Results: The prevalence of knee osteoarthritis was 18.1% among this population of mid-aged women (mean 46.1 years). The mean leptin value was 30.73 ng/mL (standard deviation [SD] 18.65). Leptin levels were statistically significantly greater among women with knee osteoarthritis (40.58 ng/mL, SD=20.09) as compared to women without knee osteoarthritis (28.37 ng/mL, SD=17.18) (P<0.0001). Body mass index was 24% higher among women with knee osteoarthritis (P<0.0001) but the average BMI among both groups was greater than 30 kg/m2. After adjustment for age, race/ethnicity and BMI residuals, a 1 ng/mL higher leptin level was associated with 7% higher odds of having knee OA [OR=1.07, 95% confidence interval (1.05, 1.09)].

Conclusions: Leptin levels are related to knee OA prevalence, even after adjustment the impact of BMI. Obesity is a major risk factor for osteoarthritis, and this work suggests that leptin, a product of fat tissue, may be an important part of the obesity-OA relationship. Replication of this finding could have important implications for therapeutic interventions over-and-above weight reduction.

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THE ASSOCIATIONS BETWEEN BODY AND KNEE HEIGHT MEASUREMENTS AND KNEE JOINT STRUCTURE IN AN ASYMPTOMATIC COHORT

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Introduction: It has been suggested that knee height is a determinant of knee joint load. Nonetheless, no study has directly examined the relationship between anthropometric measures of height and knee joint structures, such as cartilage.

Methods: 89 asymptomatic community-based adults aged 25-62 with no diagnosed history of knee arthropathy were recruited. Anthropometric data (knee height and body height) were obtained by standard protocol, while tibial cartilage volume and defects, as well as bone area were determined from magnetic resonance imaging. Static knee alignment was measured from the joint radiograph.

Results: All anthropometric height measures were associated with increasing compartmental tibial bone area (p <= 0.05). Although knee height was associated with tibial cartilage volume (e.g. β = 27 mm3 95% CI 7- 48; p = 0.009 for the medial compartment). Knee height as a percentage of body height was associated with a reduced risk of medial tibial cartilage defects (odds ratio 0.6; 95% confidence interval 0.4 - 1.0; p = 0.05).

Conclusion: The association between increased anthropometric height measures and increased tibial bone area may reflect inherently larger bony structures. However the beneficial associations demonstrated with cartilage morphology suggest that an increased knee height may confer a beneficial biomechanical environment to the chondrocyte of asymptomatic adults.

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SEVERITY OF COMORBID OSTEOARTHRITIS IS NOT ASSOCIATED WITH INCREASED RISK FOR SERIOUS ADVERSE OUTCOMES IN INDIVIDUALS WITH DIABETES MELLITUS

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Purpose: Osteoarthritis (OA) and diabetes mellitus (DM) commonly co-occur, in part due to common risk factors, such as obesity. However, few studies have examined the impact of comorbid OA on DM outcomes. Comorbid painful OA may increase risk for serious adverse outcomes in patients with DM by limiting mobility which can lead to greater weight gain and stress. OA may also limit self management activities (e.g. meal prep and foot care) resulting in worse diabetes related outcomes and worse diabetes control. Our objective was to determine the relationship between hip/knee OA severity and risk for serious adverse outcomes for DM.

Methods: This retrospective cohort study utilized data from a longitudinal population cohort with moderate-severe hip/knee OA recruited in 1996-98 through survey of 100% aged 55+ years in two regions of Ontario, Canada. Baseline interviews assessed socio-demographics, OA severity (WOMAC), body mass index (BMI), mental and general health status (SF-36), and self-reported comorbidity, and were linked with Ontario health administrative databases to examine health care use. OA participants with DM at baseline were excluded based on meeting criteria for inclusion in the validated Ontario Diabetes Database (ODD) *OR* self-reported physician diagnosis of DM 'ever'. Individuals with ≥ 1 hospitalization or 2 physicians' claims for a diagnosis of DM (ICD-9 diagnostic code 250.x) within a 2-year period are included in the ODD. Our primary outcome was an emergency department (ED) visit or hospitalization for hypo- or hyperglycemia, soft tissue infection, peripheral revascularization, or end-stage renal disease, defined using published, validated algorithms. From baseline until 2011, Cox proportional hazards regression was used to examine the contribution of OA symptom severity (quartiles of WOMAC summary scores) to time to first serious DM outcome, unadjusted and then adjusted for other covariates.

