in Spain, including peripheral (hip, knee and hand) and axial (cervical and lumbar spine) OA.

Objectives: To estimate in adult population the prevalence in Spain of symptomatic axial OA (cervical and lumbar spine) and associated factors.

Methods: EPISER 2016 study is a cross-sectional, population-based descriptive study. To estimate the OA prevalence, adult population aged 40 or older was selected. The initial recruitment was made through by a call center. Participants who met the premises of an initial screening based on symptoms were also identified. In a second phase rheumatologists confirmed the diagnosis. The axial OA diagnostic criteria to confirm new diagnosis were both clinical and radiographic criteria. Clinical criteria: mechanical pain longer than 3 months of evolution and stiffness of less than 30 minutes or absence of it; and radiographic criteria: vertebral osteophytes or reduction of intervertebral space with sclerosis of vertebral plate and sclerosis in interapofisary joints. To confirm the diagnosis, it was necessary that both clinical criteria and at least one radiographic criteria were met.

Figure 1: Prevalence of OA in Spain

	GLOBAL	PERIPHERICAL	AXIAL
40-49	125 (12.8)	53 (8.2)	91 (13.7)
50-59	242 (24.7)	131 (20.2)	167 (25.2)
60-69	257 (26.3)	181 (27.9)	189 (28.5)
70-79	201 (20.6)	158 (24.3)	127 (19.1)
≥ 80	153 (15.6)	126 (19.4)	90 (13.6)
Women	730 (74.6)	487 (75)	515 (77.6)
Northern	259 (26.5)	172 (26.5)	177 (26.7)
Mediterranean	378 (38.7)	268 (41.3)	247 (37.2)
Centre	341 (34.9)	209 (32.2)	240 (36.1)
Rural	212 (21.7)	145 (22.3)	135 (20.3)
Urban	766 (78.3)	504 (77.7)	529 (79.7)
Basic studies	611 (62.6)	431 (66.4)	425 (64)
Medium	207 (21.2)	122 (18.8)	138 (20.8)
Higher	158 (16.2)	94 (14.5)	101 (15.2)
Normal weight	266 (27.2)	149 (23)	192 (28.9)
Under weight	4 (0.4)	2 (0.3)	2 (0.3)
Overweight	405 (41.4)	260 (40.1)	267 (40.2)
Obesity	229 (23.4)	175 (27)	157 (23.6)
Non smoker	561 (57.4)	387 (59.6)	383 (57.7)
Former smoker	259 (26.5)	177 (27.3)	165 (24.8)
Smoker	158 (16.2)	85 (13.1)	116 (17.5)

Abstract THU0452 – Figure 1

Results: The sample of the EPISER study was 3,336 subjects ≥ 40, of whom 978 had peripheral or axial OA. The mean age was 64.72 years, 730 were women, 62.6% had basic education, 64.8% were overweight or obese and 83.9% were ex-smokers or non-smokers (Figure 1). The prevalence of global OA (peripheral+axial) was 29.35%. Prevalence of peripheral and axial OA was 19.62% and 19.17% respectively. The characteristics of patients with peripheral and axial OA follow similar patterns. Both types of OA are more frequent in women with basic education levels. Regarding age, there are more patients with axial osteoarthritis between 40-49 years than with peripheral OA. Obesity or overweight are more strongly associated with peripheral OA.

Figure 2: Multivariate analysis of axial OA

	CERVICAL OA		LUMBAR OA	
	p value	OR (TI 95%)	p value	OR (TI 95%)
40-49				
50-59	<0.001	2.047 (1.387-3.022)	<0.001	2.000 (1.438-2.781)
60-69	<0.001	3.347 (2.270-4.934)	<0.001	3.228 (2.319-4.494)
70-79	<0.001	2.337 (1.495-3.854)	<0.001	3.200 (2.223-4.607)
≥ 80	<0.001	2.916 (1.751-4.854)	<0.001	4.049 (2.667-6.148)
Women	<0.001	2.241 (1.660-3.025)	<0.001	2.324 (1.816-2.973)
Northern				
Mediterranean	0.013	1.489 (1.086-2.026)	0.161	0.832 (0.643-1.076)
Centre	0.007	1.565 (1.132-2.163)	0.036	1.322 (1.019-1.716)
Basic studies				
Medium	0.009	0.659 (0.481-0.902)	0.071	0.788 (0.609-1.020)
Higher	<0.001	0.431 (0.304-0.613)	<0.001	0.433 (0.322-0.583)
Normal weight				
Under weight	0.84	0.857 (0.192-3.821)	0.998	<0.001
Overweight	0.208	1.197 (0.905-1.584)	0.001	1.528 (1.201-1.945)
Obesity	0.002	1.679 (1.209-2.332)	<0.001	2.490 (1.881-3.295)

Abstract THU0452 – Figure 2

Prevalence of cervical OA was 10.10%. In the multivariate analysis, it was observed that cervical OA is more frequent in women and older subjects, with the prevalence peak between 60-69 years. It is also more

frequent in subjects with obesity and in subjects with a basic education level (Figure 2). OA cervical prevalence is lower in subjects from northern Spain than in population from the Mediterranean area (including the Canary Islands) and central Spain. Smoking, living in a rural or urban environment or having been born abroad were not associated with cervical OA.

