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New review outlines screening strategies for osteoporosis in young adults

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Much of the research defining osteoporosis and fracture risk has focused on older adults, i.e. postmenopausal women and men over the age of 50. While older adults are at highest risk of osteoporosis and related fractures, the disease can also affect younger adults between 20 and 50 years of age. However, the diagnosis and management of osteoporosis in young adults is complicated by special challenges, including a complex pathophysiology and the related fact that there is no clear definition of osteoporosis, or of intervention thresholds, in this age group.

An International Osteoporosis Foundation (IOF) scientific working group has now published a review which outlines the pathophysiology, diagnosis and management of osteoporosis in young adults, providing a clear screening strategy that includes the use of clinical and laboratory exams.

Dr. Serge Ferrari of the University of Geneva andchair of the IOF Working Group on Osteoporosis Pathophysiology, explains the diagnostic challenge faced by clinicians, "Low bone mass in this age group may not necessarily represent a pathological condition, but result instead from low peak bone mass in relation to body size, late puberty, or genetic and environmental background."

On the other hand, there are young adults who may truly have osteoporosis with bone fragility at a young age. This may result from altered bone modelling and/or remodelling during growth or later due to a chronic disorder or a genetic or idiopathic condition. Typical examples

would be inflammatory bowel diseases, particularly Crohn's disease. These diseases impair bone mass gain and/or accelerate bone loss because of malabsorption and poor nutrient intake. In addition, low levels of physical activity, secondary amenorrhea, and in many cases the effects of corticosteroid treatment, can have an impact on bone mass.

Distinguishing between these two situations can be all the more difficult because up to 30% of young women and 50% of young men have had fractures during childhood and adolescence, usually traumatic. These are not necessarily associated with skeletal fragility.

An apparently low areal bone mineral density (T-score

Nevertheless, a truly low BMD and/or unusual fractures (such as low-trauma, multiple and vertebral) should prompt investigation for secondary causes of osteoporosis. Careful medical history, clinical and laboratory investigations can reveal an underlying disease that requires specific medical intervention, which in turn will improve bone mass. Bisphosphonates may improve BMD in young subjects with osteoporosis due to various disorders, however the evidence is scarce so far and there are no data on their anti-fracture efficacy. In any case, the indications and duration of anti-resorptive treatment in the young should be as restrictive as possible, particularly in the absence of secondary causes, multiple and/or fragility (vertebral) fractures, and high bone turnover accompanied by documented bone loss.

Professor Cyrus Cooper, chair of the IOF Committee of Scientific Advisors, concluded, "This review will be of assistance to clinicians managing this important problem. The clinical relevance of low bone mineral density in young adults is less well understood than is the case in postmenopausal women and older men. Furthermore, many treatment modalities licensed for use in postmenopausal osteoporosis have not been carefully evaluated in younger adults. Clear guidance as to the

interpretation of BMD and the appropriate use of treatments is therefore most timely."

More information: Osteoporosis in young adults: pathophysiology, diagnosis and management. *Osteoporosis International* 2012, DOI: 10.1007/s00198-012-2030-x

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