Quantitative sensory testing (QST) is a method to assess somatosensory function in osteoarthritis (OA), but reliability data on the performance of different QST modalities on different joint structures are missing. The main aims of our study were to assess intertester and intratester reliability of tactile detection thresholds (TDTs), vibration detection thresholds (VDTs), and pressure pain thresholds (PPTs) on different knee joint structures.

In total, 32 subjects with knee OA and 32 volunteers with healthy knees participated. TDTs, VDTs, and PPTs were examined on the medial tibial condyle, medial tibiofemoral joint line, and rectus femoris muscle twice on the first visit and once after 1-3 weeks.

The intratester and intertester intraclass correlation coefficients (ICCs) of PPT measurements varied from 0.60 to 0.90 on different joint structures, showing good to excellent reliability. Intratester reliability (ICC 0.64-0.76) of VDT measurements was higher than intertester reliability (0.48-0.75). The intertester reliability of TDT measurements was excellent in subjects with knee OA (ICC 0.84-0.86) and good in controls (0.67) on the medial tibial condyle. Intratester reliability of TDT measurements varied greatly.

PPT testing is a reliable tool for measuring pain thresholds on different joint structures. The VDT measurement is reliable when taken by the same evaluator. The reliability of TDT measurements depends on the site of the measurement [1)].

1)
Jakorinne P, Haanpää M, Arokoski J. Reliability of pressure pain, vibration detection, and tactile detection threshold measurements in lower extremities in subjects with knee osteoarthritis and healthy controls. Scand J Rheumatol. 2018 Jun 25:1-10. doi: 10.1080/03009742.2018.1433233. [Epub ahead of print] PubMed PMID: 29939097.