macrophages, Lysm<sup>−/−</sup> x Csf1r<sup>-/-</sup>-Stop-DTR were injected intrathecally or systemically with dipheria toxin (DT).

**Results:** Intraarticular monoidoacetate 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<sup>+</sup> 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 grove model of OA, 12 weeks after application of a groove at the femoral condyles. Systemic or local depletion of DRG macrophages during established MIA-in-duced 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 Raof: None declared, Christian Martin: None declared, Huub de Visser: None declared, Judith Prado: None declared, Sabine Sklodowska-Curie: None declared, Floris Lafeber Shareholder of: Co-founder and shareholder of ArthroSave BV, Niels Eijkelkamp: None declared

**DOI:** 10.1136/annrheumdis-2020-eular.4354

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

<table>
<thead>
<tr>
<th></th>
<th>All n = 279</th>
<th>Low PPT n = 99</th>
<th>Not low PPT n = 180</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age, mean years (sd)</td>
<td>51 (9)</td>
<td>49 (9)</td>
<td>53 (8)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Women, n (%)</td>
<td>197 (71%)</td>
<td>69 (70%)</td>
<td>128 (71%)</td>
<td>0.904</td>
</tr>
<tr>
<td>Pain group, n (%)</td>
<td>160 (63%)</td>
<td>41 (47%)</td>
<td>119 (71%)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>NCP/CRP</td>
<td>95 (37%)</td>
<td>46 (53%)</td>
<td>49 (29%)</td>
<td></td>
</tr>
<tr>
<td>Numbers of pain sites, mean (sd)</td>
<td>5 (4)</td>
<td>6 (6)</td>
<td>4 (3)</td>
<td>0.003</td>
</tr>
<tr>
<td>Fibromyalgia, n (%)</td>
<td>8 (3%)</td>
<td>7 (9%)</td>
<td>1 (1%)</td>
<td>0.001</td>
</tr>
<tr>
<td>Knee OA Ahlbäck, n (%)</td>
<td>59 (23%)</td>
<td>16 (18%)</td>
<td>43 (26%)</td>
<td>0.132</td>
</tr>
<tr>
<td>BMI, n (%)</td>
<td>127 (48%)</td>
<td>42 (47%)</td>
<td>85 (48%)</td>
<td>0.801</td>
</tr>
<tr>
<td>Normal Overweight/Obese</td>
<td>139 (52%)</td>
<td>48 (53%)</td>
<td>91 (52%)</td>
<td></td>
</tr>
<tr>
<td>VFA, mean cm&lt;sup&gt;2&lt;/sup&gt;</td>
<td>114 (54)</td>
<td>115 (51)</td>
<td>113 (55)</td>
<td>0.788</td>
</tr>
</tbody>
</table>

**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:**

**Disclosure of Interests:** None declared

**DOI:** 10.1136/annrheumdis-2020-eular.2289

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**Figure 1** Differences in mean PPT in the eight tender points

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**OP008S**

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

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**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

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**Disclosure of Interests:** None declared

**DOI:** 10.1136/annrheumdis-2020-eular.1178 on 2 June 2020. Downloaded from http://ard.bmj.com/ on September 17, 2023 by guest. Protected by copyright.
The longitudinal development of, or recovery from, FM in patients with axial Spondyloarthritis (axSpA).

**Objectives:** To identify predictors for FM development and recovery in patients with axSpA.

**Methods:** The British Society of Rheumatology Biologics Register (BSRBR-AS) recruited patients with axSpA from 83 centres in a prospective study. Fibromyalgia was diagnosed using the self-reported Fibromyalgia Survey Diagnostic Criteria (FSDC). Measures of axSpA disease activity and clinical findings were recorded at regular intervals. We identified predictors for developing FM, and for recovering from FM, between yearly visits using uni- and multivariate logistical regression models.

**Results:** Eight hundred and one patients had two or more visits and were eligible for inclusion. 686 patients did not have FM at baseline, of whom 45 had developed FM by follow-up. 115 patients had FM at baseline, of whom 77 had recovered by follow-up. The uni- and multivariate models are presented in table 1.

**Conclusion:** The development of FM in patients with axSpA can be predicted by high levels of axSpA activity and presence of widespread pain, while low levels of the same variables, and starting a TNF-inhibitor predict recovery from FM. The presence of co-morbid FM should be considered in patients with a history of high axSpA disease activity and widespread pain.

