arthroscopic microfracture, and to assess the clinical and radiological results within 2 years.

Methods: Between June 2008 and June 2009, we reviewed the results of 17 consecutive primary osteoarthritic patients who underwent arthroscopic microfracture with PRP. Inclusion criteria was set to those who were able to be followed up for at least 2 years, more than 40 years old, showing degenerative change of Kellgren-Lawrence grade II or III in simple radiograph and MRI, and having cartilage defect of less than 4 cm^2 with grade III or IV in Outerbridge classification through knee arthroscopy, which were then performed PRP injection after arthroscopic microfracture. And exclusion criteria was set as severe obesity, infection, immunosuppressed patients, advanced osteoarthritis (K-L grade IV), and severe deformity. Results were evaluated at 1, 6, 12, 18, 24 months post-operative using radiologic study, visual analogue scale (VAS), and international knee documentation committee (IKDC) score for functional score.

Results: No adverse event was observed in the follow-up periods. In radiologic study, the average joint space changed from 2.77 mm to 3.98 mm on anteroposterior radiographs and from 1.99 mm to 3.12 mm on lateral radiographs. Average MA (%) was 59.8% preoperatively and 41.2% at 24 months postoperatively. According to VAS, the mean preoperative scale was 8.1 (range: 7–10) and the mean postoperative scale was 3.2 (range: 1–4) and 2.9 (range: 0–4) at 6 and 18 months of follow-up. In IKDC score, the mean preoperative knee score was 57.3 points (range: 32–77), and the mean postoperative knee score was 76.3 points (range: 60–95) and 87.7 points (range: 70–98) at 6 and 18 months of follow-up, respectively. 2 of 17 cases were performed 2nd look arthroscopy, and the well restoration of cartilage were able to be checked at the cartilage defect site (Figures).

Conclusions: The results indicate that the treatment of PRP with arthroscopic microfracture is safe and has the effectiveness to reduce pain and improve knee function and quality of life in patients with early-staged osteoarthritis of the knee. And maintenance of clinical and radiological improvement is observed within 2 years.

Fig. 1. 46-year-old female. In medial femoral condyle, about 3 cm sized, grade IV cartilage defect was noted and arthroscopic microfracture and the application of PRP was performed.

Fig. 2. In 2nd look arthroscopy at 8 months later, well restoration of cartilage defect was seen.

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DO PHYSICAL EXAMINATIONS PREDICT OA PROGRESSION BASED ON MRI? RESULTS FROM THE VANCOUVER KNEE OSTEOARTHRITIS PROGRESSION STUDY

J. Cibere[1,2], E.C. Sayre[2], A. Guermazi[3], J.M. Esdaile[4,2], J. Kopec[1,2], J. Singer[1,5], A. Thorne[1], H. Wong[1]. *[1]Univ. of British Columbia, Vancouver, BC, Canada; [2]Arthritis Res. Ctr. of Canada, Vancouver, BC, Canada; [3]Boston Univ. Med. Ctr., Boston, MA, USA; [4]Univ. of Calgary, Calgary, AB, Canada; [5]Ctr. for Hlth.Evaluation and Outcome Sci., Vancouver, BC, Canada*

Purpose: To determine whether standardized knee examinations predict progression of osteoarthritis (OA) in a population-based cohort with predominantly pre-radiographic knee OA.

Methods: Population-based longitudinal cohort study of subjects, age 40–79, with knee pain. Subjects were evaluated at baseline and follow-up using detailed clinical assessments and standardized knee examinations, including alignment (normal, varus, valgus), hamstring and quadriceps weakness (absent, present), effusion (absent, present), medial and lateral tibiofemoral (TF) tenderness (absent, present), patellofemoral (PF) grind (absent, present), and flexion contracture (degrees). Subjects had fixed flexion knee x-ray and MRI (1.5T). MRI cartilage (MRC) was graded on a 0–4 scale on 6 joint surfaces. Progression of OA was defined as an increase in MRC by ≥1 grade on at least two joint surfaces or by ≥2 grades on at least one joint surface. We used univariate exponential time-to-event regression models, taking into account differential follow-up time, to determine hazard ratios (HR) and 95% confidence intervals (CI) for the association of baseline knee examinations with OA progression rate, adjusted for age, gender and BMI. A multivariable prediction model was then developed using bootstrap methodology with the final model selection based on Akaike's Information Criterion (AIC). Evaluation of the model was based on predictive accuracy, sensitivity, specificity, positive predictive value (PPV), negative predictive value (NPV) and c-index (1.0 indicates perfect model fit). To obtain population-based estimates, analyses were performed using age decade-gender stratum sampling weights.

