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AbstractBook

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T-score of total femur	Baseline	-0,247	0,229
	Two years after	-0,216	0,357
	Five years after	-0,191	0,46
Total femoral bone density (g/cm <sup>3</sup> )	Baseline	-0,047	0,069
	Two years after	-0,032	0,348
	Five years after	-0,029	0,415
T-score of femoral neck	Baseline	-0,301	0,153
	Two years after	-0,222	0,412
	Five years after	-0,213	0,446
Femoral neck bone density (g/cm <sup>3</sup> )	Baseline	-0,039	0,072
	Two years after	-0,027	0,34
	Five years after	-0,018	0,658

Contrasts were computed from linear mixed-effect models  
Results are averaged over the levels of: gender, comorbid\_diabetes\_mellitus, comorbid\_hypercholesterolemia  
Degrees-of-freedom method: Kenward-Roger  
P value adjustment: Sidak method for 3 tests

**Conclusion:** We found no differences in systemic bone loss between erosive and non-erosive hand OA over period of 5 y.  
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## P1028

### QUESTION THE DENSITY AS A BONE STRENGTH MEASUREMENT

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**Objective:** To evaluate the effect of complete spinal cord injury (cSCI) and incomplete spinal cord injury (iSCI) on the mechanical properties of bones in experimental rats: density, ultimate strength, Young's modulus of the bone tissue of the tibia and femur.

**Methods:** The research was conducted using the non-pedigree rats weighing 180-200 g. iSCI was introduced between Th8-Th9 levels using the modified A.R. Allen method by 2.5 g load weighing falling vertically from 5 cm height [1]. cSCI was performed by section between Th8- Th9 segments [2]. Three-point bending tests were carried out to determine the mechanical parameters [3].

**Results:** In the study geometric, mass and mechanical properties of the femur and tibia were measured. Both types of spinal cord injury lead to a decrease in the bone strength. cSCI results in a reduction in the rat femur strength. The Young's modulus and density of the rat femur and tibia remain unchanged in both types of spinal cord injury.

**Conclusion:** It is necessary to create new clinical diagnostic techniques that can accurately evaluate the strength of bone tissue in individuals with cSCI. The research also highlights the elevated risk faced by patients with iSCI, as they experience a significant decrease in bone strength that cannot be distinguished through

density measurements alone.

**References:**

Allen AR. *Nerv Ment Dis* 1998;31:141

Baltin M, et al. *Biomedicines* 2023;11:2026

Akhmetzyanova A, et al. *Russ J Biomech* 2022;4:38

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## P1029

### AGE FEATURES IN CLINICAL MANIFESTATIONS OF ANKYLOSING SPONDYLITIS IN MILITARY SERVICEMEN

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**Objective:** A substantial fraction of Ukrainian military service members with ankylosing spondylitis (AS) continued in service. However, the doubling in risk of discharge for AS is comparable to that for personnel with diabetes mellitus. The early diagnosis of AS taking into account age features can improve the efficiency of military servicemen rehabilitation. Aim of the study is to investigate the clinical manifestations, and age features of pain syndrome in Ukrainian military servicemen with AS before treatment onset.

**Methods:** We retrospectively studied the AS cases recorded from March 2022 to June 2023 of the rheumatology department of the largest Regional Clinical Hospital in Dnipro (Ukraine); the diagnosis was based on the ASAS-EULAR recommendations for AS. A total of 38 AS cases were diagnosed among 72 military servicemen (median age 36.7 [26.2;48.7]). The first group consisted of 15 patients aged 25-35 y, the second - 23 patients aged 36-50 y.  
**Results:** All the patients had chronic back pain. 30 (79%, 95% C.I. 77-85%) patients presented sacroiliitis of whom 21 (70%, 95% C.I. 64-76%) were bilateral. 29 military servicemen (76%, 95% C.I. 68-81%) had peripheral joint involvement. Among the patients of the first group, the peripheral joint involvement is established significantly more often - 12 (80%, 95% C.I. 72-85%) against 17 (59%, 95% C.I. 54-66%) in second group (p<0.05). Four patients presented with anterior uveitis (10%, 95% C.I. 7-13%) and all were 25-35 years old. HLA-B27 antigen was found in 36 patients (95%, 95% C.I. 88-97%). Median pain intense based on VAS score was 8.8 [6.9; 9.5] in the first group, while in the second group this indicator was significantly lower 6.5 [5.7; 7.8] (p<0.05). Median CRP level was 10.2 [6.2; 12.4] in the first group, in the second group - 9.1 [5.8; 11.8] (p>0.05).

**Conclusion:** Young military servicemen with ankylosing spondylitis presented significantly more frequent peripheral form and more intense pain syndrome, which must be taken into account during the rehabilitation of these patients.