Prevalence of lumbar OA was 15.52%. Multivariate analysis also showed that lumbar OA is more frequent in women and it increases with age (prevalence peak in ≥80 years). Greater association was observed with obesity or overweight and with basic study levels. Lumbar OA prevalence was higher in population from centre of Spain compared with other areas. Tobacco consumption, living in a rural or urban environment or having been born abroad were not associated with lumbar OA.

Conclusion: EPISER2016 study shows similar prevalence of peripheral and axial OA. Lumbar OA is more prevalent than cervical OA. Axial OA in Spain is more frequent in women, increases with age with a peak between 60-69 years for cervical OA and ≥ 80 years for lumbar OA. Both cervical and lumbar OA are more frequent in patients with obesity or overweight and with basic studies.

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THU0453 PROGRESSION OF PAIN, NUMBER OF PAINFUL AND SWOLLEN JOINTS AND ULTRASOUND DETECTED CHANGES IN THE GROUP OF 133 PATIENTS WITH HAND OSTEOARTHRITIS OVER THREE YEARS

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Background: Hand osteoarthritis (HOA) is a common and frequent cause of pain. HOA is a heterogeneous group of disorders with two main subsets including non-erosive and erosive disease. Few studies demonstrated inflammatory ultrasound changes and more severe clinical symptoms in patients with erosive compared with non-erosive disease, however the results are inconsistent.

Objectives: The aim of this study was to evaluate progression of pain, stiffness, physical impairment and ultrasound features in patients with erosive and non-erosive HOA in a three years longitudinal study.

Methods: Consecutive patients with symptomatic HOA fulfilling the American College of Rheumatology (ACR) criteria were included in this study. Joint pain and swelling were assessed. Patients reported joint pain on 100 mm visual analogue scale (VAS). Pain, joint stiffness and disability were assessed by the Australian/Canadian OA hand index (AUSCAN). Radiographs of both hands were examined, and erosive disease was defined by at least one erosive interphalangeal joint. Synovial hypertrophy and power Doppler signal (PDS) were scored with ultrasound. Synovitis was graded on a scale of 0–3 and osteophytes were defined as cortical protrusions seen in two planes. Patients were examined at baseline and at the first, second and third year of follow-up.

Results: Altogether, 133 patients (14 male) with symptomatic nodal HOA were included in this study and followed between April 2012 and January 2019. Out of these patients, 72 (6 male) had erosive disease. The disease duration ($p<0.01$) was significantly higher in patients with erosive compared with non-erosive disease.

Pain reported on VAS was significantly higher ($p<0.01$) in patients with erosive compared with non-erosive disease at baseline. Progression of pain after the third year of follow up was significantly higher in patients with erosive disease ($p<0.05$). The number of painful and clinically swollen joints ($p<0.05$) was significantly higher in patients with erosive compared with non-erosive disease at baseline. The number of painful and clinically swollen joints remained statistically higher ($p<0.01$) at the third year of follow up in patients with erosive disease.

According to the AUSCAN, patients with erosive compared with non-erosive disease had more pain ($p<0.05$) and stiffness ($p<0.01$) at baseline. Pain ($p<0.05$) and function ($p<0.01$), but not stiffness, worsened in patients with erosive compared with non-erosive disease at the third year of follow up.

US-detected pathologies such as gray-scale synovitis ($p<0.001$), intensity of PDS ($p<0.01$) and number of osteophytes ($p<0.01$) were significantly higher in patients with erosive compared with non-erosive disease at

baseline. There were improvements in gray-scale synovitis total score and intensity of PDS in patients with non-erosive disease while patients with erosive disease worsened after the 3rd year of follow up. On the other hand, the progression of US-determined osteophyte formation was observed in both groups but were significantly higher in patients with erosive compared with non-erosive disease after the third year of follow up.

Conclusion: The findings of this study show that pain and number of painful and clinically swollen joints associated with US-detected synovial changes and osteophyte formation is more severe in patients with erosive HOA than in patients with non-erosive disease. In addition, osteophyte formation is more likely to progress independent of synovial inflammation.

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THU0454 CONDITIONED PAIN MODULATION AND TEMPORAL SUMMATION IN PERSONS WITH HAND OSTEOARTHRITIS AND ASSOCIATIONS WITH PAIN SEVERITY

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Background: Conditioned pain modulation (CPM) assesses adequacy of descending modulatory pathways. Temporal summation (TS) reflects ascending facilitation of nociceptive signals in the central nervous system (central sensitization). Inadequate CPM and enhanced TS of pain are both known to contribute to pain in chronic pain conditions. Different pain phenotypes may respond to different treatments strategies and may therefore be important to assess in clinical practice. CPM has not previously been explored in persons with hand OA and its relation to pain severity is unknown.

Objectives: To examine the prevalence of CPM and central sensitization alone or in combination in persons with hand OA, and to explore their associations with pain severity.

