mean= 6.3 +/- 1.8 pg/ml, $p=0.25$). After **TNF α** stimulation, protein level of NT3 was significantly higher in CRPS skin fibroblasts (CRPS mean= 10.6 +/- 2.4 pg/ml, HC mean= 4.8 +/- 1.3 pg/ml, $p=0.004$).

Conclusion: These data indicate a new role of skin fibroblasts in CRPS. Differential basal and stimulated expression of NT3, the receptor for NT3 (TrkC) and NGFR, the common receptor for all neurotrophins, indicates deregulated communication of fibroblasts with the sensory nerve fibers in CRPS. This might contribute to the dysregulated healing process and sustained pain.

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OP0086

GENDER INFLUENCE ON CLINICAL MANIFESTATIONS, DEPRESSIVE SYMPTOMS AND BRAIN-DERIVED NEUROTROPHIC FACTOR (BDNF) SERUM LEVELS IN PATIENTS AFFECTED BY FIBROMYALGIA

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Background: Fibromyalgia (FM) is a common rheumatic disease characterized by chronic widespread pain, sleep and mood disorders. A higher prevalence of FM in women compared with men is well known, although the specific differences in clinical manifestations related to gender are still poorly defined. Brain-Derived Neurotrophic Factor (BDNF) is an endogenous growth factor that gained attention for its potential as biomarker of several diseases, including FM and depression.

Objectives: The aims of this study were to investigate gender-related difference among males and females affected by FM in clinical manifestations, depressive features and BDNF serum level, evaluating also the diagnostic potential of the latter.

Methods: We consecutively enrolled adult patients affected by FM (ACR 2016) referring to our out-patient clinic. Each subject underwent clinical and answered to questionnaires for the severity of FM symptoms (Revised Fibromyalgia Impact Questionnaire, R-FIQ) and depressive symptoms (Beck Depression Inventory-II, BDI-II). We collected blood samples from a subgroup of patients of both sexes, matched for age, for BDNF serum level dosage through ELISA. BDNF levels were assessed also in a control group, matched for sex and age.

Results: The cohort was composed by 201 FM patients (172 F, 29M), mean age 49.13. Females showed higher values of R-FIQ total score ($p=0.0005$) as well the specific items of the R-FIQ for pain ($p=0.013$), fatigue ($p=0.014$), memory problems ($p=0.007$), tenderness to touch ($p<0.0001$), balance problems ($p<0.0001$) and sensitivity to environmental stimuli ($p=0.012$) when compared with males (fig. 1). There was no difference in BDI-II between males and females, but notably male patients reported a significantly higher frequency of coexisting depressive disorder ($p=0.038$) (fig. 2). Serum BDNF levels were evaluated in 40 FM patients and 40 healthy controls (HC) (F:M 1:1). BDNF levels were significantly lower in FM patients compared with HC ($p<0.0001$). Among FM patients, BDNF levels were lower in males compared with females ($p<0.0001$) (fig.3). BDNF did not correlate with any clinical and clinimetric parameter. BDNF showed a good diagnostic performance (AUC=0.89, CI95%=0.82-0.9630, $p<0.0001$) (fig. 4). At a cut-off value <6.47 ng/dl, BDNF showed a specificity of 75% and a sensibility of 92.31%, (CI 95%=79.68-97.35) for FM identification (LR=3.692).

Conclusion: FM clinical manifestations are strongly dependant from gender. While females present a more severe disease and a higher burden of symptoms, mood disorders tend to be a major characteristic of males with FM. Reduced BDNF serum levels have been reported as typical of depressive disorders. Our findings of lower BDNF levels in male FM patients compared to females support this hypothesis. BDNF have potential as biomarker of the disease and should be validated in larger cohorts.

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OP0087

COMORBIDITIES IN HAND OSTEOARTHRITIS PATIENTS: PREVALENCE AND IMPACT ON PAIN AND PAIN SENSITIZATION

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Background: Pain is a hallmark symptom of hand osteoarthritis (OA). A subset of people with hand OA display centrally driven pain characteristics. Pain is driven by person-related factors, but how comorbidities are related to the hand OA pain experience is undetermined. Changes in pain pathophysiology and pain levels by for instance low-grade inflammation, might explain the link.

Objectives: The purpose of this study was to determine whether the burden of comorbidities or the individual comorbidities were associated with pain and pain sensitization in persons with hand OA.

