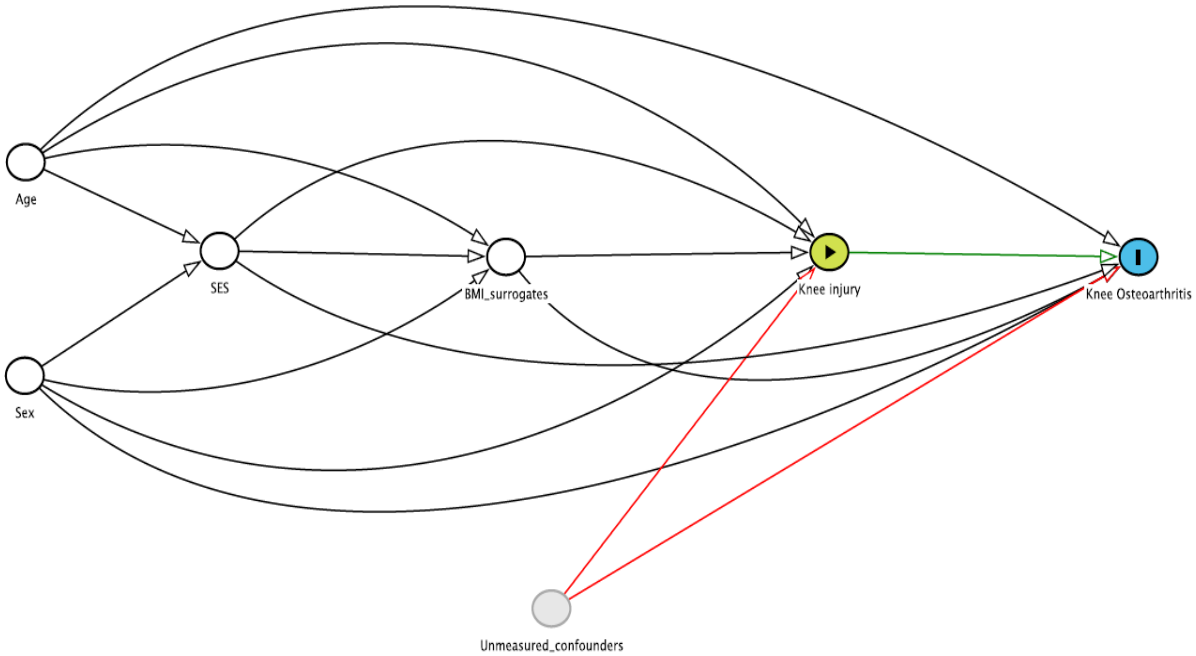
Supplementary appendix

Table 1 Knee injury codes (ICD-10)

Knee injury description	Knee injury code
Knee contusion	S80.0
Fracture of patellae	S82.0
Fracture of the upper end of tibia	S82.1
Dislocation of patellae	S83.0
Dislocation of knee	S83.1
Meniscal tear	S83.2
Articular cartilage tear	S83.3
Collateral ligament sprain/strain	S83.4
Cruciate ligament sprain/strain	S83.5
Other/unspecified sprain/strain	S83.6
Injury to multiple structures	S83.7

Figure 1 Directed Acyclic Graph to illustrate the confounders that were adjusted for in the analysis, and unmeasured confounders, both associated with knee injury and knee osteoarthritis



* SES= social economic status, which contains the variables income, educational attainment, and residential area.
† BMI surrogates contain the variables hypertension, diagnosis of diabetes, and obesity.
To support the relationships within this graph, we included the following references:

Zheng H, Chen C. Body mass index and risk of knee osteoarthritis: systematic review and meta-analysis of prospective studies. BMJ Open 2015;5(12). doi:10.1136/bmjopen-2014-007568

Silverwood V, Blagojevic-Bucknall M, Jinks C, et al. Current evidence on risk factors for knee osteoarthritis in older adults: a systematic review and meta-analysis. Osteoarthritis Cartilage 2015;23(4):507-515

Srikanth VK, Fryer JL, Zhai G, et al. A meta-analysis of sex differences prevalence, incidence and severity of osteoarthritis. Osteoarthritis Cartilage 2005;13(9):769-781

