involvement as previously documented in the animal models of SLE. We compared TWEAK with markers of BBB permeability and astrocyte activation. Also, we estimated intrathecal B-cell activation, anti-NR2 abs, and explored whether these variables were associated with NP manifestations.

Methods: In a population-based cohort of 50 SLE (all fulfilling the ACR criteria) and 52 pSS patients (all fulfilling the AECG criteria) NP manifestations were classified according to the ACR recommendations for NP-SLE. TWEAK, anti-NR2 antibodies (abs) were measured in serum and cerebrospinal fluid (CSF), S100b in CSF, and IgG index and Q-albumin were calculated.

Results: TWEAK concentrations in serum/CSF, as well as S100B and anti-NR2 abs in CSF, Q-albumin and IgG indices are shown in table 1. Associations between intrathecal TWEAK and S100B, Q-albumin and IgG index are given in table 2. No associations were found between TWEAK in serum/CSF and NP manifestations in the SLE, nor in the pSS group. Further, no associations were revealed between NP manifestations and S100B, Q-albumin or IgG index. Anti-NR2 abs in CSF were associated with increased OR for dysfunction in the cognitive domains visuospatial processing (OR 4.9, $p=0.03$) and motor functioning (OR 6.0, $p=0.006$) when corrected for age, gender, disease duration and education.

Abstract OP0217 – Table 1 Demographic and other selected data in 50 SLE- and 52 pSS patients

	SLE	pSS	p-value
Age, years, mean (SD)	43 (12)	57 (12)	<0.001
Females (%)	43 (86)	44 (85)	0.84
Disease duration, years, mean (SD)	12 (9)	7 (5)	<0.001
No with NP manifestations (%)	46 (92)	48 (92)	0.95
TWEAK, serum, pg/ml	655 (200-4644)	925 (451-1508)	<0.001
TWEAK, CSF, pg/ml	887 (369-2351)	1351 (481-5184)	<0.001
S100B in CSF, pg/ml	221 (110-420)	264 (138-544)	0.005
Q-albumin, ratio	4.71 (1.98-12.2)	4.24 (1.69-10.8)	0.99
IgG index, ratio	0.17 (0.10-0.39)	0.18 (0.09-1.12)	0.19
Anti-NR2 in CSF, ratio	0.37 (0.14-2.2)	0.41 (0.15-3.0)	0.20

Abbreviations: Abs, antibodies

Anti-NR2 ab values given as a ratio against an internal calibrator with defined signal intensity.

Laboratory data are presented as median and ranges

Abstract OP0217 – Table 2 Associations* between TWEAK in CSF and selected laboratory variables in 50 SLE- and 52 pSS patients

Dependent variables	SLE			pSS		
	β	R ²	p-value	β	R ²	p-value
Q-albumin	0.11	0.01	0.45	0.11	0.01	0.44
S100B, pg/mL	0.50	0.25	<0.001	0.45	0.20	0.001
IgG index	-0.14	0.02	0.32	0.37	0.12	0.007

* Univariable regression analyses

Conclusions: Although several studies show that TWEAK seems necessary for CNS involvement in murine SLE, no clinical NP manifestations could be attributed to TWEAK concentrations in CSF/serum in the SLE- or pSS patients. Further, no associations were found between NP manifestations and the integrity of the BBB (Q-albumin), nor astrocyte activation.

The TWEAK concentration was higher in CSF than blood in both the SLE- and pSS patients, indicating an intrathecal production.

TWEAK in CSF covaried with S100B in CSF possibly reflecting a common ongoing intracerebral process.

We hypothesise that TWEAK is neuroprotective in human SLE and pSS. Brain residing immune cells produce brain reactive abs, for example anti-NR2 abs. These abs bind to neurons, and the cellular stress induced in the neurons leads to production of TWEAK. Concurrently, the activated B cells secrete proinflammatory cytokines that among other actions activate astrocytes that in turn produce S100B, also a neuroprotective protein.

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Genetics, epigenetics and disease: is it all in the genes?

OP0218

INVESTIGATING THE REGULATORY SNPS AT THE RUNX3 LOCUS ASSOCIATED WITH ANKYLOSING SPONDYLITIS

M.L. Vecellio¹, A. Cortes², C.J. Cohen¹, R. Fischer³, B.P. Wordsworth¹. ¹Nuffield Dept. of Orthopaedics, Rheumatology and Musculoskeletal Sciences; ²Wellcome Trust Centre for Human Genetics; ³Target Discovery Institute, University of Oxford, Oxford, UK

Background: Among the 100 genes associated with ankylosing spondylitis (AS), *RUNX3* a transcription factor (TF) involved in diverse immunological processes has a very robust (10^{-15}) association.¹ The biggest challenge following association studies remain to understand the mechanism behind this association and get insights of the disease. We have recently demonstrated that the association between AS and the single nucleotide polymorphism (SNP) *rs4648889* located in a 2 kb regulatory locus upstream the promoter of *RUNX3* can be explained by allele-specific effects on TF recruitment that alter gene expression, specifically in CD8 +T cells.² In addition, another closely adjacent SNP, *rs4265380* shows functional effects (i.e. TF recruitment, histone marks enrichment and cell count) on CD14 +monocytes.³

Objectives: The main objectives of this work are: 1) to dissect the functional effects of the different SNPs at the *RUNX3* locus, acting in different cell types (especially CD8 +T cells and monocytes); 2) to identify the different interacting partners (i.e. TFs) binding at the *RUNX3* locus in the presence of the AS-associated alleles.

