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Abstract:

Evaluating Bone Age and Predicting Young Athletes' Final Height by a Novel Ultrasound Device (Sonicbone's BAUSport™) and their Applications to Talent Selection, Training and Sports Medicine.

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Background: Bone Age (BA) assessment is a common medical procedure in children's and adolescents' healthcare, mostly for evaluating growth and puberty related endocrine disorders. Moreover, knowing the precise BA stage of children and adolescents is a potentially important tool for identification and selection of young athletes' talents, for developing proper training programs, for injury prevention and for prediction of final adult height. Indeed, strong correlation has been found between BA stage and performance in various sports among children of the same age group. The current gold standard for BA assessment is an X-ray-based method. Nevertheless, a frequent use of X-ray in healthy young athletes is not viable, due to exposures to ionizing radiation, high financial costs, and the requirement of a nearby radiology facility. **Aim:** A Simple, accessible, radiation-free and accurate method is required for optimal and safe evaluation of bone maturation state and progress in young athletes. **Method:** "BAUSport™" by SonicBone medical, is a novel, regulatory approved, ultrasound based device for BA assessment and for final adult height prediction. **Discussion:** This device can be used as a supportive tool in the field of youth sport, by trainers, sports physicians and scientists. It is a portable, non-invasive, radiation free, non-operator-dependent device that has been found to be accurate when compared to the gold standard X-ray based method. **Conclusions:** "BAUSport™" can serve as a routine tool for implementation of more scientifically-based programs for training and injury prevention in youth athletes, with better talents selection process for various sports.