

Supplementary materials

Supplementary Table 1. Case definitions for identifying cohorts of inflammatory arthritis

Type of Inflammatory Arthritis	Administrative Data Case Definition
Rheumatoid Arthritis (RA)	3 OHIP diagnosis codes for RA (714) in 2 years with at least 1 by a rheumatologist or internal medicine specialist
Ankylosing Spondylitis (AS)	3 OHIP diagnosis codes for AS (720) in 2 years with at least 1 by a rheumatologist or internal medicine specialist
Psoriatic Arthritis (PsA)	3 OHIP diagnosis codes for other seronegative spondyloarthropathies (721) ever with at least 1 by a rheumatologist or internal medicine specialist and 1 OHIP diagnosis code for psoriasis (696) ever by any physician

Supplementary Table 2. OHIP codes (diagnosis / fee) for visits to physicians

Diagnosis /Fee codes	Description
Visits to family physicians and specialists for non-specific MSK symptoms (diagnosis codes) before index date	
274	gout
714*	rheumatoid arthritis, Still's disease
715	osteoarthritis
716	traumatic arthritis
718	Joint derangement, recurrent dislocation, ankylosis, meniscus or cartilage tear, loose body in joint
720*	ankylosing spondylitis
721*	other seronegative spondyloarthropathies
722	intervertebral disc disorder
724	lumbar strain, lumbago, coccydynia, sciatica
725	lumbar disc disease
726	spur
727	synovitis, tenosynovitis, bursitis, bunion, ganglion
728	Dupuytren's contracture
729	fibrositis, myositis, muscular rheumatism
734	flat foot, pes planus
735	hallux valgus, hallux varus, hammer toe
737	scoliosis, kyphosis, lordosis
739	other disease of MSK system and connective tissue
781	leg cramps, leg pain, muscle pain, joint pain, arthralgia, joint swelling, masses
840	sprain of the shoulder, upper arm
841	sprain of the elbow
842	sprain of the wrist, hand, fingers
843	sprain of the sacro-iliac, strain - hip
844	Strain of the knee, leg
845	Strain of the ankle, foot, toes
847	Strain of the neck, low back, coccyx
848	Other sprains and strains
Visits to Emergency Departments for non-specific MSK symptoms (diagnosis codes) before index date	
M10.4-M10.9	gout
M13.0-M13.9	poly- mono-arthritis unspecified
M15.0-M15.9	polyarthrosis
M16.0-M16.9	arthrosis of hip
M17.0-M17.9	arthrosis of knee
M18.0-M18.9	arthrosis of the first CMC
M19.0-M19.9	other arthrosis
M20.0-M20.6	deformities of the fingers/toes
M21.0-M21.9	other deformities of limbs
M24.0-M24.9	other joint derangement

M25.4-M25.9	Effusion, pain and stiffness in joint
M40-M43	deforming dorsopathies
M46-M48	spondylopathies
M54.1-M54.9	Dorsalgia
M65.2-M65.9	tendon abnormalities
M67.0-M67.9	other disorders of synovium
M70.0-M70.9	other soft tissue disorder
M71.2-M71.9	bursa disorder
M75.0-M75.9	Shoulder lesions
M76.0-M76.9	enthesopathies of lower limbs
M77.0-M77.9	other enthesopathies
M79.0, M79.6-M79.9	other soft tissue disorder
S13.4, S13.6	strain/sprain of cervical spine
S23.1-S23.5	strain/sprain of joints/ligaments of thorax
S33.1-S33.7	strain/sprain of joints of the lumbar spine/pelvis
S43.4-S43.7	strain shoulder
S53.4	strain elbow
S63.5-S63.7	strain wrist/fingers
S73.1	strain hip
S83.2-S83.6	strain/sprain knee
S93.4-S93.6	sprain/strain ankle
Visits to rheumatologist (fee codes) after index date	
A485	Consultation
A590	Comprehensive rheumatology consultation
A595	Limited consultation
A486	Repeat consultation
A483	Medical specific assessment
A484	Medical specific re-assessment
A481	Complex medical specific re-assessment
A488	Partial assessment
A480	Complex rheumatology assessment
K481	Rheumatoid arthritis management by a specialist