Methods: These cross-sectional analyses included 282 participants with hand OA from the Nor-Hand study. Comorbidities were assessed by an index (subscales: Disease, Limitation and Treatment, (0-45 scale)) by Sangha et al. The participants completed pain questionnaires; Numeric Rating Scale (NRS) hand pain (0-10) and all joints (0-10), Australian/Canadian (AUSCAN) hand pain subscale (0-20 scale), Western Ontario & McMaster Universities Arthritis Index (WOMAC) pain subscale (0-20) and homunculus (painful joint sites last six weeks, (0-18)). Pressure pain threshold (PPT, handheld algometer, kg/cm²) at tibialis anterior and trapezius and Temporal summation (TS) at the distal radioulnar joint tapped with weighted probe (x10), assessed central pain sensitization. TS-delta was calculated of the first and peak measure of the fifth or tenth tap. Linear regression was used to examine all relations, while adjusted for age, sex, body mass index and education.

Results: The participants (89% women, median (IQR) age: 61 (57-66)) showed broad range in pain severity. Most frequent comorbidities were back pain (n=170, 60%), hypertension (n= 85, 30%), stomach ulcer/abdominal disease (n=62, 22%) and depression (n=46, 16%). 281 (99.3%) participants reported >1

Table.

B (95% confidence interval per one SD of the comorbidity index/subscale) are reported

	NRS hand pain	NRS pain all joints	AUSCAN hand pain	WOMAC knee/hip pain	Painful joints	PPT Trapezium	PPT Tibialis Anterior	TS
<i>Comorbidity Index</i>	0.76 (0.12, 0.24)	0.76 (0.12, 0.24)	1.61 (0.15, 0.37)	2.76 (0.26, 0.50)	2.76 (0.42, 0.88)	-0.38 (-0.15, -0.04)	-0.25 (-0.13, 0.01)	0.25 (0.02, 0.11)
Disease	0.69 (0.24, 0.52)	0.56 (0.16, 0.46)	0.89 (0.22, 0.75)	1.34 (0.45, 1.02)	2.19 (0.66, 1.76)	-0.34 (-0.32, -0.06)	-0.24 (-0.29, 0.04)	0.23 (0.02, 0.23)
Treatment	0.56 (0.18, 0.48)	0.58 (0.18, 0.49)	0.80 (0.19, 0.76)	1.29 (0.46, 1.06)	1.79 (0.47, 1.65)	-0.31 (-0.32, -0.44)	-0.19 (-0.28, 0.07)	0.22 (0.01, 0.24)
Limitations	0.69 (0.32, 0.70)	0.86 (0.44, 0.81)	1.16 (0.51, 1.20)	1.58 (0.78, 1.53)	3.30 (1.72, 3.13)	-0.41 (-0.47, -0.13)	-0.26 (-0.41, 0.02)	0.26 (0.04, 0.33)
Depression	0.96 (0.29, 1.63)	0.66 (-0.04, 1.36)	1.74 (0.46, 3.02)	0.99 (-0.38, 2.35)	3.43 (0.78, 6.09)	-0.36 (-1.00, 0.29)	-0.44 (-1.25, 0.37)	0.02 (-0.50, 0.53)
Back pain	0.89 (0.38, 1.40)	1.10 (0.57, 1.63)	1.04 (0.08, 2.00)	2.90 (1.87, 3.93)	2.64 (0.65, 4.64)	0.08 (-0.41, 0.56)	0.23 (-0.38, 0.84)	0.22 (-0.17, 0.61)
Hypertension	0.64 (0.05, 1.22)	0.45 (-0.17, 1.06)	1.00 (-0.12, 2.11)	1.32 (0.13, 2.52)	2.74 (0.44, 5.05)	-0.32 (-0.88, 0.23)	-0.28 (-0.97, 0.40)	0.17 (-0.28, 0.62)

comorbidity other than OA. Mean (SD) comorbidity index value was 7.73 (4.25). Higher values were statistically significantly associated with greater pain severity by each pain questionnaire, lower PPT trapezium (borderline significant for PPT tibialis anterior), and greater TS (Table). Similar results were found for subscales. Depression, back pain and hypertension associated with most measures of pain. (Table). Included in the same model, results remained similar (not shown). No statistically significant association between individual comorbidities and pain sensitization (Table).

Conclusion: Higher burden of comorbidities was associated with greater pain intensity and central pain sensitization. Hypertension, back pain and depression were associated with most pain measures. The lack of relation between individual comorbidities and pain sensitization suggest the burden of comorbidity is more important.