Van Tunen JAC, Peat G, Bricca A, et al. Association of osteoarthritis risk factors with knee and hip pain in a population-based sample of 25-59 year olds in Denmark: a cross-sectional analysis. BMC Musculoskelet Disord 2018;19(1):300. doi: 10.1186/s12891-018-2183-7

Kiadaliri AA, Gerhardsson de Verdier M, Turkiewicz A, Lohmander LS, Englund M. Socioeconomic inequalities in knee pain, knee osteoarthritis, and health-related quality of life: a population-based cohort study in southern Sweden. Scand J Rheumatol 2017;46(2):143-151. doi: 10.1080/03009742.2016.1181203

Jayanthi NA, Holt DB Jr. LaBella CR, Dugas LR. Socioeconomic factors for sports specialization and injury in youth athletes. Sports Health 2018;10(4):303-310. doi: 10.1177/1941738118778510

Figure 2 Log-log survival plot to assess the assumption of proportionality of hazards for the Cox regression model

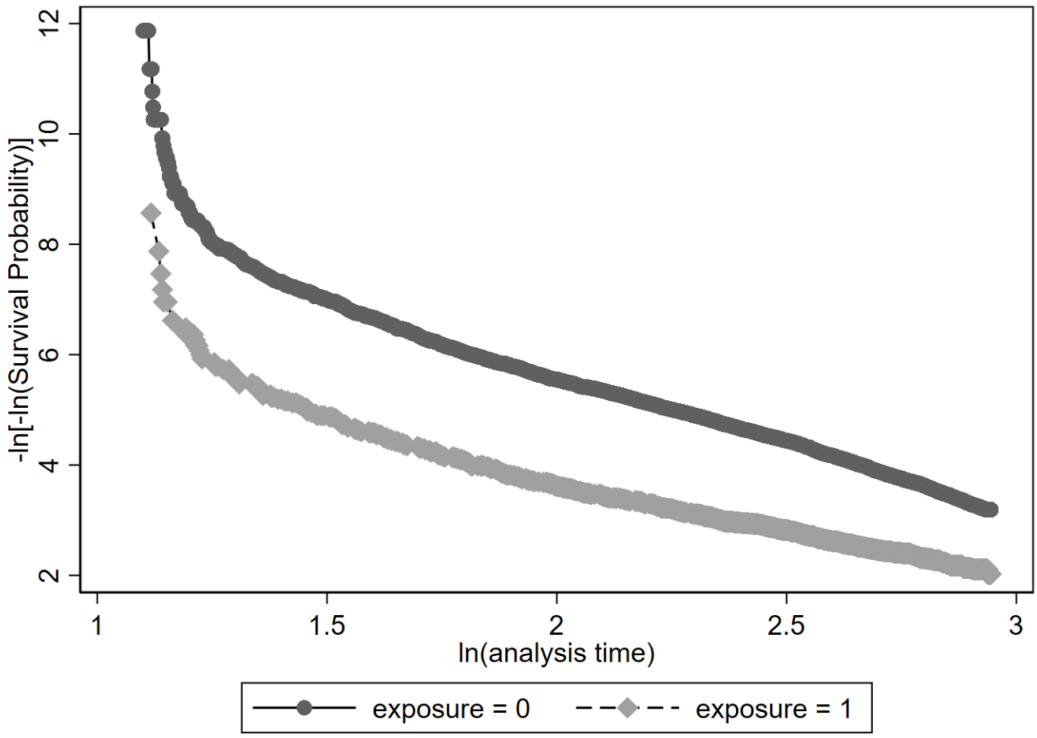


Figure 3 Frequency of main type of injury in injured persons