*These codes were excluded when calculating proportion of visits to rheumatologists for non-specific MSK symptoms before index date

Supplementary Table 3. OHIP fee codes for musculoskeletal imaging and laboratory tests

Fee codes for MSK Imaging	Description
X-rays	
X020, X025, X027, X028, X032, X034, X035, X202, X203, X204, X205, X206, X207, X208	Spine
X036, X037, X038, X060	Hip
X065, X224, X225	Knee
X067, X227	Ankle
X069, X072, X229, X230	Foot
X046, X048, X210, X212	Shoulder
X050, X051, X214, X215, X216	Elbow
X052, X053, X217, X218	Wrist
X054, X055, X056, X219, X220, X221	Hand
CT scan	
X127, X412, X413	Extremities
X128, X415, X416	Spine
MRI	
X471, X475, X488, X489	Extremities
X490, X492, X493, X495, X496, X498	Spine
Ultrasound	
J182	Joints
Fee codes for Laboratory Tests	
L451	Erythrocyte Sedimentation Rate (ESR)
L665	C-reactive protein (CRP)
L500	Rheumatoid factor (RF)
L393	Complete blood count (CBC)
L067	Serum Creatinine
L251	Blood Urea
L222	Alanine aminotransferase (ALT)
L223	Aspartate aminotransferase (AST)
L005	Albumin
L191	Alkaline phosphatase
L445	Prothrombin time
L151	Serum Lipid (total)
L117	High density lipoprotein – cholesterol (HDL-C)
L243	Serum Triglycerides (TG)
L055	Serum Cholesterol

Supplementary Table 4. Visits to Physicians in patients with Rheumatoid Arthritis, by age group and sex of the patients

Visits to Physicians	20–65 year-age group			>65 year-age group		
	Male N (%)	Female N (%)	Adjusted Odds Ratio (95% CI)	Male N (%)	Female N (%)	Adjusted Odds Ratio (95% CI)
Before diagnosis						
Visits to Family Physicians for MSK reasons						
Year 3	3,060 (39.1)	8,365 (42.2)	1.02 (0.97, 1.08)	1,956 (40.2)	4,102 (46.9)	1.29 (1.20, 1.39)
Year 2	3,397 (43.4)	9,167 (46.2)	1.01 (0.95, 1.06)	2,214 (45.5)	4,552 (52.1)	1.29 (1.20, 1.39)
Year 1	6,201 (79.2)	15,828 (79.8)	1.00 (0.94, 1.07)	3,943 (81.0)	7,039 (80.5)	0.98 (0.89, 1.07)
Visits to Rheumatologists for non-specific MSK causes						
Year 3	364 (4.6)	1,382 (7.0)	1.47 (1.30, 1.66)	276 (5.7)	813 (9.3)	1.65 (1.43, 1.90)
Year 2	504 (6.4)	1,679 (8.5)	1.28 (1.15, 1.42)	400 (8.2)	1,003 (11.5)	1.41 (1.25, 1.59)
Year 1	2,070 (26.4)	5,682 (28.7)	1.07 (1.01, 1.14)	1,557 (32.0)	2,811 (32.1)	1.00 (0.92, 1.08)
Visits to other MSK-specialists						
Year 3	727 (9.3)	1,774 (8.9)	0.92 (0.83, 1.01)	643 (13.2)	1,318 (15.1)	1.15 (1.04, 1.28)
Year 2	821 (10.5)	2,064 (10.4)	0.95 (0.87, 1.04)	693 (14.2)	1,386 (15.8)	1.11 (1.01, 1.23)
Year 1	1,233 (15.7)	2,892 (14.6)	0.89 (0.82, 0.96)	929 (19.1)	1,762 (20.1)	1.05 (0.96, 1.15)
Visits to Emergency for MSK reasons						
Year 3	456 (5.8)	1,132 (5.7)	0.85 (0.76, 0.96)	252 (5.2)	497 (5.7)	1.07 (0.91, 1.26)
Year 2	586 (7.5)	1,390 (7.0)	0.82 (0.74, 0.91)	335 (6.9)	576 (6.6)	0.95 (0.83, 1.10)
Year 1	1,429 (18.2)	3,013 (15.2)	0.71 (0.66, 0.76)	898 (18.4)	1,420 (16.2)	0.84 (0.76, 0.92)
After diagnosis						
Visits to Rheumatologists						
Year 1	6,090 (78.4)	16,097 (81.4)	1.23 (1.15, 1.31)	3,691 (78.2)	6,885 (80.5)	1.17 (1.07, 1.28)
Year 2	5,091 (66.0)	14,013 (71.1)	1.33 (1.25, 1.41)	3,112 (68.6)	5,889 (70.9)	1.12 (1.04, 1.22)
Year 3	4,670 (61.0)	12,998 (66.2)	1.31 (1.24, 1.39)	2,703 (62.7)	5,286 (66.0)	1.17 (1.09, 1.27)