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OP0088

A COHORT STUDY ON THE BIDIRECTIONAL RELATIONSHIP BETWEEN FIBROMYALGIA AND PERIODONTITIS OVER A 15-YEAR FOLLOW-UP

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Background: Fibromyalgia has been proposed to be driven by chronic inflammation and infections that are associated with early rheumatoid arthritis and inflammatory arthritis. Other than the central sensitization model, our knowledge of fibromyalgia pathogenesis has been expanded with an inflammation-dependent theory, which is stimulated by prolonged spinal cord hyperexcitability.

Objectives: To determine the relationship between periodontitis and fibromyalgia.

Methods: In this cohort study, 196,428 periodontitis patients and 196,428 propensity score-matched non-periodontitis controls were enrolled. A Cox proportional hazard model was utilized to estimate the risk of fibromyalgia and survival analysis was adopted to assess the time-dependent effect of periodontitis on fibromyalgia. Subgroup analyses stratified by age, gender, and follow-up years were conducted to identify susceptible populations. A symmetrical cohort was designed to ascertain the relationship between fibromyalgia and the risk of periodontitis.

Results: Patients with history of periodontitis were more likely to develop fibromyalgia than non-periodontitis controls (HR =1.42, 95% CI =1.39–1.44, P < 0.001), which persisted in the survival analysis (log-rank test P < 0.0001). This effect was significant in both genders and all age subgroups,

and was particularly evident in males (HR=1.52, 95% CI = 1.48–1.56, P < 0.001) and younger periodontitis patients (HR= 1.55, 95% CI =1.50–1.60, P < 0.001). Fibromyalgia patients who never had periodontitis presented with higher risk for periodontitis over time (HR = 1.43, 95% CI = 1.40 - 1.45, P < 0.001).

Conclusion: This is the first longitudinal study that addresses the bidirectional relationship between fibromyalgia and periodontitis, in which periodontitis may serve as a risk factor or early sign of fibromyalgia. Based on the observed relationship between fibromyalgia and periodontitis, regular follow-ups and patient education are recommended for patients with either disease.

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OP0089

DO PAIN CATASTROPHIZING REDUCE THE LIKELIHOOD OF REMISSION IN PATIENTS WITH CHRONIC INFLAMMATORY JOINT DISORDERS?

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Background: Rheumatoid arthritis (RA), psoriatic arthritis (PsA) and axial spondyloarthritis (ax-SpA) may have a devastating impact on patients' lives, including chronic and relapsing pain. One factor contributing to bio-psycho-social model of pain in these diseases, is pain catastrophizing (PC) defined as tendency to report pain experience in exaggerated terms, to ruminate more or to feel helpless about it. In one RA study PC has been shown to be associated with patient reported outcomes e.g. reduced likelihood of remission using composite measures.[1]

Objectives: Main objective of this study was to explore if pain catastrophizing score is associated with remission rates in the chronic inflammatory joint disorders RA, PsA and ax-SpA.

Methods: Patients were recruited during routine assessment at an outpatient clinic in Norway. Variables collected included demographics, treatment, disease duration, global pain VAS, pain catastrophizing score (PCS), and disease activity scores: DAS28-CRP for RA, BASDAI for ax-SpA and DAPSA for PsA. Cut off definitions of remission was for DAS28 <2.6, for BASDAI <4.0 and for DAPSA ≤4.0. Two questions from Coping Strategies Questionnaire as recommended by Jensen et al [2] were used to describe PC, range PC total score (PCS) 0–6. Patients with PCS ≥ 4 were defined as high pain catastrophizers. Statistics included Chi-Square test and adjusted logistic regression (enter procedure).

Results: For RA (N=580), PsA (N=394) and ax-SpA (N=225) mean age (SD) was 61.5 (13.1), 54.4 (12.9) and 47.5 (12.9) years, mean disease duration 12.6 (10.9), 10.2 (8.4) and 12.2 (10.7) years and percentage of women 66.7%, 47.0% and 38.4%. Mean (SD) DAS28-CRP in RA was 2.3 (1.0), BASDAI for ax-SpA 3.7 (2.3) and DAPSA for PsA 10.8 (8.5). Mean (SD) global pain (VAS 0–100mm) was for RA 32.0 (25.6), for PsA 35.5 (25.4) and for ax-SpA 39.4 (25.4) mm.