Degradation of the cartilage (type II collagen) was assessed by urinary excretion of telopeptides, U-CTX-II (Nordic Bioscience).

Serum high-sensitive C-reactive protein (S-hs-CRP) was measured by a particle-enhanced immunoturbidimetric assay.

Statistics: Spearman's correlations and regression analysis were used.

Results: At baseline, only ADL (p = 0.02 and SP/Rec (p = 0.01) values were significantly lower in women with grade 1 TF OA in comparison with those without OA. Three years later the KOOS values had deteriorated and the values were worse compared to baseline. Now, all subscales of KOOS demonstrated some correlation with TF osteophytes and joint space narrowing (JSN). Also correlations had appeared between PF JSN, and P (p = 0.003), ADL (p = 0.01) and SP/Rec (p = 0.04).

At follow-up, U-CTX-II excretion correlated with SP/Rec (rho=-0.274, p=0.007) as well as with QL (rho=-0.213; p=0.037). The association between U-CTX-II and P was borderline (p = 0.055). A more detailed study of the components of the SP/Rec subscale showed that four of 5 different demanding activities (squatting, running, jumping and kneeling) correlated significantly with U-CTX-II. (p = 0.003-0.008). S-hs-CRP was associated with SP/Rec (rho=-0.61, p = 0.01) and ADL (p = 0.226, p = 0.027) as well as with U-CTX-II (rho=0.318, p = 0.002), osteophytes and BMI.

Conclusions:
1. In middle-aged women slight decline in KOOS values might be associated with stage I TF radiographic knee OA, which in most cases is expressed by osteophytes.
2. Functional limitations expressed by the subscales ADL and SP/Rec are associated with low grade systemic inflammation.
3. Some decrease of KOOS SP/Rec values seems to be an early signs of knee OA.
4. Squatting, running, jumping and kneeling were significantly associated with an increase in U-CTX-II and S-hs-CRP. Therefore one might assume that in some subjects limitations by the KOOS SP/Rec subscale are associated with intensified degradation of the joint cartilage.

300 PSYCHOMETRIC PROPERTIES OF THE LYSHOLM KNEE SCORE AND TEGNER ACTIVITY SCALE FOR OSTEOARTHRITIS OF THE KNEE

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Purpose: Several options exist for arthroscopic treatment in the degenerative knee. With previous studies showing no improvement following arthroscopy, it is crucial that a validated and easy to use questionnaire is applied to track the outcome of these procedures.

Methods: Test-retest reliability, content validity, criterion validity, construct validity, and responsiveness to change were determined for the Lysholm score and the Tegner activity scale in a group of patients diagnosed at arthroscopy with osteoarthritis of the knee. For test-retest (n = 61), patients completed a follow-up form and then completed a retest within four weeks of the primary questionnaire. The intraclass correlation coefficient was determined for the domains and overall Lysholm score and for the Tegner activity scale. An intraclass correlation coefficient > 0.70 was considered acceptable. The standard error of the measurement (SEM) calculated. The minimum detectable change (MDC) was calculated to determine the lowest change that can be considered a difference, taking into account measurement error and noise. For criterion validity (n = 158), the Tegner and Lysholm were compared to the WOMAC and SF-12. Hypotheses were developed by consensus and tested for construct validity (n = 882). Preoperative and minimum one year postoperative scores were compared to determine responsiveness (n = 294).

Results: The Lysholm knee score showed acceptable test-retest (ICC = 0.87 & 0.70 respectively) reliability, floor and ceiling effects, criterion validity, construct validity, and responsiveness to change. The standard error of the Lysholm was 6.7 and the Minimum detectable change at 95% confidence level (MDC95) was 16. For the Tegner score, the standard error was 0.60 and the MDC95 was 1.2. For Lysholm internal consistency, Cronbach’s alpha was > 0.70. For construct validity, Tegner levels and Lysholm scores were lower in patients with more severe osteoarthrosis, and difficulties with activities of daily living, working and sports. Patients with abnormal knee function had lower Tegner level and Lysholm scores. For criterion validity, Lysholm (r = -0.588, p < 0.01) and Tegner (rho = -0.316, p < 0.01) were significantly associated with the overall WOMAC score. Both scores correlated to WOMAC Pain component (Lysholm r = -0.563, p = 0.001; Tegner rho = -0.292, p = 0.001) and the WOMAC Function component (Lysholm r = -0.581, p = 0.001; Tegner rho = -0.344, p = 0.001). Both scores were also correlated with the physical component of the SF-12 (Tegner: r = 0.46, Lysholm: r = 0.641; p < 0.01), however the scores did not correlate with the mental component of the score. The Lysholm had a large effect size (1.01) and standardized response mean (0.92). The Tegner had moderate effect size (0.80) and standardized response mean (0.71).

