

## Determination of the In Vivo Precision of Sunlight Omnisense Bone Sonometer in Italy

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Dual X-ray absorptiometry (DXA) is recognized as the 'gold-standard' for the diagnosis and treatment monitoring of osteoporosis. Quantitative ultrasound (QUS) methods are a potential alternative because they are inexpensive and do not expose to ionizing radiations.

Omnisense bone assessment (Sunlight Ultrasound Technologies, Rehovot, Israel), based on the measurement of the speed of an ultrasound wave propagating along the bone, is the first QUS device capable of measuring the SOS at many sites, such as proximal phalanx of the third digit of the hand, distal radius, fifth metatarsal and others.

Aim of this study was to determine the precision of the device, as measured by the Coefficient of Variation (CV) at the distal 1/3 Radius, proximal Phalanx III and Metatarsal V, and to compare the Omnisense CV to the CV obtained from DXA measurement at the hip joint.

15 females at the age of 45-60 (mean age: 54 years) were enrolled in the study. Each one was measured at the radius, third phalanx and fifth metatarsal with the Sunlight Omnisense, and at the hip joint (where the BMD of the neck, trochanter and Ward's was taken) with a DXA Hologic device (Hologic Inc., Waltham, Mass.).

The in vivo precision of the Omnisense, as measured by the CV, is extremely high (0.22 % at the radius, 0.36 % at the phalanx, 0.31 % at the metatarsal bone).

The in vivo precision of the DXA, as measured by the CV, was 1.75 % at the femoral neck, 1.05 % at the trochanter and 3.10 % at the Ward's.

Obtained results show that the Omnisense bone sonometer may represent a safe and available method for routine assessment of skeletal health.

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