**References:**

**Disclosure of Interests:** Sella Arestatad Provan Consultant of: Novartis, Linda Dean: None declared, Gareth T. Jones Grant/research support from: Pfizer, Abb-Vie, UCB, Celgene and GSK., Gary Macfarlane: None declared

**DOI:** 10.1136/annrheumdis-2020-eular.1179

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**THE DEGREE OF BONE MARROW EDEMA AS DETECTED BY MAGNETIC RESONANCE IMAGING IN THE SACROILIAC JOINTS AND THE SPINE, SUSPICIOUS OF AXIAL SPONDYLOARTHRITIS IN THE GENERAL POPULATION IS ASSOCIATED WITH DIFFERENT FACTORS**

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**Background:** Taking advantage of a large population-based study we have recently reported that the frequency of bone marrow edema (BME) and fatty lesions (FL) in the sacroiliac joints (SIJ) and the spine of individuals <45 years detected by magnetic resonance imaging (MRI) suggestive of axial spondyloarthritis (axSpA) is higher than expected.

**Objectives:** To identify and compare factors associated with the extension of MRI lesions in the spine and the SIJ in the general population.

**Methods:** All available spinal- (sagittal T1/T2 sequences) and SIJ- (semicoronal STIR sequences) MRIs were evaluated by two trained readers blinded to clinical data. BME (SIJ and spine) suggestive of axSpA were recorded. The extension of BME was quantified using the Berlin MRI score. Discrepancies were resolved by consensus. Degenerative lesions of the Modic type were excluded. The association of age (increase per decade), sex, HLA-B27 and hsCRP positivity, smoking (ever smoker vs. no smoker), spinal pain (yes vs. no in last 3 months), body mass index (BMI) categories (WHO definition), physically demanding job, and giving birth within the last 12 month with the severity of BME were examined. Associations between clinical factors and the Berlin MRI score were analyzed by negative binomial regression models resulting in incidence rate ratios (IRRs).

**Results:** MRIs of 793 volunteers from the general population, mean age 37.3±6.3 years, 49.4% male, 8.9% HLA-B27+, 7% CRP-positive, 56.9% with back pain in the last 3 months (28.8% with back pain NRS ≥4/10), 35.7% reported physically heavy work, 55% with BMI >25 kg/m², 16.2% current smokers, and 5% of females with pregnancy in the last year before MRI examination, were evaluated.

For BME on SIJ-MRIs, significant associations (IRR, 95% confidence level) were found for age (man: 3,67 (2.01-9.34/10) and woman: 1.29, 0.95-1.77) showed no association. Overall, spinal BME was more frequent than SIJ BME in the participants working at a desktop (61.5% vs. 54.4%), while smokers (66.9% vs. 63.8%) and participants with back pain in the last 3 months (62.5% vs. 56.9%) had more often SIJ BME than spinal BME, respectively.

**Conclusion:** In this population-based study, individuals aged <45 years, HLA-B27+, women with pregnancy in the last year and presence of back pain were associated with the extent of BME in the SIJ, while age and physically demanding work were associated with the extent of BME in the spine. These data support the hypothesis of a mechanic origin of BME in the general population aged <45 years, while HLA B27 is a severity but not a susceptibility factor for BME in the SIJ.

**Acknowledgments:** n/a

**Disclosure of Interests:** Xenofon Baraliakos Grant/research support from: Grant/research support from: AbbVie, BMS, Celgene, Chugai, Merck, Novartis, Pfizer, UCB and Werfen, Consultant of: AbbVie, BMS, Celgene, Chugai, Merck, Novartis, Pfizer, UCB and Werfen, Speakers bureau: Abb-Vie, BMS, Celgene, Chugai, Merck, Novartis, Pfizer, UCB and Werfen, Adrian Richter: None declared, Daniel Feldmann: None declared, Anne Ott: None declared, Robin Buelow: None declared, Carsten Schmidt: None declared, Jürgen Braun Grant/research support from: Abbvie (Abbott), Amgen, BMS, Boehringer, Celgene, Celtrion, Centocor, Chugai, Eli Lilly and Company, Medac, MSD (Schering-Plough), Mundipharma, Novartis, Pfizer (Wyeth), Roche, Sanofi- Aventis, and UCB Pharma, Consultant of: Abbvie (Abbott), Amgen, BMS, Boehringer, Celgene, Celtrion, Centocor, Chugai, EBEWE Pharma, Eli Lilly and Company, Medac, MSD (Schering-Plough), Mundipharma, Novartis, Pfizer (Wyeth), Roche, Sanofi-Aventis, and UCB Pharma, Speakers bureau: Abbvie (Abbott), Amgen, BMS, Boehringer, Celgene, Celtrion, Centocor, Chugai, EBEWE Pharma, Eli Lilly and Company, Medac, MSD (Schering-Plough), Mundipharma, Novartis, Pfizer (Wyeth), Roche, Sanofi-Aventis, and UCB Pharma

**DOI:** 10.1136/annrheumdis-2020-eular.9236