

and regular patterns, the maps of opposing femoral condyles were less regular. We found that the lower values of the quantitative parameter on the medial condyle (blue regions in Fig. 2) surrounded a visible defect (red star on Fig. 2) but extended beyond the visible defect to possibly indicate the extent of incipient cartilage degeneration. The computed ICC was 0.87 indicating that different users had a minimal effect on the medical device's quantitative parameter.

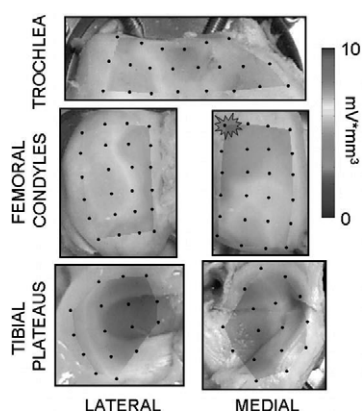


Figure 2. Quantitative parameter maps.

Conclusions: Streaming potentials measured with this device were easily obtained and provide a user-independent and non-destructive indicator of biomechanical properties and biochemical composition of human articular cartilage. This medical device is not yet approved for sale in any country, however, the promising results to date suggest a potential clinical use for quantifying cartilage function on joint surfaces during arthroscopy as well as an outcome measure for evaluating OA therapies.

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COMPUTER NAVIGATION IN TOTAL HIP REPLACEMENT: A META ANALYSIS

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Purpose: To perform a meta-analysis of the best available evidence to evaluate the reliability of computer navigation in achieving optimal acetabular alignment.

Methods: We searched, in duplicate, major medical databases and conducted hand searches of relevant bibliographies for randomized trials. The methodological quality of the studies were scored and tests of heterogeneity and publication bias were performed. We then abstracted relevant data on the primary outcome of acetabular alignment. The mean differences and odds ratios with 95% confidence intervals (CI) are reported.

Results: Of the 384 potential studies identified, 3 prospective randomized trials were included in the analysis. There was no evidence of publication bias or statistical heterogeneity between studies. The pooled mean difference for the abduction angles was -0.098 (95% CI: -0.363 to 0.168), $p=0.470$. The pooled mean difference for the anteversion angles was -0.436 (95% CI: -0.797 to -0.074), $p=0.019$. The nominally and statistically significant beneficial odds ratio for the number of outliers was 0.285 (95% CI: 0.143 to 0.569) $p<0.001$.

Conclusions: The results of this study demonstrate that there are few prospective randomized trials evaluating the use of computer navigation in hip arthroplasty. With the numbers available, we found computer navigation improves accuracy in acetabular anteversion and decreases the number of outliers from the de-

sired alignment while it made no difference in abduction angles. Further study of larger patient numbers with appropriate outcome measures are still needed.

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RADIOLOGICAL FINDINGS IN A COHORT OF EARLY OSTEOARTHRITIS, THE CHECK STUDY

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Purpose: The diagnosis osteoarthritis (OA) can be based on complaints, clinical signs and/or radiographic findings. In hip and knee OA studies different definitions for the diagnosis of OA are used, however for early OA there is not a clear definition. It is important for prevention and intervention to have opportunities to diagnose the disease in the early stage. We started a prospective 10-year follow-up study on the onset and progression of OA in participants with early complaints of hip and/or knee: CHECK (Cohort Hip & Cohort Knee) and evaluated the role of plain radiographs in an early stage.

Objective: to investigate whether participants fulfill the clinical ACR criteria of hip or knee OA and to focus on the radiographic data measured by the Kellgren and Lawrence score (K&L).

Methods: A participant was included if he has complaints (pain and/or stiffness) of knee and/or hip, is aged 45- 65 years, has never or not longer than 6 months ago visited the general practitioner for these complaints. The visits at the study center include radiographic evaluation at years 0,2,5 and 10. Five radiographic views of the knees were obtained- weightbearing posterioranterior (PA), lateral and supine skyline. Also a weightbearing anteriorposterior (AP) view of the pelvis and faux profile view of the hips were performed. All painful joints of the participants were analyzed. In participants with unilateral knee or hip pain, only the painful joint had to satisfy the ACR criteria or K&L definition for OA. In those with bilateral pain, both painful joints have to satisfy these criteria. The Kellgren and Lawrence score were performed at the PA view of the knees and the AP view of the pelvic and score ≥ 2 was diagnosed as radiographic OA.

Results: A total of 1002 participants were included, 792 women and 210 men; mean age 56 years, mean BMI 26 kg/m². Of the 826 painful knee joints 80% fulfilled the clinical ACR criteria (unilateral 78%, bilateral knee pain 81%). Only 27% of the unilateral painful hip joints and 19% bilateral fulfilled the clinical ACR criteria. Radiographic knee osteoarthritis was found in 26 unilateral painful joints(7%)and 12 (3%)bilateral painful knee joints, with at least K&L grade 2. For the hip the percentage were almost the same, respectively 8% (31) and 3% (6).

Conclusions: The CHECK study is a cohort of participants with complaints of hip or knee. The complaints of the knee joints can be diagnosed as osteoarthritis in the majority of participants according to the clinical ACR criteria. Only 75 (8%) participants had radiographic OA in this early phase. Therefore we conclude that we were able to collect a cohort of early OA.

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