

BMA assessment standard curves for wrist and ankle of both sexes – data from EpiReumaPt



www.epireumapt.org

Helena Canhão^{1,2,3}, Nélia Gouveia¹, Tânia Rego¹, Jean Chantreuil⁴, Ana M Rodrigues^{1,2}, Jaime Branco^{1,5,6}

¹ EpiReumaPt Investigation Team, Sociedade Portuguesa de Reumatologia; ² Instituto de Medicina Molecular da Faculdade de Medicina da Universidade de Lisboa; ³ Serviço de Reumatologia, Centro Hospitalar de Lisboa Norte, Hospital de Santa Maria, EPE, Lisboa; ⁴ DM3A Systems, France; ⁵ CEDOC, Faculdade de Ciências Médicas da Universidade Nova de Lisboa; ⁶ Serviço de Reumatologia, Centro Hospitalar de Lisboa Ocidental, EPE / Hospital Egas Moniz, Lisboa

Introduction

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. Selected cases are eventually observed by a rheumatologist and ankle and wrist BMA performed.

BMA (DM3A systems) 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.

Objectives

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

Methods

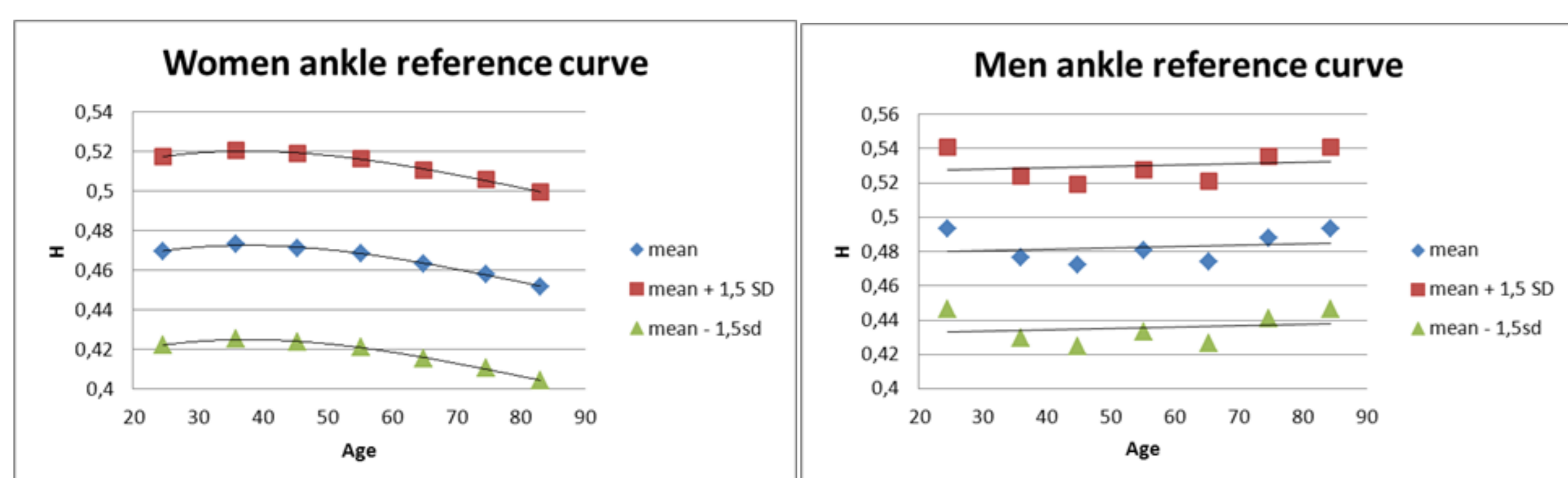
Trained interviewers have been randomly applying a standardized questionnaire to 10,000 Portuguese subjects at their houses (random route). Selected cases (positive screenings and 20% of the negative screenings) were eventually observed by a rheumatologist. Wrists and Calcaneus BMA were assessed in all subjects.

Results

1700 subjects were observed by a rheumatologist. Mean age was 53.8 ± 18.4 years, 61.8% were women and 94% Caucasians.

