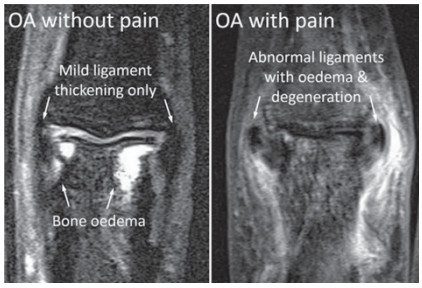
research aims to see if small joint collateral ligament abnormalities are worth exploring further in relationship to pain in HOA.
**Methods:** High-resolution contrast enhanced MRI of 26 joints in 15 patients (mean (SD) age 58.3 (8.2), 13F:2M) and 10 in 5 healthy controls (age 38 (5.6); 4F:1M) were scanned using a microscopy MRI coil. 15 joints in 8 patients were painful [median (IQR) pain VAS 4 (3, 7)). Joints were scored blinded to clinical data for joint fluid, capsule/synovitis, extracapsular oedema, collateral ligament thickening/oedema/degeneration, extensor and flexor tendons, bone oedema and cysts. All structures were graded 0–3 for normal, mild, moderate, severe, as defined in OMERACT HOAMRIS where available [2]. Proportions of joints with any level of abnormality (score>0) were calculated according to pain status (present/absent).
**Results:** All OA patients with and without pain had ligament abnormalities. Substantive differences in proportion of joints between healthy controls and OA patients were seen for all pathologies except tendons (no tendon abnormalities were found in all groups). Proportions of joints with capsular/synovium, extra capsular changes and proximal cysts differed between OA joints with and without pain but no substantive differences in pathology score were found. Of painful joints, 93% (14) had both ligament and capsular/synovium or extracapsular abnormality present, compared to 45% (5) of non-painful joints.




**Conclusions:** Modifiable abnormalities involving capsular/synovium and extra-capsular areas may be more frequently seen in painful OA joints. The presence of collateral ligament abnormalities in HOA joints, whether painful or not, suggest that the severity of ligament abnormalities in small joint OA and the degree of pain may be an important area to investigate further.
**References:**
[1] Tan AL, et al. Ann Rheum Dis. 2006 Oct;65(10):1267–72.
[2] Haugen IK, et al. J Rheumatol. 2014 Feb;41(2):386–91.
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**Disclosure of Interest:** None declared
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## OP0342 ASSESSMENT OF STRUCTURAL DAMAGE OF THE THUMB BASE IN PATIENTS WITH HAND OSTEOARTHRITIS: COMPARING THE NEWLY DEVELOPED OMERACT MAGNETIC RESONANCE IMAGING SCORING SYSTEM WITH STANDARD RADIOGRAPHY