Results: 163 subjects were seen at a weighted median follow-up time of 3.2 years. Of these, 15.5% had progression of OA based on MRI. In univariate analyses, knee examinations predictive of OA progression included hamstring weakness (HR 3.88; 95% CI: 1.44, 10.45) and quadriceps weakness (HR 3.90; 95% CI: 1.53, 9.92), with a trend towards significance for PF grind (HR 0.25; 95% CI: 0.05, 1.22), while malalignment, effusion, TF tenderness and flexion contracture were not significantly associated with progression. In the multivariable prediction model, quadriceps weakness (HR 5.31; 95% CI 2.30, 12.24) and patellofemoral grind (HR 0.20; 95% CI 0.04, 1.00) were retained in the final model. In this final model, predictive accuracy for OA progression was 84.7%, sensitivity 22.2%, specificity 97.1%, PPV 60.0%, NPV 86.3%, and c-index 0.69.

Conclusions: In this population-based cohort with knee pain, quadriceps weakness was associated with an increased risk of knee OA progression based on MRI cartilage damage, while a positive patellofemoral grind test was associated with a reduced risk of OA progression after 3.2 years. Together these two examinations had a positive predictive value of 60% for OA progression. Although these standardized and reliable tests are easy and quick to perform, the predictive test performance is not adequate; information on physical examination may need to be combined with other clinical, x-ray or biomarker variables to enhance prediction of OA progression.

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PHYSICAL INACTIVITY CHARACTERISTICS: DATA FROM THE OSTEOARTHRITIS INITIATIVE (OAI)

J. Lee[1], J. Song[1], J. Hootman[2], P. Semanik[1], R. Chang[1], L. Sharma[1], L. Van Horn[1], J. Bathon[3], C. Eaton[4], M. Hochberg[5], R. Jackson[6], C. Kwoh[7], W. Mysiw[6], M. Nevitt[8], D. Dunlop[1]. *[1]Northwestern Univ., Chicago, IL, USA; [2]CDC, Atlanta, GA, USA; [3]Columbia Univ., New York, NY, USA; [4]Brown Univ., Providence, RI, USA; [5]Univ. of Maryland, Baltimore, MD, USA; [6]Ohio State Univ., Columbus, OH, USA; [7]Univ. of Pittsburgh, Pittsburgh, PA, USA; [8]Univ. of California, San Francisco, San Francisco, CA, USA*

Purpose: Low levels of physical activity or inactivity among adults with arthritis are a recognized public health concern. Objective accelerometer physical activity monitoring of adults with knee OA was used to assess the frequency of inactivity as defined by the US Department of Health and Human Services (DHHS) and to identify potentially modifiable risk factors associated with inactivity that could guide future interventions designed to improve physical activity.

Methods: Cross-sectional accelerometer data from 1089 adults with radiographic knee OA aged 49 to 84 years participating in Osteoarthritis Initiative accelerometer monitoring ancillary study were assessed for inactivity (i.e. no sustained 10 minute periods of moderate-to-vigorous intensity physical activity during a week's surveillance). The relationship between modifiable factors (dietary fat, fiber, weight status, smoking, depressive symptoms, WOMAC knee function, WOMAC knee pain, knee confidence) with inactivity was assessed using odds ratios and attributable fractions (AF) controlling for descriptive (age, gender, race, education, live alone, employment, frequent knee symptoms,

comorbidity) factors. The sample AF represents the expected proportion by which the inactivity frequency could be reduced if the risk factor were totally absent, but it does not imply cause and effect.

