macrophages, Lysm^{cre} x Csfr1-Stop-DTR were injected intrathecal or systemically with diphtheria toxin (DT).

Results: Intraarticular monoiodoacetate injection induced OA and signs of persistent pain, such as mechanical hyperalgesia and deficits in weight bearing. The persisting pain-like behaviors were associated with accumulation of F4/80⁺ macrophages with an M1-like phenotype in the lumbar DRG appearing from 1 week after MIA injection, and that persisted till at least 4 weeks after MIA injection. Macrophages infiltrated DRG were also observed in the rat groove model of OA, 12 weeks after application of a groove at the femoral condyles. Systemic or local depletion of DRG macrophages during established MIA-induced OA completely ablated signs of pain, without affecting MIA-induced knee pathology. Intriguingly when monocytes/macrophages were depleted prior to induction of osteoarthritis, pain-like behaviors still developed, however these pain-like behaviors did not persist over time. *In vitro*, sensory neurons innervating the affected OA joint programmed macrophages into a M1 phenotype. Local repolarization of M1-like DRG macrophages towards M2 by intrathecal injection of M2 macrophages or anti-inflammatory cytokines resolved persistent OA-induced pain.

Conclusion: Overall we show that macrophages infiltrate the DRG after knee damage and acquire a M1-like phenotype and maintain pain independent of the lesions in the knee joint. DRG-infiltrating macrophages are not required for induction of OA pain. Reprogramming M1-like DRG-infiltrating macrophages may represent a potential strategy to treat OA pain.

Acknowledgments: This project has received funding from the European Union's Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie grant agreements No 814244 and No 642720. Dutch Arthritis Society

Disclosure of Interests: Ramin Raouf: None declared, Christian Martin: None declared, Huub de Visser: None declared, Judith Prado: None declared, Sabine Versteeg: None declared, Anne Heinemans: None declared, Simon Mastbergen: None declared, Floris Lafieber Shareholder of: Co-founder and shareholder of ArthroSave BV, Niels Eijkelkamp: None declared

DOI: 10.1136/annrheumdis-2020-eular.4354

OP0084 PRESSURE PAIN THRESHOLDS AND THE ASSOCIATIONS WITH CHRONIC WIDESPREAD PAIN, KNEE OSTEOARTHRITIS AND OBESITY IN INDIVIDUALS WITH KNEE PAIN

C. Sylwander^{1,2}, E. Haglund^{1,3,4}, I. Larsson^{1,2,4}, S. Bergman^{1,4,5}, M. Andersson^{1,4}. ¹Spenshult Research and Development Centre, Halmstad, Sweden; ²Halmstad University, School of Health and Welfare, Halmstad, Sweden; ³Halmstad University, School of Business, Engineering and Science, Halmstad, Sweden; ⁴Lund University, Department of Clinical Sciences, Section of Rheumatology, Lund, Sweden; ⁵The Sahlgrenska Academy, University of Gothenburg, Primary Health Care Unit, Department of Public Health and Community Medicine, Institute of Medicine, Gothenburg, Sweden

Background: Approximately 30% of individuals with symptomatic knee osteoarthritis (OA) had developed chronic widespread pain (CWP) over a period of 20 years [1]. In order to prevent CWP in those with knee pain, it is important to study associated factors.

Figure 1 Differences in mean PPT in the eight tender points

Objectives: The aim was to study pressure pain thresholds among individuals with knee pain with or without radiographic changes, and associations with CWP, radiographic knee OA, and obesity.