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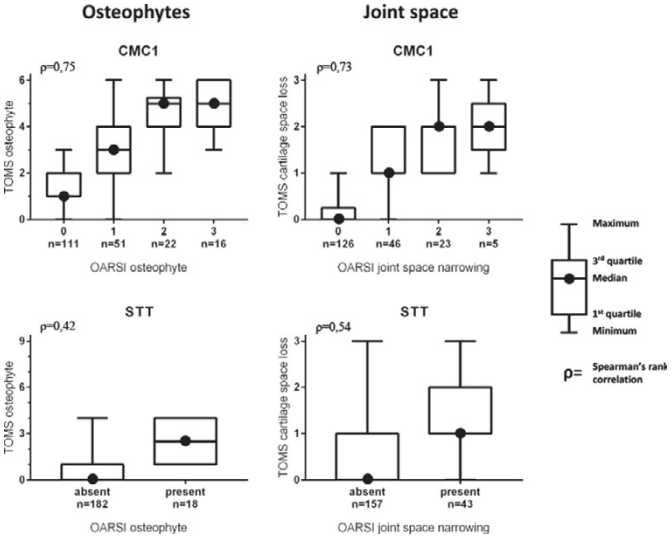
**Background:** The thumb base is frequently involved in patients with hand osteoarthritis (OA), resulting in osteophytes and cartilage loss. Radiography is the most commonly used imaging modality to evaluate structural OA signs, however it is insensitive especially due to overprojection. Magnetic resonance imaging (MRI) could be a valuable alternative, however a standardized scoring method for thumb base MR images did not exist until recently OMERACT developed the thumb base OA MRI scoring system (TOMS)[1].
**Objectives:** Our aim was to investigate the validity of the new TOMS by comparing TOMS scores with radiographic scores.
**Methods:** Two hundred consecutively included patients (83.5% women, median age 60.5 years) diagnosed with primary hand OA in secondary care, who had both a dorsopalmar radiograph of the right hand and a MRI scan of the right thumb base taken at baseline, were studied. T1- and fat suppressed T2-turbo spin weighted sequences were performed in axial and coronal planes on a 1.5 Tesla extremity MRI unit. Radiographs of the first carpometacarpal (CMC1) and scaphotrapeziotrapezoid (STT) joints were scored using the OARSI atlas (osteophytes and joint space narrowing [JSN] in CMC1: 0–3 and STT: absent/present) by one reader with good intra-reader reliability, blinded for clinical and MRI data. MR images were scored using TOMS (osteophytes in CMC1: 0–6 and STT: 0–9; cartilage space loss [CSL] for both joints: 0–3) by two readers, blinded for clinical and radiographic data, with good intra- and inter-reader reliability. For further analysis we used the average of both readers, rounded down to the nearest integer. To study validity, the distribution of the TOMS scores for osteophytes and CSL were compared for the different radiographic stages for osteophytes and JSN, respectively.
**Results:** On MR images osteophytes were detected in the vast majority of thumb bases (CMC1 n=172; STT n=102). The score of TOMS increased with more severe radiographic stages (see figures). However, the number of patients without any osteophytes in both CMC1 and STT was considerably lower for TOMS (n=19) than for the OARSI (n=106) scoring. A similar difference was apparent for absence of CSL (n=82) versus JSN (n=108) in both CMC1 and STT. Patients with isolated STT osteophytes were quite rare for both TOMS (n=9) and the OARSI (n=5) scoring. The most prominent discrepancy between TOMS and OARSI sensitivity was found for osteophytes: an additional 168 joints (CMC1 n=84; STT n=84) were found positive with TOMS, while only 1 OARSI-positive CMC1 scored negative with TOMS.




**Conclusions:** Scores of osteophytes and cartilage loss assessed on MR images by TOMS were correlated with radiographic scores, indicating good validity of the TOMS. Furthermore, the frequencies of joints with osteophytes and cartilage loss assessed on MR images were higher compared to those on radiographs, suggesting high sensitivity for the TOMS.
**References:**
[1] Kroon FPB, Conaghan P, Foltz V, et al. Development and reliability of the OMERACT thumb base osteoarthritis MRI scoring system. J Rheumatol. 2017; in press.
**Disclosure of Interest:** None declared
**DOI:** 10.1136/annrheumdis-2017-eular.2765

