Background: The frequency of osteoporotic fractures has significant geographic variability. We aimed to evaluate the frequency of asymptomatic vertebral fractures (VF s), in a large sample of Greek perimenopausal women.

Methods: The present study enrolled 497 women, aged 56.2±7.49 years. A detailed medical history was recorded, including demographic, lifestyle and dietary parameters as well as measurements of blood pressure. Bone mineral density (BMD) at the lumbar spine (LS) and femoral neck (FN) were assessed using dual energy X-ray absorptiometry. LS lateral radiographs were obtained according to the quantitative procedures.

Results: A total of 42 (8.45%) of women had at least one VF. Among women with prevalent fracture, LS- and FN-osteooporosis was present in 21.4% and 45.2% of cases, respectively. Women with prevalent VFs exhibited higher age (p-value=0.001) and menopausal age (p-value=0.011) as well as higher age at menarche (p-value=0.026). Moreover, the presence of at least one VF associated with lower levels of LS- and FN-BMD compared to women without fracture (LS-BMD: 0.89±0.16g/cm^2 vs. 0.99±0.16g/cm^2, p-value=0.004; FN-BMD: 0.73±0.11g/cm^2 vs. 0.81±0.12g/cm^2, p-value=0.001). Finally, the total duration of reproductive years was not associated with the development of VFs.

Conclusion: This sample of Greek perimenopausal women presented a relatively low frequency of VFs, which could be attributed to the relatively young age of the participants. The presence of VFs in middle-aged Greek women was predicted mainly by age. Bone mineral density classification of the FN was a more significant predictor for the development of VFs, compared to the LS-classification.