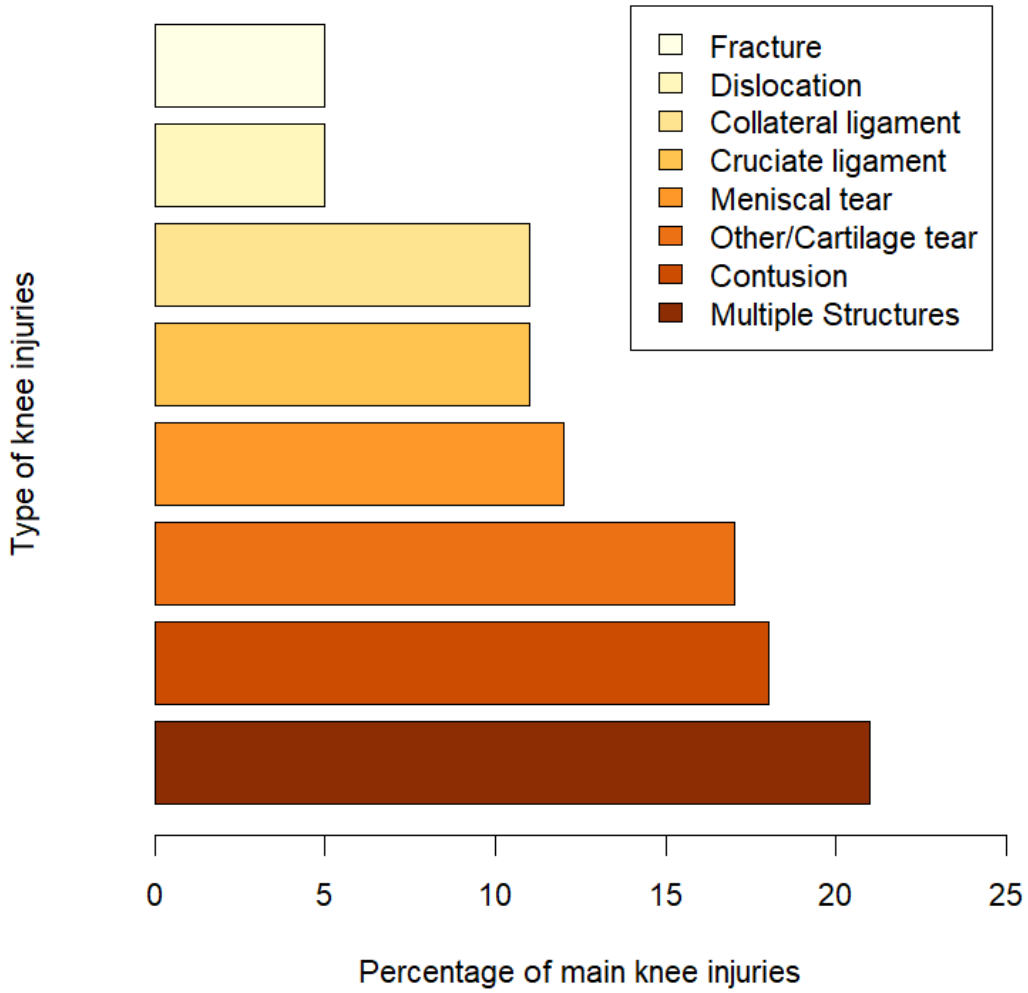


Table 2 Absolute frequencies and cumulative incidence of OA development at different follow-up times for persons with and without knee injury exposure

	Knee OA up to 5 years	Knee OA up to 10 years	Knee OA up to 15 years	Knee OA up to 19 years
No knee injury, n (%)* N=142,825	186 (0.1)	1045 (0.7)	2253 (2.1)	2854 (4.0)
Knee injury, n (%)* N=5,247	55 (1.1)	225 (4.4)	376 (8.3)	422 (11.3)
Specific knee injuries, n (%)*				
Cruciate ligament tear N=571	10 (1.8)	35 (6.2)	68 (13.2)	80 (18.3)
Meniscal tear N=610	10 (1.6)	35 (5.8)	57 (10.0)	65 (13.2)
Contusion N=955	5 (0.5)	22 (2.3)	45 (5.7)	49 (7.1)
Intra-articular fracture N=250	4 (1.6)	12 (4.9)	18 (8.2)	19 (10.4)
Dislocation N=284	5 (1.8)	11 (4.0)	20 (9.1)	21 (10.5)
Collateral ligament N=564	2 (0.4)	23 (4.1)	34 (6.7)	37 (8.1)
Multiple structures N=1,096	10 (0.9)	48 (4.4)	81 (8.3)	91 (10.9)
Cartilage tear/other injury N=917	9 (1.0)	39 (4.4)	53 (6.9)	60 (11.9)

OA=Osteoarthritis
*%=cumulative incidence