BMA measurement's standard curves for wrist and calcaneus of both sexes – data from EpiReumaPt

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Objective:

To determine Bone Microarchitecture Analysis (BMA) standard curves from wrist and calcaneus (ankle) for men and women.

Material and Methods:

EpiReumaPt is an ongoing national, population-based, cross-sectional, epidemiologic study developed by the Portuguese Society of Rheumatology to estimate the prevalence of rheumatic diseases in Portugal. Trained interviewers have been randomly applying a standardized questionnaire to 10,000 subjects at their houses (random route). Selected cases are eventually observed by a rheumatologist and ankle and wrist BMA performed. BMA is a new imaging technique based on a digital X-ray system that allows bone microarchitecture quantification and osteo-articular imaging at a highest spatial resolution.

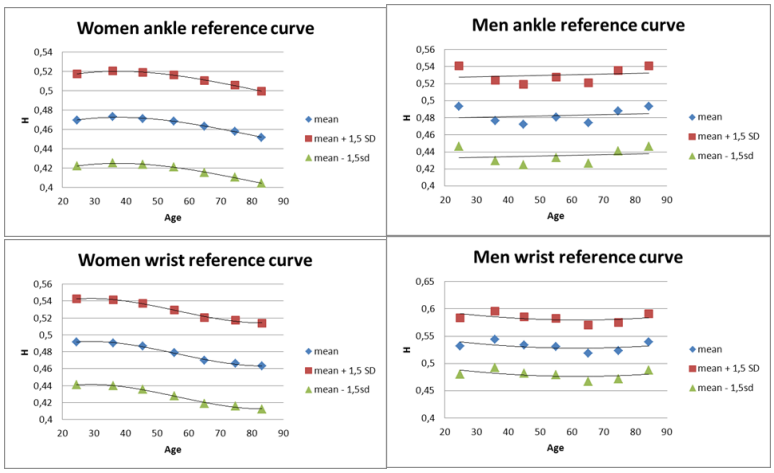
Results:

The study was started on 19 September 2011, and up to now, 5000 interviews were performed and 1700 subjects have been observed by a rheumatologist. Mean age was 53.8 years-old (SD 18.4), 61.8% were women. The majority were Caucasians (94%).

BMA was performed at bone ankle in 747 women and 371 men and at bone wrist in 837 women and 427 men.

Exclusion criteria included: Other ethnicities rather than Caucasian, due to low sample size. Subjects with misspelling or missing data on birth date, weight and height. Subjects with left and right sides assessed were considered as "duplicates" and the right side was removed from the analysis to avoid double counting.

The figures represent the standard curves for women and men ankle and wrist.



A strong and significant correlation was found between measurements at left and right sides. A highly significant but weak correlation (r around 0.30) was found between ankle and wrist measurements from the same individuals.

Conclusion:

These data allow for the first time the development of standard curves for ankle in men and for wrist in men and women. Bone quality is a systemic feature, yet differences may occur among sites assessed.