen type I, collagen type III, proteoglycans and elastin in both ligament and Achilles tendon fibroblasts, which were isolated by enzymatic digestion and seeded in monolayer cultures. in a humidified incubator (SCHUCK M et al. 2013). In another randomized study, 40 volunteers do a 14-week program with resistance exercises, one group receives placebo and the other 5g of SCP, there was an increase in the cross-sectional area, tendon stiffness, muscle strength and thickness of the plantar flexors increased in relation to to the placebo group. Another in vivo study demonstrated that ingestion of collagen hydrolyzate increased circulating blood levels of glycine, proline, hydroxyproline, and hydroxylysine. In this investigation, the functional effects of collagen supplementation were examined using a mechanical approach (SHAW et al. 2017). The study demonstrated that the tensile load of the investigated ligaments, the material properties in terms of stiffness and maximum tensile strength increased after collagen peptide supplementation.

## CONCLUSION

Tendinopathy is not an isolated injury and must be analyzed within the joint and muscle context, the treatment must be individualized and multimodal, collagen supplementation reduces the incidence of injuries and accelerates the return to sports training,

TENDOFORTE is a specific supplement for tendons and ligaments, activates tissue metabolism for its natural renewal, being a great therapeutic option in conjunction with physiotherapy, cryotherapy, shock waves and others.

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