

# Increased versican content is associated with tendinosis pathology in the patellar tendon of athletes with jumper's knee.

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## Abstract

Expansion of the extracellular matrix is a prominent but poorly characterized feature of tendinosis. The present study aimed to characterize the extent and distribution of the large aggregating proteoglycan versican in patients with patellar tendinosis. We obtained tendon from tendinopathy patients undergoing debridement of the patellar tendon and from controls undergoing intramedullary tibial nailing. Versican content was investigated by Western blotting and immunohistochemistry. Microvessel thickness and density were determined using computer-assisted image analysis. Markers for smooth muscle actin, endothelial cells (CD31) and proliferating cells (Ki67) were examined immunohistochemically. Western blot analysis and immunohistochemical staining revealed elevated versican content in the proximal patellar tendon of tendinosis patients ( $P=0.042$ ). Versican content was enriched in regions of fibrocartilage metaplasia and fibroblast proliferation, as well as in the perivascular matrix of proliferating microvessels and within the media and intima of arterioles. Microvessel density was higher in tendinosis tissue compared with control tissue. Versican deposition is a prominent feature of patellar tendinosis. Because this molecule is not only a component of normal fibrocartilagenous matrices but also implicated in a variety of soft tissue pathologies, future studies should further detail both pathological and adaptive roles of versican in tendons.

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