**Results:** Over 12 years of mean follow-up, we documented 9,057 new diabetes cases with an incidence rate of 1.05 per 100 person years. At baseline, the mean age of OA patients was 61 years and 60% were women. OA showed statistically significant interactions with age and gender. Both univariable and multivariable Cox PH models were fitted separately for men and women aged 20-64 and 65+ years. Unadjusted and adjusted HRs (95% CI) for diabetes were 1.34 (1.24-1.45) and 1.15 (1.06-1.25), respectively, among men with OA aged 20-64 years. Among women with OA aged 20-64 years, unadjusted and adjusted HRs (95% CI) for diabetes were 1.56 (1.45-1.69) and 1.20 (1.11-1.30), respectively. Adjusted HRs for men and women with OA aged 65+ years were 0.91 (0.81-1.02) and 0.99 (0.90-1.08), respectively which were not significantly different from 1.0.
**Conclusion:** This study suggests that younger men and women with OA had increased risks of developing diabetes compared to their age and sex matched counterparts. Further studies are needed to confirm our results in other populations and to elucidate the potential biological mechanisms for this increased risk.

Obesity Phenotypes and Symptoms, Function and Knee OA

| Outcomes | Normal Weight BMI<25 Met Normal N=640 | Normal Weight Met Abnormal N=493 | Overweight BMI 25-29.9 Met Normal N=723 | Overweight Met Abnormal N=1109 | Obese BMI>=30 Met Normal N=475 | Obese Met Abnormal N=1229 | P value for Met abnormal vs normal | P for Trend |
|---|---|---|---|---|---|---|---|---|
| Mean Age | 58.2 | 65.4 | 57.9 | 64.6 | 56.5 | 61.7 | <0.001 | 0.17 |
| Gender %women | 70 | 68 | 54 | 49 | 61 | 58 | <0.001 | <0.001 |
| Race %African American | 5.5 | 8.2 | 10.4 | 16.1 | 20.9 | 29.1 | <0.001 | <0.001 |
| K-L Grade (%) | | | | | | | | |
| 0-1 | 75.5 | 67.6 | 61.9 | 54.7 | 51.9 | 41.6 | <0.001 | <0.001 |
| 2 | 17.7 | 19.4 | 24.4 | 25.7 | 31 | 34 | <0.001 | <0.001 |
| 3-4 | 6.7 | 12.9 | 13.7 | 19.6 | 17 | 24 | <0.001 | <0.001 |
| WOMAC | | | | | | | | |
| Scores | 4.08 | 5.68 | 5.74 | 7.7 | 8.99 | 11.11 | <0.001 | <0.001 |
| Disability | 1.33 | 1.67 | 1.91 | 2.32 | 2.67 | 3.17 | <0.001 | <0.001 |
| PainStiffness | 1.02 | 1.13 | 1.27 | 1.44 | 1.67 | 1.87 | <0.001 | <0.001 |
| MSK Symptoms (%) | | | | | | | | |
| Back | 36.8 | 43.3 | 39.8 | 46.2 | 44.9 | 52.5 | <0.001 | <0.001 |
| Hand/Wrist | 61.6 | 75.4 | 54.1 | 66.3 | 52.9 | 64.7 | <0.001 | <0.001 |
| Shoulder | 13.4 | 12.8 | 14.2 | 17.6 | 14.2 | 20.3 | <0.001 | <0.001 |
| Hand Bumps (%) Either Hand | 41.2 | 64.9 | 35.7 | 48.7 | 28.4 | 43.5 | <0.001 | <0.001 |

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## CROSS-SECTIONAL RELATIONSHIP OF OBESITY METABOLIC PHENOTYPES, MUSCULOSKELETAL SYMPTOMS, WOMAC SCORES AND KNEE OA: A REPORT FROM OAI

C.B. Eaton[†], M. Roberts[‡], M. Waring[§], K. Lapane[§], S. Yang[‖], S. Yang[‖], J. Driban[¶], T. McAlindon[#]. [†]*Warren Alpert Med. Sch. of Brown Univ., Pawtucket, RI;* [‡]*Mem. Hosp. of Rhode Island, Pawtucket, RI;* [§]*Univ. of Massachusetts Med. Sch., Worster, MA;* [‖]*Virginia Commonwealth Univ., Richmond, VA;* [¶]*Tufts New England Med. Ctr., Boston, MA;* [#]*Tuft New England Med. Ctr., Boston, MA*