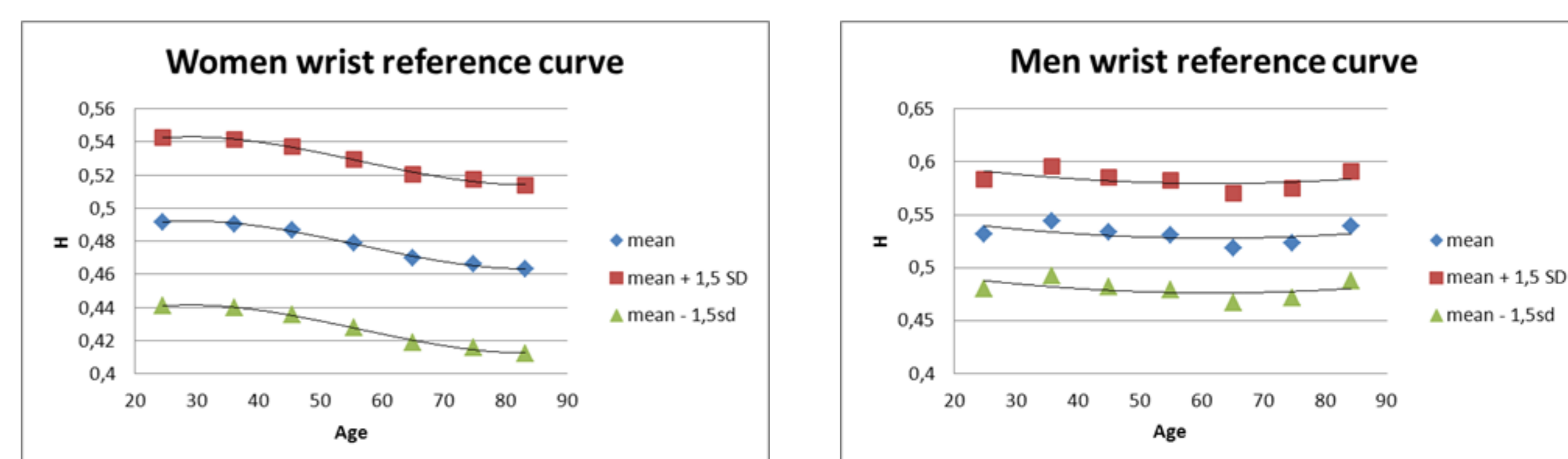
BMA was performed at bone ankle in 747 women and 371 men and at bone wrist in 837 women and 427 men. Exclusion criteria included: Other ethnicities rather than Caucasian and subjects with missing data on birth date. Subjects with left and right sides assessed were considered as “duplicates” and the right side was removed from the analysis.