Note: CI, Confidence Interval; MSK, Musculoskeletal

Supplementary Table 5. Visits to Physicians in patients with Ankylosing Spondylitis, by age group and sex of the patients

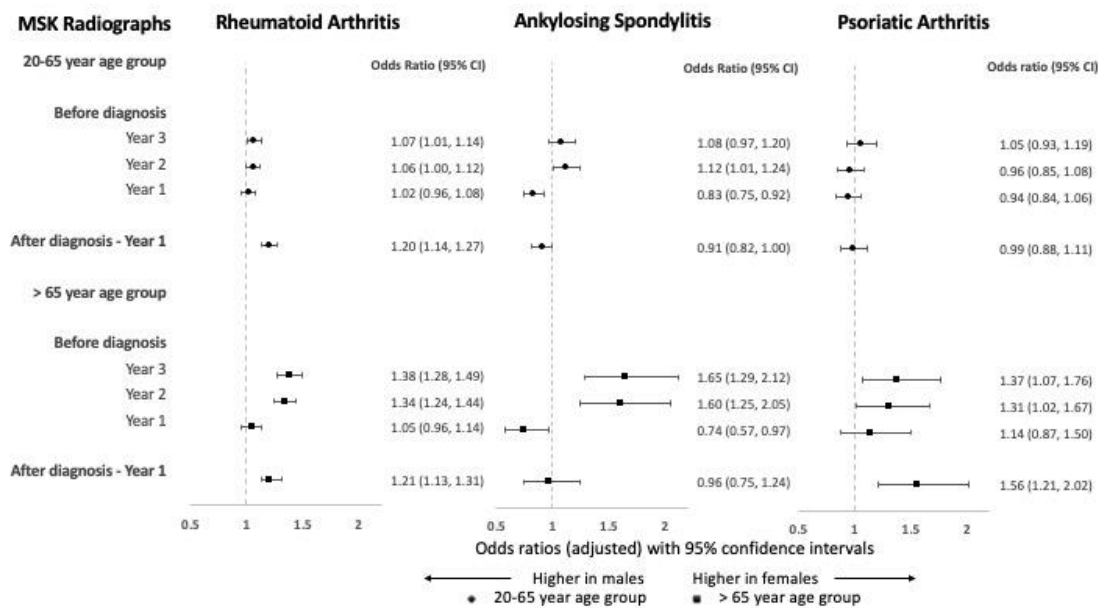
Visits to Physicians	20–65 year-age group			>65 year-age group		
	Male N (%)	Female N (%)	Adjusted Odds Ratio (95% CI)	Male N (%)	Female N (%)	Adjusted Odds Ratio (95% CI)
Before diagnosis						
Visits to Family Physicians for MSK reasons						
Year 3	1,406 (40.6)	1,668 (46.2)	0.99 (0.90, 1.10)	251 (47.4)	300 (54.7)	1.33 (1.04, 1.70)
Year 2	1,510 (43.6)	1,828 (50.6)	1.06 (0.96, 1.17)	226 (42.7)	293 (53.5)	1.57 (1.22, 2.01)
Year 1	2,598 (75.1)	2,608 (72.2)	0.78 (0.69, 0.87)	382 (72.2)	374 (68.2)	0.83 (0.64, 1.08)
Visits to Rheumatologists for non-specific MSK causes						
Year 3	162 (4.7)	358 (9.9)	1.83 (1.50, 2.24)	36 (6.8)	112 (20.4)	3.56 (2.38, 5.30)
Year 2	173 (5.0)	412 (11.4)	2.03 (1.68, 2.46)	42 (7.9)	123 (22.4)	3.35 (2.30, 4.88)
Year 1	719 (20.8)	1,128 (31.2)	1.53 (1.37, 1.71)	123 (23.3)	172 (31.4)	1.52 (1.16, 2.00)
Visits to other MSK-specialists						