Results: Almost half of these participants with knee OA were physically inactive. Modifiable factors were evaluated from two perspectives. The first perspective identifies factors that were associated with physical inactivity at the level of the individual based on odds ratios (OR). Controlling for descriptive factors, inadequate dietary fiber intake (OR = 1.6, confidence interval [CI]: 1.2, 2.2), being overweight (OR = 1.8, CI: 1.2, 2.5) or obese (OR = 3.9, CI: 2.6, 5.7), severe WOMAC knee dysfunction (OR = 1.9, CI: 1.3, 2.8), and severe WOMAC pain (OR = 1.7, CI: 1.1, 2.5) significantly were related to inactivity. However, moderate WOMAC pain (OR = 1.3, CI: 0.9, 1.8) and moderate WOMAC knee dysfunction (OR=, 1.4 CI: 1.0, 1.9 were not significant. A second public health perspective examined the influence of each modifiable factor on inactivity by estimating the attributable fractions (AF) for the sample, Risk factors with significant AF were being overweight or obese (AF=23.8%, CI: 10.5%, 38.6%) and inadequate dietary fiber (AF=12.1%, CI: 0.1%, 24.5%) controlling for all descriptive and modifiable factors.

Conclusion: Pain and poor function are commonly viewed as barriers to being physically active for adults with knee OA. Being overweight/obese and unhealthy dietary factors may be surrogates for an unhealthy lifestyle. All components should be considered in designing physical activity and lifestyle interventions that target arthritis populations with low activity levels.

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PREDICTORS OF PROGRESSION OF KNEE OA: OSTEOARTHRITIS INITIATIVE

C.B. Eaton[1], M. Bertoia[2], B. Dobosz[2], J. Driban[3], T.A. McAlindon[3].
[1]Warren Alpert Med. Sch. of Brown Univ., Pawtucket, RI, USA; [2]Brown Univ., Providence, RI, USA; [3]New England Med. Ctr., Boston, MA, USA

Purpose: Risk factors for developing knee osteoarthritis are well established but predictors of knee osteoarthritis progression have been inconsistent and vary by cohort and by definition of progression. We sought to evaluate predictors of knee progression in the OAI.

Methods: 941 Osteoarthritis Initiative participants diagnosed with symptomatic OA at baseline, defined as the combination of definite tibio-femoral osteophyte formation (OARSI grade 1–3) and frequent knee symptoms including pain, aching, or stiffness on most days of a month in the past year at baseline in one or both knees. Our analysis used one knee per person: the most severely affected knee (higher KL grade). Radiological evidence of JSW narrowing at 0.275 cm from the medial tibial was measured at baseline and at two years using a semi-quantitative computerized algorithim. Progression was defined as reduction in JSW by 0.7 mm, based on guidelines set forth by the collaborative initiative of the Osteoarthritis Research Society and the Outcome Measures in Rheumatoid Arthritis Clinical Trials (OARSI-OMERACT). Results: 189 knees progressed over two years and 752 had no change or improved. Univariate predictors of progression at $P \leq 0.20$ were: Race, BMI class, PASE score, KL grade, frequent knee symptoms, VAS pain, KOOS pain, KOOS qoL, KOOS symptoms, KOOS function, WOMAC pain, number of co-morbid conditions. Multivariate predictors of knee progression at $p < 0.05$ were only: African american race OR= 2.30, 95% CI 1.40–3.79. Age, gender, BMI, KL grade, symptoms, function, extensor strength did not predict progression in this analysis.

Conclusion: African American race independently predicted OA progression based upon medial joint space width narrowing in the Osteoarthritis Initiative at two years. Other proposed risk factors did not. Other definitions of progression and longer duration of follow-up might provide different results.

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CONSULTATION PREVALENCE OF OSTEOARTHRITIS IN UPPER AND LOWER LIMBS IN SOUTHERN SWEDEN

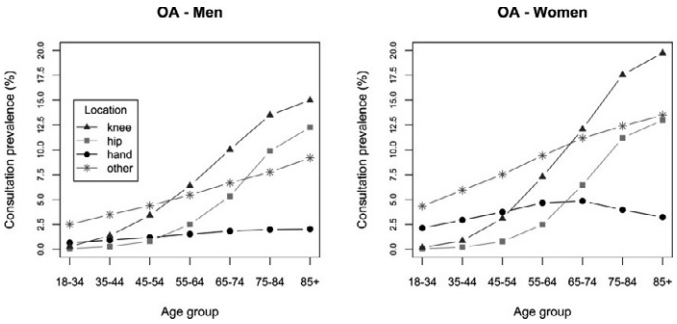
A. Turkiewicz, I.F. Petersson, M. Englund. *Dept. of Orthopedics, Clinical Sci. Lund, Lund Univ., Lund, Sweden*

Purpose: To estimate the prevalence and age and sex patterns of subjects with extremity OA having led to doctor consultation.