**Purpose:** The potential role of metabolic perturbations associated with overweight and obesity and musculoskeletal symptoms, and knee osteoarthritis is under researched. We hypothesized that overweight and obese individuals with metabolic perturbations would have greater musculoskeletal symptoms, worse WOMAC pain,stiffness and disability scores and greater prevalence and severity of knee osteoarthritis.
**Methods:** The OAI is a multi-center prospective study of persons with or at higher risk of knee OA aged between 45-79. Participants in the Osteoarthritis Initiative at baseline had knee x-rays with KL grading, WOMAC pain , stiffness and disability assessed, BMI determined, waist circumference measured, and self report of presence of symptoms in the back, shoulders, hand/wrist, and hand bumps determined. Metabolic abnormalities were define by the presence of either hypertension, hyperlipidemia or diabetes mellitus defined by self-report or use of medications. Overweight was defined as BMI 25-29.9 kg/m2 and Obesity as BMI >= 30 kg/m2.
**Results:** 4509 individuals were included in this analysis. The prevalence of knee osteoarthritis, severity of knee OA, womac pain, stiffness and disability scores and frequency of back pain, hand/wrist pain, shoulder pain, and hand bumps were increased by obesity metabolic phenotype in a monotonically increasing manner across weight categories and within each category when metabolically abnormalities were found ($p<0.001$) see table
**Conclusions:** Compared to normal weight, metabolically benign individuals increasing adiposity and metabolic abnormalities are synergistically associated with worse patient centered outcomes of increasing knee specific pain, stiffness and disability, frequency of pain in variety of other joints , most notably the hand and wrist, and higher prevalence and severity of knee OA. Further studies exploring the mechanisms of these associations and prospective associations are warranted

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## INFORMATION NEEDS REGARDING TOTAL JOINT ARTHROPLASTY DIFFER BY GENDER

G.A. Hawker[†], Y. Qi[†], R. Saini[‡], W. Lou[†], I. Stanaitis[‡], E. Badley[†], C. Borkhoff[§], A. Davis[†], S. Dunn[†], M. Gignac[†], S. Jaglal[†], H. Kreder[†], J. Sale[†]. [†]*Univ. of Toronto, Toronto, ON, Canada;* [‡]*Women's Coll. Hosp., Toronto, ON, Canada;* [§]*Women's Collge Hosp., Toronto, ON, Canada*

**Purpose:** When medical management of hip/knee arthritis fails, total joint arthroplasty (TJA) is recommended. However, up to one-third of potential TJA candidates are unwilling to consider this surgery. A number of factors have been identified as contributing to unwillingness but no study has evaluated the relative importance of these factors, including whether importance ratings differ by gender. Our study evaluated the relative importance of previously identified correlates of TJA willingness overall and by gender.
**Methods:** In a cohort with hip/knee OA aged 50+ years, structured interviews were conducted in those who met criteria as 'potential TJA candidates' (WOMAC≥30/96; no surgical contraindications) and indicated being unsure or unwilling to consider TJA. Those with a prior TJA or on a TJA wait list were excluded. Participants provided information on: demographics; concurrent health problems; general health status; and arthritis severity (WOMAC). For each of 18 items (e.g., length of recovery), participants rated the importance of the item from 'not at all important' to 'extremely important' in TJA decision making. Item responses were subjected to exploratory factor analysis. The principle factor method was used to extract the factors, followed by a promax (oblique) rotation. Participants' factor scores were estimated by summing the item scores multiplied by the factor loadings across all items. Multivariable logistic regression model was used to evaluate the relationship between unwillingness to consider TJA (definitely not willing versus probably unwilling or unsure) and factor scores. Multiple linear regression modeling was used to study the relationship between factor scores and gender, controlling for age (50-64, 65-74, 75+ years) and education (<high school, ≥high school).
**Results:** 631 individuals with hip/knee OA participated (mean age 70 years, 78% female, 54% ≤high school education). Factor analysis identified 4 factors: TJA risks/benefits (5 items - risk of complications, pain early and late post-surgery, function post-surgery, surgery may not help); TJA indications (4 items: age - too old/too young; age - might