Results: Of 2,411 baseline cohort participants, 480 met criteria for DM at baseline and were included in our analyses (mean age 71, SD 9.4 years and 72% female). Over a median 7.5 yrs (IQR 3.7-13.3 yrs), 30.0% experienced an ED visit or hospitalization for a DM complication. Univariate and multivariable analyses found that risk of an adverse DM outcome increased significantly with baseline self-reported heart disease (p=0.008) and increasing number of visits to specialists in the pre-baseline year (p=0.002), but no relationship was found with baseline OA severity, as measured by quartiles of WOMAC summary scores (p =0.71).

Conclusions: In a population cohort with at least moderate hip/knee OA symptoms and disability and DM, greater OA severity was not associated with a higher risk for adverse DM outcomes.

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MULTIDISCIPLINARY INTERVENTIONS FOR MULTISITE OSTEOARTHRITIS IN PRIMARY CARE: A SYSTEMATIC REVIEW

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Purpose: To evaluate the clinical and cost-effectiveness of multidisciplinary interventions for multisite osteoarthritis (OA) in primary care.

Methods: A systematic review of randomised controlled trials was undertaken. Computerised bibliographic databases were searched from database inception until March 2011 (Medline, Embase, Cinahl, PsychINFO, BNI, HBE, HMIC, AMED, Web of Science and the Cochrane Library). Studies were included if they met the following criteria; a randomised controlled trial (RCT), OA in at least two different joint sites (multisite), a primary care population and interventions undertaken by at least two different health disciplines. The Cochrane 'Risk of Bias' tool was utililised for quality assessment. A narrative analysis was used to summarise the findings.

Results: The search identified 1148 individual titles of which de-duplication reduced the number from 827 to 211. 79 abstracts and three full papers fulfilled the eligibility criteria. Two RCTs and one cluster RCT were eligible for review. Interventions were: study 1; a case management intervention of GP-led information for OA self-management; with the addition of a practice nurse. Study 2: a structured physiotherapy-led exercise programme for OA with the addition of education from a GP. Study 3: an education programme for patients with OA; five different health professions were used to deliver a multidisciplinary intervention. Meta analysis was not possible because of the heterogeneity of the studies.

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Patient education was beneficial in primary care in improving self-reported health and reducing health service utilisation. No improvements were found for self efficacy. Improvements in pain and social outcomes were found for case management (GP and nurse). Primary outcome measures included quality of life (study 1 and study 3) and self reported disability (study 2). There were a range of different patient reported outcome measures across studies.

Conclusions: A systematic review identified three trials investigating multidisciplinary approaches to multisite or generalised OA. Trials each used core interventions endorsed by OA guidelines. All three trials targeted osteoarthritis of the hand, hip or knee. Despite each of the three studies having an educational intervention, the studies were very heterogeneous. There are currently very few studies that target multidisciplinary approaches to multisite osteoarthritis. A consistent approach to outcome measurement in future studies of multisite OA is needed.

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DEMOGRAPHIC AND CLINICAL CHARACTERISTICS OF PRIMARY AND SECONDARY CARE PATIENTS WITH OSTEOARTHRITIS OF HIP AND KNEE ARE QUITE SIMILAR

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Purpose: As is stated in many guidelines for patients with osteoarthritis, it is advised to treat patients conservatively before patients are referred to secondary care. Therefore, it can be expected that secondary care patietns with osteoarthritis differ from primary care patients. The purpose of the current study is to compare demographic and clinical characteristics of patients with osteoarthritis who are referred to primary care physiotherapists and patients who are referred to secondary care.

Methods: In a cross-sectional study secondary analyses were performed on two cohorts of patients with knee or hip osteoarthritis: one primary care dataset (n=200) and one secondary care dataset (n=279). In both studies comparable measurements were performed at baseline in the same time period. Measurements included, among others, gender, age, location and duration of osteoarthritis, number of comorbidities, pain (VAS), physical function (WOMAC), muscle strength, range of motion, social support and quality of life.

Results: Both groups were similar in most characteristics, with some exceptions. The primary care group consisted of less patients with both hip and knee osteoarthritis and of younger patients compared to the secondary care group. Furthermore, secondary care patients reported more pain (4.0 versus 4.8), less muscle strength and more falls in the last six months.