Year 3	225 (6.5)	314 (8.7)	1.06 (0.88, 1.27)	68 (12.9)	104 (19.0)	1.53 (1.09, 2.15)
Year 2	255 (7.4)	374 (10.4)	1.15 (0.97, 1.37)	55 (10.4)	97 (17.7)	1.79 (1.25, 2.57)
Year 1	413 (11.9)	476 (13.2)	0.91 (0.79, 1.06)	85 (16.1)	119 (21.7)	1.43 (1.05, 1.96)
Visits to Emergency for MSK reasons						
Year 3	171 (4.9)	235 (6.5)	1.08 (0.88, 1.34)	27 (5.1)	29 (5.3)	1.00 (0.58, 1.74)
Year 2	177 (5.1)	250 (6.9)	1.10 (0.89, 1.35)	29 (5.5)	31 (5.7)	1.04 (0.62, 1.76)
Year 1	431 (12.5)	424 (11.7)	0.76 (0.65, 0.88)	53 (10.0)	56 (10.2)	0.97 (0.65, 1.46)
After diagnosis						
Visits to Rheumatologists						
Year 1	2,765 (80.0)	2,776 (76.9)	0.87 (0.77, 0.99)	357 (68.8)	338 (62.8)	0.77 (0.59, 1.01)
Year 2	2,245 (65.2)	2,428 (67.3)	1.12 (1.01, 1.25)	277 (55.0)	334 (62.8)	1.48 (1.14, 1.93)
Year 3	1,913 (55.7)	2,123 (59.0)	1.15 (1.04, 1.27)	241 (50.3)	311 (59.9)	1.56 (1.20, 2.03)

Note: CI, Confidence Interval; MSK, Musculoskeletal
 Bolded results are statistically significant

Supplementary Table 6. Visits to Physicians in patients with Psoriatic Arthritis, by age group and sex of the patients