Methods: We used publicly available dataset to define the epigenetic landscape of the *RUNX3* locus. *In vitro* functional studies were performed to characterise the effects of these specific genetic variants, providing critical functional evidence for their role in AS.

Results: (1) Roadmap data revealed a robust peak for open chromatin and specific histone modifications associated with regulatory elements. Hi-C data showed the interaction of *RUNX3* with different genomic loci within chromosome 1, in GM12878 lymphoblastoid cell line, CD8 +T cells and monocytes; (2) ChIP-qPCR experiments on monocytes and CD8 +T cells from AS patients revealed the enrichment for several histone modifications (i.e. H3K79Me2 and H3K4Me1) at the *RUNX3* locus overlapping the SNPs of interest; (3) preliminary DNA pull-down experiments, followed by Mass Spectrometry, started to identify the whole range of proteins and TFs (DNA/protein 'interactome') that bind at the *RUNX3* locus in the presence of the AS-associated alleles, evaluated in both CD8 +T cells and monocytes; (4) initial pathway enrichment analysis highlighted the distinct contribution of proteins involved in the transcriptional machinery (AS-risk VS protective alleles).

Conclusions: We provide first evidence that the 2 kb region upstream the *RUNX3* gene has a plausible functional role in AS. These new observations are critically important not only in identifying specific cell types that play a pathogenic role in AS, but also in defining dysregulated pathways and potential therapeutic drug targets.

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It's your move: promoting physical activity in people with RMD's

OP0219-HPR THE EFFICACY OF MOTIVATIONAL COUNSELLING AND SMS-REMINDERS ON DAILY SITTING TIME IN PATIENTS WITH RHEUMATOID ARTHRITIS: 22 MONTHS FOLLOW-UP OF A RANDOMISED, PARALLEL-GROUP TRIAL

T. Thomsen¹, M. Aadahl², N. Beyer³, M.L. Hetland¹, K.B. Løppenthin¹, J. Midtgaard⁴, R. Christensen⁵, S.M. Nielsen⁵, M. Østergaard¹, P. Jønum⁶, B. A. Esbensen¹. ¹Center for Rheumatology and Spine Diseases, Rigshospitalet, Denmark; ²Centre for Clinical Research and Prevention, Bispebjerg and Frederiksberg Hospitals; ³Department of Clinical Medicine, Faculty of Health and Medical Sciences, University of Copenhagen; ⁴University Hospitals Centre for Health Research, Rigshospitalet, Denmark; ⁵Musculoskeletal Statistics Unit, The Parker Institute, Bispebjerg and Frederiksberg Hospitals; ⁶Danish Center for Sleep Medicine, Department of Neurophysiology, Rigshospitalet, Denmark, Copenhagen, Denmark

Background: Patients with rheumatoid arthritis (RA) have high amounts of daily sitting time and do not meet recommendations for moderate to vigorous physical activity (PA). Previously, we reported results from a randomised controlled trial (RCT) investigating the efficacy of a four-month individually tailored behavioural intervention, targeting reduction of sedentary behaviour (SB) in patients with RA.¹ The four-month post intervention results showed that patients in the intervention group reduced their daily sitting time; moreover patient-reported outcomes (PROs) and total cholesterol levels improved compared to the usual lifestyle control group.

Objectives: To investigate 18 month post-intervention efficacy of the four-month individually tailored, behavioural intervention on daily sitting time in patients with RA.

Methods: In the observer-blinded RCT, we included 150 RA patients from a rheumatology outpatient clinic. The intervention group (n=75) received three motivational counselling sessions and tailored text messages aimed at increasing light intensity PA through reduction of SB. The control group (n=75) maintained usual lifestyle. Primary outcome was change from baseline in objectively measured daily sitting time. Secondary outcomes included PROs and cardio-metabolic biomarkers (blood pressure, lipids and HbA1c). All outcome measures were analysed with a mixed effects repeated measures ANCOVA model on the intention-to-treat population.