Methods: Out of 300 individuals with knee pain (with or without radiographic changes) from an ongoing longitudinal study, 279 conducted pressure pain thresholds (PPT) measurement at baseline in this cross-sectional study (71% women; mean age 51 years). The PPT were measured using a computerized pressure algometry on eight predefined tender points (Figure 1) out of the 18 points as part of the definition of fibromyalgia [2]. PPTs were dichotomised based on the lowest tertial vs the two higher tertials for each of the eight points. A group that had ≥ 4 points with low PPT (low PPT group) was compared to a group that had < 4 low PPT (not low PPT group). A pain mannequin categorised the participants in three different pain groups: CWP, chronic regional pain (CRP), and no chronic pain (NCP) according to the definition of the ACR [2]. Radiographic knee OA was defined according to the Ahlbäck five grading scale as having score ≥ 1 vs score 0 [3]. Obesity was measured by bioimpedance measuring BMI and visceral fat area (VFA, cm²). To study associations, a crude logistic regression model controlled for age and sex was used including main and significant variables

Results: The prevalence of CWP was 37% and higher in the low PPT group compared to those in the not low PPT group (Table 1). No differences were found between the groups in BMI, VFA or radiographic knee OA (Table 1). The low PPT group had significantly lower mean PPT on all eight tender points, was younger, had more pain sites, and more cases of fibromyalgia compared to the group with not low PPT (Table 1, Figure 1). Age (OR 0.95; 95% CI 0.92–0.97), having CWP (OR 3.00; CI 1.66–5.06), fibromyalgia (OR 21.91; CI 2.45–194.69) and increased number of pain sites (OR 1.13; CI 1.05–1.22) were associated with low PPT.

Table 1. Descriptive statistics for the whole sample and for the groups: low PPT and not low PPT

	All n = 279	Low PPT n = 99	Not low PPT n = 180	p-value
Age, mean years (sd)	51 (9)	49 (9)	53 (8)	<0.001
Women, n (%)	197 (71%)	69 (70%)	128 (71%)	0.804
Pain group, n (%)				<0.001
NCP/CRP	160 (63%)	41 (47%)	119 (71%)	
CWP	95 (37%)	46 (53%)	49 (29%)	
Numbers of pain sites, mean (sd)	5 (4)	6 (5)	4 (3)	0.003
Fibromyalgia, n (%)	8 (3%)	7 (9%)	1 (1%)	0.001
Knee OA Ahlbäck, n (%)	59 (23%)	16 (18%)	43 (26%)	0.132
BMI, n (%)	127 (48%)	42 (47%)	85 (48%)	0.801
Normal	139 (52%)	48 (53%)	91 (52%)	
Overweight/Obese	114 (54)	115 (51)	113 (55)	0.788

Conclusion: Baseline characteristics of individuals with knee pain showed a higher prevalence of CWP than in the general population [4]. In the group with low PPT, the prevalence was even higher. The study found associations between CWP and low PPT, however, almost half of the individuals with low PPT reported NCP/CRP. Moreover, a third in the group that not had low PPT reported CWP. The development of widespread pain in individuals with knee pain needs to be further studied over time to increase the knowledge of CWP's origin in order to prevent the condition.

References:

- [1] Bergman et al. BMC Musculoskelet Disord. 2019;20:592
- [2] Wolfe et al. Arthritis Rheum. 1990;33:160-72
- [3] Ahlbäck. Acta Radiol Diagn (Stockh). 1968;7:72
- [4] Andrews et al. Eur J Pain. 2018;22:5-18

Disclosure of Interests: None declared

DOI: 10.1136/annrheumdis-2020-eular.2289

OP0085 THE CHANGING STATES OF FIBROMYALGIA IN A LONGITUDINAL COHORT OF PATIENTS WITH AXIAL SPONDYLOARTHRITIS

S. Aarrestad Provan^{1,2}, L. Dean¹, G. T. Jones¹, G. Macfarlane¹. ¹University of Aberdeen School of Medicine, Medical Sciences and Nutrition, Epidemiology Group, Aberdeen, United Kingdom; ²University of Aberdeen School of Medicine, Medical Sciences and Nutrition, Aberdeen, United Kingdom

Background: The identification of predictors for longitudinal fibromyalgia (FM) development has been identified as a research priority in a recent systematic review and meta-analyses (1). This paper examines the