Visits to Physicians	20–65 year-age group			>65 year-age group		
	Male N (%)	Female N (%)	Adjusted Odds Ratio (95% CI)	Male N (%)	Female N (%)	Adjusted Odds Ratio (95% CI)
Before diagnosis						
Visits to Family Physicians for MSK reasons						
Year 3	864 (34.8)	1,191 (41.9)	1.11 (0.99, 1.25)	189 (39.5)	309 (48.4)	1.37 (1.07, 1.75)
Year 2	995 (40.0)	1,265 (44.5)	1.00 (0.89, 1.12)	204 (42.7)	334 (52.4)	1.33 (1.04, 1.70)
Year 1	1,639 (66.0)	1,931 (67.9)	0.95 (0.84, 1.07)	327 (68.4)	429 (67.2)	0.86 (0.66, 1.12)
Visits to Rheumatologists for non-specific MSK causes						
Year 3	105 (4.2)	206 (7.2)	1.52 (1.19, 1.95)	24 (5.0)	78 (12.2)	2.42 (1.50, 3.90)
Year 2	118 (4.7)	244 (8.6)	1.65 (1.31, 2.07)	42 (8.8)	92 (14.4)	1.64 (1.11, 2.42)
Year 1	457 (18.4)	673 (23.7)	1.22 (1.06, 1.40)	127 (26.6)	200 (31.3)	1.18 (0.91, 1.55)
Visits to other MSK-specialists						
Year 3	209 (8.4)	285 (10.0)	0.98 (0.81, 1.19)	74 (15.5)	104 (16.3)	1.00 (0.72, 1.39)
Year 2	234 (9.4)	321 (11.3)	1.00 (0.83, 1.21)	66 (13.8)	110 (17.2)	1.20 (0.86, 1.68)
Year 1	352 (14.2)	404 (14.2)	0.86 (0.73, 1.01)	83 (17.4)	135 (21.2)	1.17 (0.86, 1.59)
Visits to Emergency for MSK reasons						
Year 3	103 (4.1)	140 (4.9)	0.95 (0.73, 1.25)	28 (5.9)	30 (4.7)	0.74 (0.43, 1.27)
Year 2	108 (4.3)	174 (6.1)	1.17 (0.91, 1.50)	27 (5.6)	45 (7.1)	1.15 (0.70, 1.88)
Year 1	267 (10.7)	292 (10.3)	0.80 (0.67, 0.96)	45 (9.4)	70 (11.0)	1.09 (0.73, 1.63)
Visits to Dermatologists for psoriasis						
Year 3	431 (17.3)	444 (15.6)	0.82 (0.71, 0.95)	75 (15.7)	96 (15.0)	0.89 (0.64, 1.25)
Year 2	483 (19.4)	453 (15.9)	0.71 (0.62, 0.82)	85 (17.8)	91 (14.3)	0.75 (0.54, 1.04)
Year 1	742 (29.9)	773 (27.2)	0.82 (0.73, 0.93)	103 (21.5)	140 (21.9)	1.00 (0.74, 1.34)
After diagnosis						
Visits to Rheumatologists						
Year 1	2,145 (86.5)	2,465 (86.7)	1.03 (0.88, 1.22)	399 (83.8)	536 (84.4)	1.01 (0.72, 1.40)
Year 2	1,643 (66.4)	1,990 (70.1)	1.20 (1.06, 1.35)	341 (73.0)	457 (73.2)	0.98 (0.74, 1.29)
Year 3	1,561 (63.3)	1,887 (66.6)	1.16 (1.03, 1.30)	307 (67.8)	412 (67.9)	0.95 (0.73, 1.24)
Visits to Dermatologists for psoriasis						
Year 1	775 (31.2)	823 (28.9)	0.89 (0.79, 1.00)	109 (22.9)	136 (21.4)	0.88 (0.66, 1.18)
Year 2	581 (23.5)	635 (22.4)	0.91 (0.80, 1.04)	84 (18.0)	104 (16.7)	0.89 (0.64, 1.22)
Year 3	576 (23.4)	596 (21.0)	0.84 (0.74, 0.97)	75 (16.6)	93 (15.3)	0.86 (0.61, 1.20)

Note: CI, Confidence Interval; MSK, Musculoskeletal
 Bolded results are statistically significant



Supplementary Figure 1. Adjusted odds ratios (95% confidence intervals) for musculoskeletal radiographs for female patients compared with male patients by IA and age group. Error bars represent 95% confidence intervals. ORs > 1 indicate higher odds in females and ORs < 1 indicate higher odds in males.