**SATURDAY, 17 JUNE 2017**

# Why we do develop autoimmunity

## OP0343 THE INTESTINAL INVOLVEMENT IN SYSTEMIC SCLEROSIS IS CHARACTERIZED BY A PECULIAR GUT MICROBIOTA

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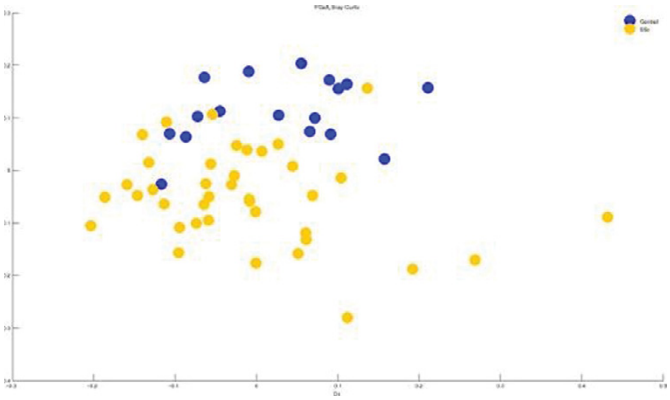
**Background:** Gastrointestinal involvement is recognized as a major cause of morbidity and mortality in Systemic Sclerosis (SSc) and its pathophysiology is still unclear. Few data on composition and function of gut microenvironment in SSc are reported in the literature but there is a growing body of evidences supporting the hypothesis of a relation between gut microbiota and the host immune system.
**Objectives:** The goal of this study was to characterize fecal microbiota in SSc patients compared to healthy subjects to investigate whether specific microbial species may be responsible of dysbiosis in SSc. Furthermore, we investigated the composition of microbiota in the different clinical subsets of SSc.
**Methods:** Faecal samples were obtained from 17 healthy controls and 39 SSc patients including subjects with different skin involvement (Diffuse and Limited) and disease duration. The BMI was normal and the mean age was similar both in SSc and controls groups. The composition of microbiota was determined through 16S rRNA pyrosequencing performed using the GS Titanium technology. Rarefaction was used to uniform abudance data. $\alpha$-diversity was defined by the main indexes while $\beta$-diversity was determined according to Bray-Curtis and UniFrac, represented trough Principal Coordinate Analysis (PCoA) and compared using PERMANOVA test on distance matrices. Linear Discriminant Analysis Effect Size was used to identify taxa that showed differential expression between the groups.
**Results:** At genus level SSc patients showed a differential expression in 12 taxa compared to controls with higher levels of *Ruminococcus*, *Streptococcus*,

*Lactobacillus*, *Blautia*, *Coprococcus* and *Phascolarctobacterium* and a depletion of *Bacteroides*, *Butyciromonas*, *Odoribacter*, *Succinivibrio*, *Sutterella* and *Prevotella*. The differences in microbiota composition between SSc patients and controls were supported also by PCoA of the values representing phylogenetic distance of microbial communities between specimens ($p<0.001$) (see figure). Among scleroderma patients, those with diffuse skin involvement showed a greater abundance of bacteria of Bacteroidetes phylum with significantly lower values of alpha diversity by Chao1 and species richness (p=0.01). Differences were confirmed by PERMANOVA on Bray-Curtis distance matrix (p=0.016).

PERMANOVA analysis of distance matrices (p-values adjusted according to FDR)

| | Weighted UniFrac | Bray-Curtis |
|---|---|---|
| Control vs SSc | <0.001* | <0.001* |
| Control vs Diffuse | 0,012* | 0,0015* |
| Control vs Limited | 0,003* | 0,0015* |
| Control vs Early | 0,003* | 0,0015* |
| Control vs Long | 0,017* | 0,0015* |
| Diffuse vs Limited | 0,259 | 0,016* |
| Early vs Long | 0,49 | 0,156 |



**Conclusions:** Our analysis demonstrated an altered and distinct composition of gut microbiota in SSc patients compared to healthy controls. Furthermore, scleroderma patients show some differences in microbiota characteristics according to the extent of skin involvement, suggesting that microbiota may influence the severity of the disease. If validated and related to GI symptomathology and nutritional status our findings open up the opportunity of a rational intervention on microbiota to restore the gut equilibrium in SSc patients.
**Disclosure of Interest:** None declared
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**SATURDAY, 17 JUNE 2017**

