

Micro- and nano-mechanics of osteoarthritic cartilage: The effects of tonicity and disease severity

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Osteoarthritics(OA) is a type of joint disease that results from breakdown of joint cartilage and underlying bone. The most common symptoms are joint pain and stiffness. OA is characterized by the loss of proteoglycans(PGs) and hence glycosaminoglycans(GAG) content via enzymes as well as failure of the collagen network and subsequently loss of cartilage stiffness. To discover the mechanical function of GAGs and collagen fibers. They major use the nanoarthritic to get the micro- and nano-scale mechanic profile of OA cartilage. Finally, they found that the micro- and nano-scale mechanical of OA dependent on the tonicity of medium and stage of disease. Experiments results suggests that the sensitivity of mechanical properties vanish as GAGs lose.