 Extension of the Bone Health Index to adults  
and reference curves of four indices of cortical bone for healthy Europeans  

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Background  
The BoneXpert method for automated determination of bone age from hand X-rays includes a determination of the Bone Health Index (BHI) from the cortical thickness in the metacarpals (1).  

Aim  
To extend the BHI method into adulthood and to present reference curves for  
- BHI  
- The metacarpal index  
- The Exton-Smith index  
- The volume-per-area (proportional to areal BMD)  

Methods and material  
The reference curves were based on a cross-sectional study of 1662 hand radiographs of healthy subjects of age 9-100 years collected in Jena in 2001-5.  

Results  
BHI was found to have smaller relative SD than the other three indices in the Jena cohort over the age range 20-80 years (2).  

Conclusions  
It is now possible to follow paediatric patients at risk of poor bone health from childhood into adulthood with the same method.  
For instance, it can be useful for monitoring treatment effects of GH therapy for transition patients with GH deficiency until peak bone mass. The relevance of cortical thickness in this context has been demonstrated (3), and the new implementation in BoneXpert makes this assessment readily available to clinicians.  

Disclosure: HHT is the owner of Visiana, which markets BoneXpert  

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References  