Methods: These cross-sectional analyses included 248 participants with hand OA from the Nor-Hand study. Participants reported hand pain severity during the last 24 hours on a numeric rating scale (NRS, 0-10). CPM was tested with pressure pain threshold (PPT) at the left wrist before (PPT1) and during (PPT2) a painful ischemic cuff conditioning stimulus at the opposite upper arm. Adequacy of CPM was calculated as CPM-ratio (PPT1/PPT2). CPM-ratio < 1 (increased PPT) indicates adequate CPM, while CPM-ratio ≥ 1 (unchanged/decreased PPT) indicate inadequate CPM. TS, increase in perceived pain to repetitive noxious stimuli as a marker of central sensitization, was assessed using mechanical punctate probes. We defined presence of TS as an increase in pain of ≥2 points on an NRS (0-10) during a repetition of ten punctate stimuli. We analyzed whether groups having adequate CPM and no TS, inadequate CPM only, TS only, or having both inadequate CPM and TS were associated with hand pain severity. We used linear regression analysis adjusted for age, sex, BMI, use of analgesics, education level, sleep disturbance, the Pain Catastrophizing Scale, the Hospital Anxiety and Depression Scale and radiographic hand OA severity (Kellgren Lawrence sum score).

Results: Of the 248 participants included, 90% were women, median age was 61 (IQR 57, 66) years and mean BMI was 26.3 (SD 4.7) kg/m². CPM-ratio ranged from 0.4 to 1.6 (mean 0.9, SD 0.2), and 32% showed inadequate CPM. Presence of TS was found in 46% of the study population. Overall, 38% had no TS and adequate CPM, 29% had inadequate CPM only, 16% TS only and 16% had both (Table). We found that

persons with inadequate CPM only and TS only reported higher pain severity than persons with adequate CPM and no TS (Table). Those with both inadequate CPM and TS reported similar levels of pain as persons with inadequate CPM only and TS only.

Abstract THU0454 – Table 1. Associations of conditioned pain modulation (CPM) and temporal summation (TS) with pain severity in persons with hand OA, (n=248)

	Mean (SD) NRS hand pain	Adjusted beta (95%CI)
No TS and adequate CPM (n=96)	3.2 (1.8)	0.0 (ref.)
Inadequate CPM-only (n=39)	3.9 (2.3)	1.1 (0.4, 1.8)
TS-only (n=73)	4.2 (2.5)	0.8 (0.3, 1.4)
TS and inadequate CPM (n=40)	4.6 (2.3)	1.1 (0.4, 1.8)

Adjusted for age, sex, BMI, analgesics, education, sleep disturbance, Pain Catastrophizing Scale, the Hospital Anxiety and Depression Scale and Kellgren Lawrence sum score.

Conclusion: One third of persons with hand OA had inadequate CPM. Those with inadequate CPM, central sensitization or both reported higher pain severity than persons without any signs of altered central pain processing. Having both inadequate CPM and central sensitization was not associated with higher pain severity than having only one of the features. Our results are the first to demonstrate such a heterogeneous variety of clinically relevant pain phenotypes in persons with hand OA.

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THU0455 PHARMACOKINETICS (PK) OF A SINGLE INTRARTICULAR (IA) INJECTION OF CNTX-4975 (TRANS-CAPSAICIN) VS TOPICAL 8% CAPSAICIN PATCH

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Background: CNTX-4975 is in phase 3 trials for treatment of moderate to severe pain associated with knee osteoarthritis (OA). PK data from prior studies of CNTX-4975 in subjects with moderate to severe knee OA pain suggest low systemic and short-term exposure, similar to the FDA-approved topical capsaicin 8% patch.

Objectives: We compared single-dose systemic exposure to *trans*- and *cis*-capsaicin following IA injection of CNTX-4975 (>99.5% *trans*-capsaicin, <0.5% total impurities) with 8% capsaicin patch in subjects with moderate to severe knee OA pain.

Methods: This open-label, crossover study enrolled adults aged 50–75 y with moderate to severe knee OA pain in ≥1 knee (most painful knee, index knee; nonindex knee, no to mild pain [0–1; NPRS 0–4 scale]). Subjects were randomized 1:1 to 2 sequences: A (CNTX-4975 1 mg IA, index knee) followed by B (topical capsaicin 8% patch, posterior rib cage for 60 min) or BA sequence, with ≥7-day washout between treatments. Plasma samples for *trans*- and *cis*-capsaicin concentration assays were taken before and at specified times after study treatment. PK parameters, including maximum observed plasma concentration (C_{max}), area under the plasma concentration-time curve from time 0 to last quantifiable plasma concentration (AUC_{0-t}) and to infinity (AUC_{0-∞}), time to C_{max} (T_{max}), and half-life (t_{1/2}), were determined. PK parameters were reported using descriptive statistics. Geometric means ratios of ln-transformed AUC_{0-t}, AUC_{0-∞}, and C_{max} were evaluated using ANOVA.

Results: Sixteen subjects (median age, 62 y; female, 62.5%) were randomized to treatment (PK analysis population). T_{max} showed more rapid absorption of *trans*-capsaicin from IA CNTX-4975 vs the topical patch (Table). AUC_{0-t} and C_{max} indicated greater *trans*-capsaicin exposure