Conclusions: The Lysholm & Tegner have been validated in ligament, chondral, and meniscus pathologies. Although these scores were initially developed to measure outcomes in patients with knee ligament injuries, they have proven to valid in other common arthroscopic procedures. The Lysholm knee score and Tegner activity scale demonstrated overall acceptable psychometric performance for outcome measures for osteoarthrosis of the knee. These scores provide the ability to collect function and activity data on a one page form for a variety of pathologies. They are simple to score, and have acceptable psychometric properties, which make them useful research tools.

301 PATIENT EVALUATION OF AN UNLOADER KNEE BRACE: A PROSPECTIVE COHORT STUDY

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Purpose: Osteoarthritis commonly affects the older, active patient. Malalignment of the knee may increase the severity of osteoarthrosis. Unloader braces are designed to decrease the load on the degenerative compartment of the knee in order to improve function and decrease symptoms related to malalignment and osteoarthrosis. The purpose of this study is to document outcomes following 6 months of use of an unloader brace. Outcomes and response to brace will be measured by symptoms, such as pain and stiffness; function, use of pain medication and quality of life.

Methods: Patients were enrolled in an IRB approved prospective cohort study. Patients were excluded if they had any arthroplasty in the knee, or moderate to severe osteoarthrosis in both lateral and medial knee compartments. Inclusion criteria were diagnosis of osteoarthrosis of the knee with unicompartmental knee conditions that required load reduction to affected compartment and a minimum of a 6 month prescription in order to allow for sufficient trial of the brace. Patients signed informed consent and agreed to complete all mailed questionnaires. At enrollment, 3 weeks, 6 weeks and 6 months, patients completed a self-administered questionnaire. This questionnaire included the SF-12; the WOMAC score; and anti-inflammatory use, both prescription and non-prescription.

Results: Thirty-nine patients were enrolled in this study. The average age was 60 years (range 44 to 87). Average BMI was 26 (range 20 to 37). There were 22 males and 17 females. Twenty-five patients were prescribed a medial unloader brace, while 14 were prescribed a lateral unloader brace. Seven patients (18%), 5 females and 2 males, discontinued brace wear. The WOMAC scores are shown in the table.

<table>
<thead>
<tr>
<th>WOMAC Pain</th>
<th>WOMAC Stiffness</th>
<th>WOMAC Function</th>
<th>WOMAC PF</th>
<th>WOMAC PCS</th>
<th>SF-12 MCS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-brace</td>
<td>6.8</td>
<td>3.0</td>
<td>19</td>
<td>28.3</td>
<td>38.6</td>
</tr>
<tr>
<td>3 weeks</td>
<td>3.0</td>
<td>1.4</td>
<td>7.4</td>
<td>10.4</td>
<td>NA</td>
</tr>
<tr>
<td>6 weeks</td>
<td>3.4</td>
<td>1.4</td>
<td>9.8</td>
<td>13.5</td>
<td>42.5</td>
</tr>
<tr>
<td>6 months</td>
<td>2.8</td>
<td>1.5</td>
<td>8.6</td>
<td>11.9</td>
<td>46.9</td>
</tr>
</tbody>
</table>

At 3 weeks, 24% patients reported a decrease in over-the-counter anti-inflammatories, and 16% reported a decrease in prescription anti-inflammatories. At 6 months, 23% reported a decrease in over-the-counter anti-inflammatories and 16% reported a decrease in prescription anti-inflammatories.

Conclusions: In this population, the unloader brace decreased patients’ symptoms and improved function. Patients reduced medications and had improved physical health.