

MRI in radiographically normal knees, including small osteophytes in the TF joint and cartilage and bone lesions in the medial patella may have clinical relevance. Furthermore, a BML in the nonweightbearing tibial subspinous region where the cruciate ligaments insert, may be a marker of abnormal loading of the cruciate ligaments and bone stresses that precede the onset of clinical symptoms within a relatively short time period and so provide insights into the pathogenesis of knee OA.

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### PRELIMINARY VALIDATION OF THE OMERACT/OARSI PAIN MEASURE FOR HIP AND KNEE OSTEOARTHRITIS

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**Purpose:** This study evaluated the measurement properties of a new 12-item osteoarthritis (OA) pain measure.

**Methods:** Subjects were English-speaking and aged 40+ years with hip (N= 18) or knee (N=82) OA confirmed on x-ray. People with joint injury or replacement, or other chronic pain disorders, were excluded. The new tool, comprised of questions on constant versus intermittent pain, in random order, was administered by phone, followed by 3 global hip/knee questions, the WOMAC pain subscale, the symptoms subscales of the HOOS/KOOS, and the limitation dimension of the Late Life Function and Disability Instrument (LLFDI). Test-retest reliability was assessed by re-administration after 48-96 hours. Analyses were conducted separately for the hip and knee samples, and the combined dataset. Item response distributions, inter-item correlations, item-total correlations and Cronbach's alpha were assessed. Principle component analysis was performed to assess if "constant" and "intermittent" pain functioned as separate domains. Test-retest reliability was by intra-class correlation coefficient (ICC). To assess construct validity, we hypothesized: a modest correlation with WOMAC pain; a higher correlation between the LLFDI score and intermittent pain than with constant pain; higher scores in females versus males; and lower quality of life among those with greater pain and greater unpredictability of pain.

**Results:** There was good distribution of response options across all items. The mean intensity was higher for intermittent versus constant pain, indicating people could distinguish the two. There was no differential item functioning by joint. Inter-item correlations ranged from 0.37 to 0.76 indicating no item redundancy. One item, predictability of pain that comes and goes, was removed from subsequent analyses as correlations with other items and item-total correlation were low. The 11-item scale had a corrected inter-item correlation range of 0.54 - 0.81 with Cronbach's alpha of 0.93 for the combined sample. Principle components analysis demonstrated factorial complexity. As such, scoring was based on the summing of individual items. Test-retest reliability was excellent (ICC 0.85). The measure was significantly correlated, and in the directions expected, with each of the other measures (Spearman correlations 0.51 [HOOS symptoms] to 0.79 [WOMAC pain scale]), except with the LLFDI, where correlations were low. Scores were higher in women than men (mean 17.4 versus 15.0).

**Conclusions:** This new OA pain measure evaluates two types of pain - constant pain and pain that comes and goes - that

were identified by people with OA as important. Preliminary psychometric testing suggests the measure is reliable and valid.

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### AGE AND GENDER ARE PREDICTORS OF MODERATE OR SEVERE PAIN POST TOTAL KNEE ARTHROPLASTY (TKA)

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**Purpose:** To investigate the impact of age and gender on prevalence of moderate or severe knee pain post TKA.

**Methods:** Using an Institutional Total Joint Registry, we identified a cohort of patients who underwent primary or revision TKA from 1996-2004 and responded to the follow-up questionnaires. We compared the prevalence of moderate or severe knee pain between primary vs. revision TKA, male vs. female and by age. Using comparison of proportions or chi-square test as appropriate, a p<0.05 was considered significant.

**Results:** We reviewed 1,640 primary TKA patients at 1-year and 5,840 at 2-years comparing males to females (696 M, 944 F; and 2,574 M, 3,266 F, respectively), further stratified by age. 272 revision TKAs at 1-year and 1,215 revision TKAs were at 2-years were also similarly studied (128 M, 144 F at 1-year; and 608 M, 607 F at 2-years). Moderate or severe pain was significantly more prevalent after revision vs. primary TKA 1-year post-surgery (15% vs. 3%, respectively; p<0.001), and at two years post-surgery (24.5% vs. 7.7%; p<0.001).

Similar proportions of women and men had moderate or severe pain 1-year post primary TKA: 3% vs. 2.9%, p=0.89; but more women had moderate-severe pain 2 years post-primary TKA: 8.8% vs. 6.3%, p=0.001, respectively. A similar pattern was seen after revision TKA, at both time intervals: 16.3% vs. 13.6%, p=0.55; and 27.5% vs. 21.4%, p=0.02, respectively. Using chi-square analysis to compare the four age groups, a significantly higher rate of moderate to severe pain was reported by the youngest and the oldest patients at 2-years post primary TKA and by the youngest patients 2-years post revision TKA, but not at 1-year (see table)

Number (n/N) and Proportion of Patients in each age category

	Primary TKA		Revision TKA	
	1 yr	2 yr	1 yr	2 yr
<60 yrs	8/324 (2.5%)	107/1,077 (9.9%)	7/44 (15.9%)	71/201 (35.3%)
61-70 yrs	16/575 (2.8%)	117/1,922 (6.1%)	12/79 (25.2%)	74/339 (21.8%)
71-80 yrs	19/560 (3.4%)	152/2,085 (7.3%)	17/103 (16.5%)	105/464 (22.6%)
>80 yrs	3/91 (3.3%)	48/424 (11.3%)	1/21 (4.8%)	19/95 (20%)
P-value	P=0.865	P<0.001	p=0.584	P=0.001

**Conclusions:** This study documents a higher prevalence of moderate to severe knee pain following both primary and revision TKA, in female patients and in certain age-groups. Factors associated with these gender- and age-differences deserve further study.

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### KNEE ALIGNMENT IN THE GENERAL POPULATION: IS THERE AN ASSOCIATION WITH SYMPTOMS?

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**Purpose:** Knee alignment predicts progression in knee osteoarthritis (OA), however it is uncertain if it predicts incidence.