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**CUSTOMIZED POSTURAL REBALANCING IN OSTEOPENIC SUBJECTS WITH PAINFUL DEVIATIONS OF THE SPINE: PRELIMINARY FUNCTIONAL AND DENSITOMETRIC RESULTS**L. Cavalli<sup>1</sup>, G. Malevolti<sup>1</sup>, E. Martinelli<sup>1</sup>, M. L. Brandi<sup>1</sup><sup>1</sup>University of Florence, Florence, Italy

**Objective:** Evaluation of the functional and densitometric effects of a personalized postural rebalancing process aimed at improving the static and dynamic postural structure in subjects suffering from osteoporosis and rachialgia. Posture is the result of the functional interaction between the biomechanical, neurophysiological, psychological and psychomotor components of the individual, and is achieved through the tonic reflex contraction of the antigravity muscles. muscle strength and work affect bone remodeling: according to Wolff's Law, the load modifies the geometric properties of the bone, inducing it to be deposited where needed and reabsorbed where useless, thus contrasting the same load [1].

**Methods:** Six patients affected by osteopenia, pain and deviations of the spine in kyphosis and/or scoliosis, underwent a morphofunctional examination of posture and an ultrasound bone densitometry by radiofrequency echographic multispectrometry (REMS) [2] at lumbar spine and femur. On the basis of the postural physical examination, a customized program of exercises (the "C.A.MO.® method") was proposed to each patient, aimed to remove any incongruous postural and behavioral scheme and to create a new correct one, lasting one hour to be carried out individually with bi-weekly frequency over 4 weeks. At the end of the program, a new morphofunctional exam and a new REMS analysis were performed to each patient.

**Results:** All the patients reported a visible improvement of postural structure, a reduction in spine deflections and complete pain relief. Furthermore, 2 subjects of 6 have curiously shown also a slight but interesting improvement of the femoral T-score at the REMS (+0.2 DS), and the maintenance of vertebral values, after just one month of postural exercise.

**Conclusion:** These preliminary data suggest that a customized program of postural exercise, in addition to improving body awareness and preventing the risk of falling, can provide a stimulation on the bone mass, as well as on the postural musculature, with an osteotrophic effect in the short term.

**References:**

1. Brinker, Review of orthopedic, Saunders, 2001
2. Di Paola M et al. Osteoporos Int 2019;30:391