

# The frequency of cartilage lesions in non-injured knees with symptomatic meniscus tears: results from an arthroscopic and NIR- (near-infrared) spectroscopic investigation

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## Abstract

**Introduction** Are symptomatic tear injuries to the menisci of the knee frequently or always associated with cartilage damage to the corresponding articular surfaces and other joint surfaces, respectively?

**Methods** A total of 137 patients (medial  $n=127$ ; lateral  $n=10$ ) underwent a meniscus resection. These patients showed no signs of a clear radiographic arthrosis and no MRI-detectable cartilage lesions > grade II. Traumatic injury was ruled out with a thorough medical history. The indication for operation was made exclusively on the basis of distinct, clinically apparent meniscus signs. In addition

to the ICRS classification, all articular surfaces were examined spectroscopically (NIRS, near-infrared spectroscopy). **Results** In 76.6% ( $n=105$ ) of all knees examined, clear cartilage damage (ICRS-grade III/IV) was found. For 43.8%, these were in the area of the patella, while for 34.3% they were in the area of the medial femur, and for 17.5%, in the area of the medial tibial plateau. More rarely, this damage was localized to the area of the trochlea (8.8%) or the lateral joint compartment (femoral 2.2%, tibial 15.3%). There were no significant differences between patients with medial or lateral meniscus lesions with respect to the distribution pattern of the joint injuries. During spectroscopic examination, pathological values were demonstrated (objective evidence of cartilage degeneration) in at least one of the examined articular surfaces (media  $n=6$ , range 1–6).

**Conclusion** Through our investigations, a high, if not complete, concomitance of degenerative cartilage lesions and degenerative meniscus damage was demonstrated. From this it can be concluded that the entity of “isolated degenerative meniscus damage” clearly does not exist in practice. It is therefore highly probable that degenerative meniscus lesions, as a part of general joint degeneration, are to be interpreted in the context of the development of arthrosis. The practical consequences still are unclear. Patients after partial meniscectomy need a longer follow-up to detect potential cartilage lesions as well as an OA progression.

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