Results: At 22 months follow-up from baseline, 12 participants were lost to follow-up (three and nine, respectively). Compared to baseline, daily sitting time in the intervention group decreased 1.10 h/day, and in the control group it increased 1.32 h/day; between-group difference of -2.43 h/day (95% CI: -2.99 to -1.86; p<0.0001) in favour of the intervention group. Likewise, for most secondary outcomes between-group results favoured intervention: VAS-pain: -15.51 mm (-23.42 to -7.60), VAS-fatigue: -12.30 mm (-20.71 to -3.88), physical function: -0.39 HAQ-units (-0.53 to -0.26), total cholesterol: -0.86 (-1.03 to -0.68), triglyceride: -0.26 (-0.43 to -0.09) and HbA1c: -1.15 (-1.39 to -0.91) mmol/l.

Conclusions: Even 18 months after completed intervention results showed an effect on daily sitting time and improvements in PROs, lipids and HbA1c in favour of the intervention group. Findings suggest that an individually tailored, behavioural approach may be beneficial in promoting health in addition to current clinical practise for patients with RA.

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Challenges of patient organisations' in the 21st century

OP0220-PARE DEVELOPMENT OF THE SWISS NATIONAL STRATEGY 'MUSCULOSKELETAL DISEASES' 2017-2022 BY THE SWISS LEAGUE AGAINST RHEUMATISM

S.M. Engel, V. Krafft. *Swiss League against Rheumatism, Zürich, Switzerland*

Background: To support countries in their national efforts, the WHO developed a Global Action Plan for the Prevention and Control of Noncommunicable Diseases

2013-2020, which included cardiovascular diseases, cancers, chronic respiratory diseases and diabetes.¹ Although rheumatic or musculoskeletal diseases were not considered by the WHO, the Federal Office of Public Health (FOPH) of Switzerland included them within the National Strategy for the Prevention of Noncommunicable Diseases (NCD strategy).² This valuable national strategy and the corresponding action plan focus mainly on primary and secondary prevention with the aim to prevent diseases before their occurrence and to decrease associated risk factors. As a consequence, numerous organisations started to prepare disease-specific national strategies with focus on tertiary prevention and the main intention of supporting people with chronic illness.

Objectives: The objective of this project of the Swiss League against Rheumatism was to develop the Swiss National Strategy 'Musculoskeletal Diseases' 2017-2022. The strategy focused on patients affected by a rheumatic disease in order to complete the objectives that had already been undertaken by the Swiss government.

Methods: The structure of the Swiss League against Rheumatism (non-profit organisation) required a streamlined process. The theoretical framework, as part one in a two-part strategy, was developed from scientific literature. For the second part of the strategy, the identification of different measures in various fields of action, an expert group with advisory role was built in September 2015. This expert group was composed of different organisations: the Federal Office of Public Health, the Swiss Conference of the Regional Directors of Health Care, the Swiss Society of Rheumatologists, the Swiss Society of Orthopaedics and Traumatology, the Swiss Association of Physiotherapy, the Swiss Association of Occupational Therapy and the Swiss League against Rheumatism. Several interviews were conducted with experts from those and other organisations to determine the need for action in the field of musculoskeletal diseases for the upcoming six years. In summer 2016 the various recommendations of possible measures were prioritised.

Results: In summer 2017 as a result of this process, the Swiss League against Rheumatism was able to present the National Strategy 'Musculoskeletal Diseases' 2017-2022 with various measures grouped in the categories of 'prevention and early detection', 'care' and 'research and education'.³

Conclusions: Using this approach, a national strategy was developed with a reasonable amount of personal and financial resources. The current challenge of the implementation process is to motivate the involved organisations to realise specific measures on their own or in collaboration. These measures enable a better support of persons with musculoskeletal conditions during the full course of their disease.

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OP0221-PARE KNOW THEIR NUMBERS: WHAT DO RA PATIENTS KNOW ABOUT THEIR OWN BIOMEDICAL DATA?

T. Ngcozana¹, A. Bhatia². ¹Rheumatology, Royal Free Hospital; ²Rheumatology, Hillingdon Hospital NHS Foundation Trust, London, UK

Background: Evidence shows that patients with a higher knowledge regarding their health, experience better health and have better outcomes, this leads to lower costs for the National Health Service. The Blood Pressure Association UK encourages the public to know their biomedical data. Similarly, there is a desire for patients with chronic diseases such as rheumatoid arthritis (RA) to know their biomedical data (blood pressure, lipid profile, DAS 28 score, BMI, blood sugar etc). It is well documented that patients with RA are at a high risk of developing cardiovascular disease.

Objectives: The aims of this study were to ascertain the existing knowledge that patients have on their biomedical data, understand the barriers of knowing these health indicators and enquire how their knowledge can be improved.

Methods: 50 consecutive patients with RA seen in a nurse-led clinic were asked to complete an anonymised questionnaire. The questionnaire consisted of 10 questions which assessed demographics, the patients' knowledge of their current biomedical data and the importance of knowing this information. It also enquired if patients knew what the term 'know your numbers' meant, reasons for not knowing and what could be done to increase their knowledge in knowing their numbers.

Results: 80% (n=40) questionnaires were returned. The estimated mean age (mean ±SD, years) was 58.1±13.4. A majority of the respondents were female