and the increase of BMR by one kcal/daily decreased this probability by 0.02%.

The increase of lumbar spine than women who still have their period. The increase of odds ratio of the menopause as a risk factor for spinal T-score <-1 SD was 9.54, over the age of 65 yrs. showed the highest risk for spinal T-score <-1 SD. The year of the women's age increased the risk for T-score <-1 SD by 1.16%. Women (95.2%) were attributed to postmenopausal. Age (p=0.000), BMI (p=0.015), menopause (p=0.000), and the mean BMR was 1274.01 kcal/daily.

RESULTS:

Conclusions:

In the current study, multivariate regression analysis was used to develop a specific REMS-based risk prediction model for spinal BMD, corresponding to T-score <-1 SD. Postmenopausal women over age of 65 yrs. with BMI lower than 28.63 kg/m^2 and BMR <1331.75 kcal/daily were at the highest risk for T-score <-1 SD of the lumbar spine.

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Disclosure of Interests: None declared.

DOI: 10.1136/annrheumdis-2021-eular.1768

POS1109

MUltivariate Analysis of risk factors for reduced Bone mineral density assEssed with Radiofrequency echographic multi Spectrometry (reMs)

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Background: Radiofrequency echographic multi spectrometry (REMS) is an innovative radiation-free approach for the assessment of bone mineral density (BMD) at axial sites. The principle of this technology is based on the analysis of native raw unfiltered ultrasound signals, so it uses radiofrequency ultrasound signals, acquired during an echographic scan of the lumbar spine and/or femoral neck [1]. A previous published study showed a high degree of correlation between the T-score values provided by the two techniques-REMS and dual energy X-ray absorptiometry for both lumbar spine and femoral neck [2]. REMS software outputs information about BMD (g/cm²), T-scores, Z-scores [standard deviations (SD)], percentage of body fat and basal metabolic rate [BMR (kcal/daily)] [3].

Objectives: The aim of the current study is to investigate the multivariate significant risk factors for reduced BMD through REMS technology.

Methods: In this study, a total of 273 women with mean age 62 years (yrs.) ± 12 yrs. (range 25-88 yrs.) underwent REMS assessments. Subjects were divided into two groups after acquiring information about the spinal T-scores: 1st group with T-scores >-1 SD and 2nd group with T-scores <-1 SD. Age, weight, height, body mass index (BMI), basal metabolic rate (BMR), body fat and menopausal status were the risk factors included in the multivariate statistical analyses.

Binary logistic regression was used to assess which are the significant risk factors for T-score <-1 SD. Youden's indices were calculated for selecting the cut-off points for each risk factor.

Results: 273 women had mean weight of 70.5 kg ± 15.7 kg (range 39.4-127.6 kg), mean height 157.1 cm ± 8.8 cm. (range 100-182 cm) and mean body mass index (BMI) 28.6 kg/m² ± 6.1 kg/m² (range 14.9-47.5 kg/m²). The mean body fat of the subjects was 37.8% ± 8.8% (range 9-52%). The mean BMR was 1274.01 kcal/daily ± 163.17 kcal/daily (range 929-7190.8 kcal/daily). 260 women (95.2%) were attributed to postmenopausal. Age (p=0.000), BMI (p=0.015), menopause (p=0.006) and BMR (p=0.000) were the multivariate significant risk factors for T-score <-1 SD. Odds ratio for the risk factor age was 1.16, so each added year of the women's age increased the risk for the T-score <-1 SD by 1.16%. Women over the age of 65 yrs. showed the highest risk for spinal T-score <-1 SD. The odds ratio of the menopause as a risk factor for spinal T-score <-1 SD was 9.54, so postmenopausal women showed about 9.5 times higher risk of T-score <-1 SD than the lumbar spine of the women who still have their period. The increase of BMI by one kg/m² decreased the probability of spinal T-score <-1 SD by 0.15% and the increase of BMR by one kcal/daily decreased this probability by 0.02%.

Women with BMI above 28.63 kg/m² and those with BMR >1331.75 kcal/daily were unlikely to develop spinal T-score <-1 SD.

Conclusion: In the current study, multivariate regression analysis was used to develop a specific REMS-based risk prediction model for spinal BMD, corresponding to T-score <-1 SD. Postmenopausal women over age of 65 yrs. with BMI lower than 28.63 kg/m² and BMR <1331.75 kcal/daily were at the highest risk for T-score <-1 SD of the lumbar spine.

Disclosure of Interests: None declared.

DOI: 10.1136/annrheumdis-2021-eular.1866

POS1111

Diagnosis of osteoporosis using radiofrequency echographic multi spectrometry (reMs) at the lumbar spine in patients with different body mass index

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Background: In recent years, the technology based on the analysis of raw ultrasound signals, Radiofrequency Echographic Multi Spectrometry (REMS), has been validated against Dual-energy X-ray Absorptiometry (DXA) for the diagnosis of osteoporosis and risk fracture prediction.

Objectives: The aim of this multicenter observational study was to evaluate the diagnostic performance of REMS with respect to DXA in patients with different body mass index (BMI) categories.

Methods: The inclusion criteria were: Caucasian women; age between 30 and 90 years; referral by their clinician for spinal DXA assessment; absence of significant walking impairment; signed informed consent.

Disclosure of Interests: None declared.

DOI: 10.1136/annrheumdis-2021-eular.1768

Disclosure of Interests: None declared.

DOI: 10.1136/annrheumdis-2021-eular.1768

Disclosure of Interests: None declared.