Conclusions: There are differences between primary and secondary care populations of patients with osteoarthritis, but these differences are minimal. Looking at the results of this research, the question arises whether the health care of patients with osteoarthritis can be organised more efficient and less expensive. However, long-term prospective studies are needed to evaluate the cost effectiveness of both primary and secondary care of patients with osteoarthritis.

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LONGITUDINAL CHANGES IN PRESCRIPTION USE IN THE OSTEOARTHRITIS INITIATIVE (OAI)

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Purpose: To investigate the longitudinal changes in prescription use in the OAI study

Methods: 48 month medication data were added to data collected for previous clinic visits of the OAI study. The data were sorted by drug classes with particular focus on NSAIDS, Statins and Bisphosphonates, chosen for their association with musculoskeletal diseases. Chi-squared statistics were used to compare groups at baseline and 48 months.

Results: There was an overall decrease in the number of prescriptions for both NSAIDs and Bisphosphonates from baseline to 48 months (by 48% (P<0.001) and 37 % (P=0.264) respectively), however the number of prescriptions for Statins increased by 58 % from baseline to 48 months (P<0.001) (Figure 1).

Analysis showed there were significant differences between prescribing patterns by sex. Statin prescriptions for men and women increased significantly between baseline and 48 months (P<0.001) but NSAID prescriptions decreased significantly only in women at 48 months compared with baseline for females (P<0.001). The decrease in Bisphosphonate prescriptions from baseline to 48 months were not significant in females (P=0.59) or males (P=0.062).

The differences between cohorts were analysed at each time point and each of the three drug classes showed significant differences (P<0.001). Subset analysis, however, found that both NSAIDs and Bisphosphonates were significantly lower in the progression than the incident cohort (both P0.05).

Conclusions: Over the duration of the OAI study the number of Statin prescriptions has significantly increased, whilst NSAID and Bisphosphonate prescriptions have decreased. The increase in Statin prescriptions is likely to be due to two factors, the increase in prescribing these drugs to a normal population for prevention of disease and an aging population. The decrease in the numbers of Bisphosphonate prescriptions may be attributable to patients having a drug holiday, although we do not know for how long the patients have been on Bisphosphonates prior to study entry. These temporal changes in prescription drug use should be borne in mind when analysing the OAI dataset.
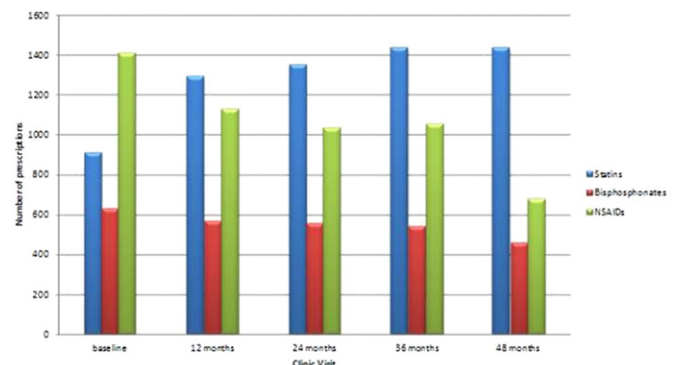
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PSYCHOLOGICAL FACTORS ASSOCIATED WITH DAILY STEP COUNT IN KNEE OSTEOARTHRITIS

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Purpose: Despite strong evidence of the effectiveness of daily walking for alleviating self-reported pain and improving physical function for people with knee osteoarthritis (OA), daily physical activity levels remain below recommendations for this population. OA leads to psychological as well as physical dysfunction and while psychological factors are known to influence physical activity levels in other populations, little is known about the extent to which psychological factors influence walking levels among people with knee OA. This knowledge is important as greater understanding of modifiable factors that influence daily walking levels may enable interventions to increase walking behaviors to be better planned and targeted. Previous studies exploring associations between psychological factors and physical activity levels among people with knee OA, using a range of self-report and accelerometer-based physical activity measures, have reported that depression, anxiety and negative affect (encompassing depression, tension, fatigue and anger) are not associated with physical activity levels. These studies have not considered many other important psychological variables, which may be important modifiable mediators of physical activity for people with knee OA. In addition, none