Methods: The Skåne Health Care Register (SHCR) is a legislative, mandatory register based on physicians' International Classification of Diseases (ICD) 10 diagnostic codes. The register covers all in- and outpatient health care in southern Sweden (total population 1.2 million). We identified all adult (18 years of age or older) patients having received the diagnosis of knee OA (M17), hip OA (M16), hand/wrist OA (M15.1, M15.2, M18, M19.0D, M19.1D or M19.2D), and OA in other locations, i.e. elbow, foot, shoulder, or other joints not incl. the spine (M19 different from M19.0D, M19.1D and M19.2D) or polyarthrosis (M15 different from M15.1 and M15.2) during the years 1998 until 2009. We obtained point estimates of consultation prevalence by Dec 31st 2009 by cross referencing with the population register to exclude subjects who had relocated from the county or were deceased. The total adult population per Dec 31st 2009 was used as the denominator, reduced with 15% to compensate for the loss of patients exclusively seen by private practitioners whose diagnostic coding is not yet forwarded to the SHCR.

Results: The adult consultation prevalence of OA in extremities (any location) was 10.0% (95% CI: 9.89%; 10.02%), 8.1% (95% CI: 7.98%; 8.15%) for men and 11.8% (95% CI: 11.68; 11.88) for women. The most common location was knee OA with a consultation prevalence of 5.0%, followed by OA of other joints – 3.5%, OA of the hip – 2.5%, and hand/wrist OA with the consultation prevalence of 1.4%. The consultation prevalence in population aged 65 or more was 27.1%, 22.3% for men and 30.9% for women. The age and sex-specific patterns are displayed in the graph.

Of subjects who had consulted with extremity OA 19.3% had OA diagnosed in more than one location, knee OA combined with other OA being the most common combination (5.9%). The majority of patients (75.1%) had been diagnosed at least once in outpatient specialist or inhospital care.



Conclusions: The high doctor consultation prevalence of OA in extremities, 10.0% of all adults, 27.1% of all above 65 years of age, shed light on the burden on the health care system and warrants concern with a steadily ageing and increasingly obese population.

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DIFFERENCES BETWEEN MEN AND WOMEN OBSERVED FOR HALLUX VALGUS AND FOOT PAIN IN RELATION TO LOWER EXTREMITY LIMITATIONS: A STUDY OF COMMUNITY-DWELLING OLDER ADULTS

A.B. Dufour[1,2], V.A. Casey[1], P.P. Katz[3], R.R. McLean[1], M.T. Hannan[1].
[1]Hebrew SeniorLife, Boston, MA, USA; [2]Boston Univ., Sch. of Publ. Hlth., Boston, MA, USA; [3]Univ. of California San Francisco, San Francisco, CA, USA

Purpose: Hallux valgus, as a structural foot disorder, may affect the base of support in older adults, and thus could also affect lower extremity physical abilities. Further, it is unknown whether foot pain contributes to lower extremity physical limitation along with, or separately from, hallux valgus. The purpose of this study was to investigate hallux valgus and foot pain and their associations with lower extremity physical limitations in community-dwelling older adults.

Methods: This cross-sectional study included 2208 ambulatory adults, contributing 4414 feet, from the population-based Framingham Study. We used a validated foot exam done by trained examiners with criteria to assess HV and foot pain. Hallux valgus was present if the angle of the hallux toward the lesser toes was observed to be >15°. Foot pain (y/n) was queried: "On most days, do you have pain, aching or stiffness in either foot?" Each foot was categorized into four groups based on foot pain and hallux valgus status: 1) foot pain and no hallux valgus, 2) no foot pain and hallux valgus, 3) foot pain and hallux valgus, and 4) neither foot pain nor hallux valgus. Lower extremity physical limitation was assessed using the subject's ability to climb stairs and to stand for 15 minutes. A report of difficulty, inability, or instruction from a physician to avoid the activity was considered to be a limitation (y/n). Age, sex, and body