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

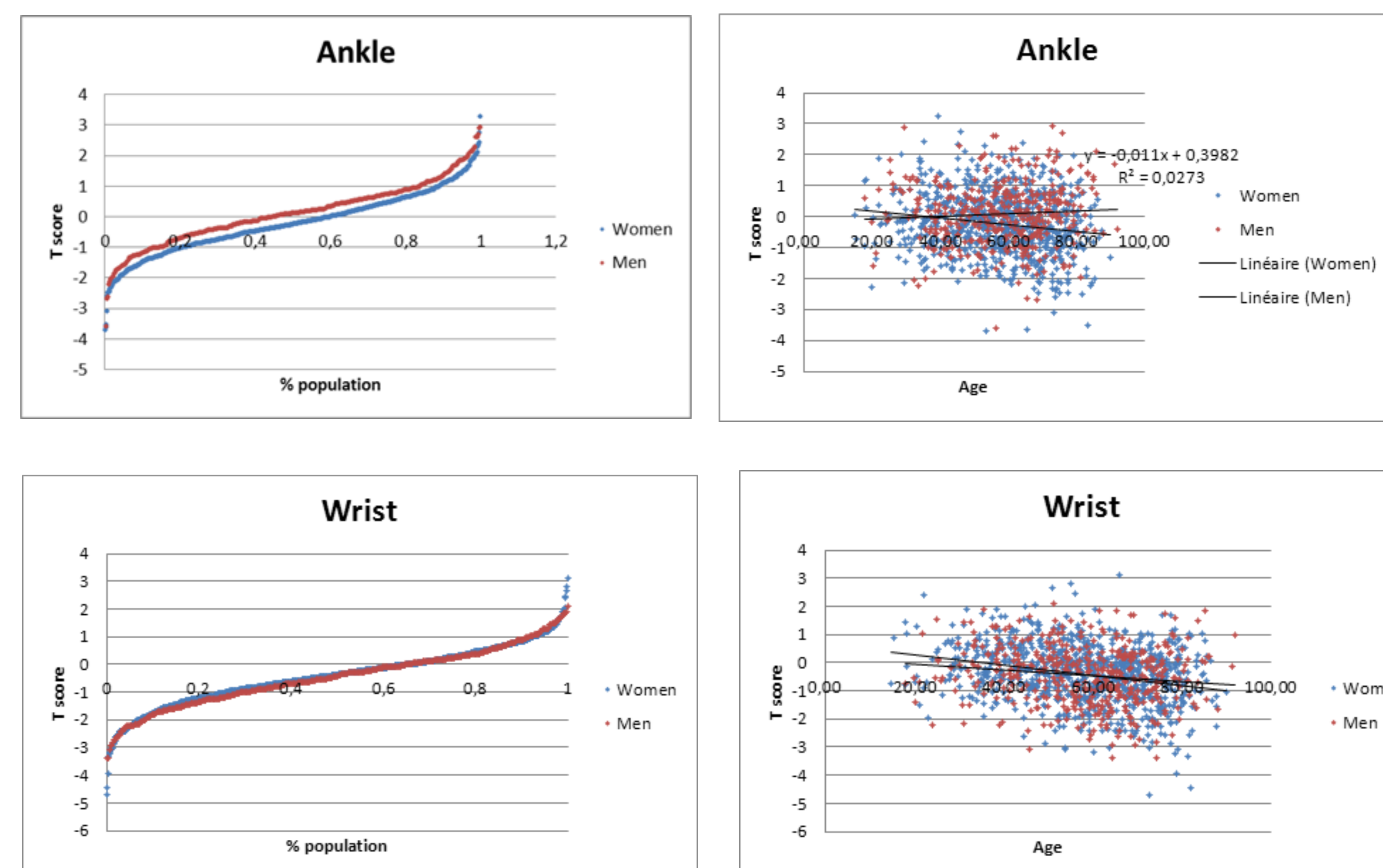


Results

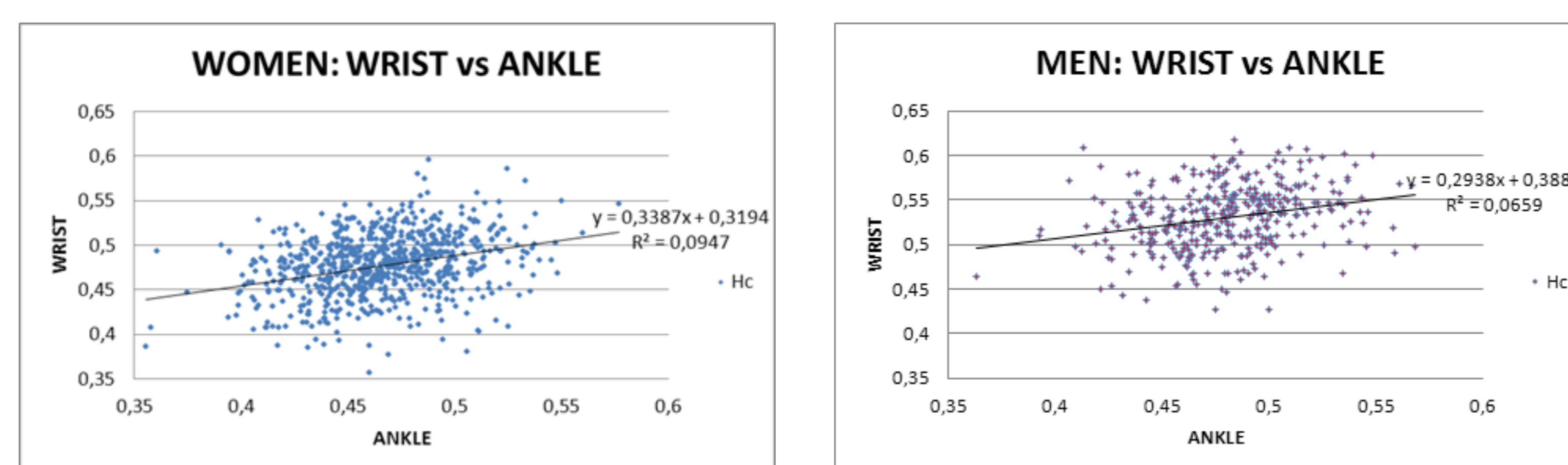
The figures represent the BMA standard curves for women and men wrist.



H parameter (rigidity) was lower in women and decreased with age while measurements in men were very constant along years.



A strong and significant correlation was found between measurements at left and right sides.



A highly significant but weak correlation ($r=0.30$) was found between ankle and wrist measurements from the same individuals.

Conclusions

These data allow for the first time the development of BMA standard curves for bone ankle in men and for wrist in men and women.

Bone quality is a systemic feature, yet differences may occur among sites assessed.

Sponsorship



Funding

DIRECÇÃO-GERAL DA SAÚDE | FUNDAÇÃO CALOUSTE GULBENKIAN | PFIZER | ABBOTT | ROCHE | D3A - MEDICAL SYSTEMS MERCK SHARP & DOHME | ANAFRE - ASSOCIAÇÃO NACIONAL DE FREGUESIAS | ASSOCIAÇÃO NACIONAL MUNICÍPIOS PORTUGUESES | CÂMARA MUNICIPAL DE LISBOA | AÇOREANA SEGUROS | GERMANO DE SOUSA, CENTRO DE MEDICINA LABORATORIAL | GALP ENERGIA | FUNDAÇÃO ASTRA ZENECA | HAPPYBRANDS | SERVIER | BIAL | CAL-CLÍNICA | FUNDAÇÃO CHAMPALIMAUD

Aknowledgements

TO ALL RHEUMATOLOGISTS AND OTHER PROFESSIONALS WHO PARTICIPATED IN THIS STUDY