## Closing the gap between objective measures and self-report in fibromyalgia

OP0344-HPR **DEVELOPMENT OF RESPONDER CRITERIA FOR MULTICOMPONENT NON-PHARMACOLOGICAL TREATMENT IN FIBROMYALGIA**

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**Background:** Despite positive non-pharmacological treatment effects in fibromyalgia (FM) (1,2) these effects are often modest and show large individual variability. In clinical practice it is very important to assess the effectiveness of treatment for the individual patient in order to tailor further treatment. Responder criteria can assess the effectiveness of treatment and define clinically meaningful change in health outcomes on patient level. However, no specific responder criteria for non-pharmacological treatment in FM currently exist. This warrants further exploration in this field.
**Objectives:** 1) To define responder criteria for multicomponent non-pharmacological treatment in FM; and 2) To estimate and compare their sensitivity and specificity.
**Methods:** Candidate responder sets were 1) identified in literature (3–5); and 2) formulated by expert group consensus. All candidate responder sets were tested for sensitivity and specificity in a cohort of 144 patients with FM receiving multicomponent non-pharmacological treatment. Therapist's judgement about patient's goal attainment and patients' perspective on health status change, assessed at 6 months after the start of treatment, were used as gold standard.
**Results:** Seven responder sets were defined (three identified in literature and four formulated by expert group consensus), and comprised combinations of domains of 1) pain; 2) fatigue; 3) patient global assessment (PGA); 4) illness perceptions; 5) limitations in activities of daily living (ADL); 6) sleep. The sensitivity and specificity of literature-based responder sets (n=3) ranged between 17%>99% and 15%>95% respectively, whereas the expert-based responder sets (n=4) performed slightly better with regard to sensitivity (range 41%>81%) and specificity (range 50%>96%). Of the literature-based responder sets the OMERACT-OARSI responder set with patient's gold standard performed best (sensitivity 63%, specificity 75% and ROC area = 0.69). Overall, the expert-based responder set comprising the domains illness perceptions and limitations in ADL with patient's gold standard performed best (sensitivity 47%, specificity 96% and ROC area = 0.71).
**Conclusions:** We defined sets of responder criteria for multicomponent non-pharmacological treatment in fibromyalgia. Further research should focus on the validation of those sets with acceptable performance.
**References:**
[1] Busch AJ, et al. Exercise for treating fibromyalgia syndrome. Cochrane Database Syst Rev 2008; (4).
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[4] Norman GR, et al. Interpretation of changes in health-related quality of life; the remarkable universality of half a standard deviation. Med Care. 2003;41(5):582–92.
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s **Disclosure of Interest:** None declared
**DOI:** 10.1136/annrheumdis-2017-eular.3629

**SATURDAY, 17 JUNE 2017**

## Suffering in silence. Optimizing the management of psychological well-being for people with RMDs

OP0345-PARE **GROWING UP WITH ARTHRITIS – YES WE CAN! A PROJECT OF DEUTSCHE RHEUMA-LIGA IN CO-OPERATION WITH THE GERMAN ARTHRITIS RESEARCH CENTER. WITH FINANCIAL SUPPORT BY THE GERMAN FEDERAL MINISTRY OF HEALTH**

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**Background:** Every third young person with arthritis in Germany stops therapy when he or she enters adult care! Young people with arthritis have to travel long distances to care facilities, which are specialized in transition (about 30 throughout Germany). Because there are too few rheumatologists adults with arthritis often have to wait long for a consultation. Too few doctors have experience with treating young persons with arthritis. The situation of young persons with arthritis results in little knowledge about the condition – only every second young person knows their correct diagnosis. Parents manage everything – only every 5th young person up to 17 years has been alone with their doctor without their parents. Timely and comprehensive support is lacking.
**Objectives:** Supported by the health ministry and in cooperation with the German Arthritis Research Center the project started in 2014. As a first step the need for support for young person with arthritis was explored. It took two years to develop a pilot project with transition peers, a homepage, camps and information material for parents and doctors. The main goal of the project is to reduce the number of young persons who discontinue care because of the necessary change from children's care to adult care.
**Methods:** Ten transition peers have been trained for providing support (telephone, online, personal). An online information platform www.mein-rheuma-wird-erwachsen.de (my arthritis is growing up!) was created, filled with the experiences of the peers, information and quizzes and contact offerings. Camps especially for young persons growing up with arthritis took place. For the parents information material were developed and a seminar: learn to let go! is offered to them. The transition peers are going to doctors congresses to spread information material and to present the homepage.
**Results:** An evaluation of the project is carried out by the German Arthritis Research Center. The online information platform is accepted, it had more than 10.000 visitors during the first year. The young users like the content of the homepage, the transition peers are accepted by the young people as well as by the doctors.
**Conclusions:** The model project is running for three years – from 2014 until the end of 2017. A subsequent project will focus on the communication between doctors and young patients and should continue the new activities for the young persons with arthritis, their parents and the doctors.
**References:**
[1] In 2016, the German rheumatology newspaper – "Zeitschrift für Rheumatologie" Nr. 6 /2016, Page 635f reported on the project with the title "Transition from pediatric to adult rheumatological care" and about the special offers from Deutsche Rheuma-Liga by Prof. Kirsten Minden and Martina Niewerth.
**Disclosure of Interest:** None declared
**DOI:** 10.1136/annrheumdis-2017-eular.4956