



FIMS Position Statement

Scientific Commentary: Osteoporosis and Exercise

FIMS acknowledges and congratulates The American College of Sports Medicine (ACSM) for their extensive publication on Osteoporosis and Exercise. This commentary summarizes this document for a worldwide audience and also includes new information on the subject.

Osteoporosis is a disease characterized by low bone mass and the microarchitectural deterioration of bone tissue leading to an increase in bone fragility and the consequent risk of fracture. Prevention of osteoporotic fracture should therefore be focused on the preservation or enhancement of the material and structural properties of bone, the prevention of falls, and the increase of overall lean tissue mass. While forces applied to bone during daily activity in part develop and maintain its load bearing capacity, additional exercise and functional loading exert a positive influence on bone mass. However, the extent of this benefit, and the types of programs that will induce the most effective osteogenic stimulus remain uncertain. Results vary according to age, hormonal status, nutrition and exercise prescription.

It has long been recognized that deterioration of bone mass occurs more rapidly with unloading than with increased loading. This is a particular problem in older

individuals who may find it impossible to continue with activities that provide an adequate load-bearing stimulus to maintain bone mass. On the other hand, it appears that strength and overall fitness can be improved at any age through a carefully planned exercise program. At the present time there is no conclusive evidence that exercise alone or in combination with added calcium intake prevents a rapid decrease in bone mass in the immediate post-menopausal years. However, the additional benefits of regular exercise to general health and well-being are numerous and all healthy women should be encouraged to participate in physical activities regardless of their osteogenic component.

Based on this information the following recommendations are made:

1. Weight-bearing physical activity is essential for normal development and maintenance of a healthy skeleton. Activities that focus on increasing muscle strength may also be beneficial, particularly for non-weight-bearing bones.
2. Recent evidence demonstrating that growing bone is more responsive to mechanical loading and



physical activity than mature bone suggests that regular exercise during early life may be an important factor in the prevention of osteoporosis in later life.

3. Excessive endurance training may induce hormonal changes, menstrual disturbances and even adversely affect bone structure.
4. Exercise cannot be recommended as a substitute for hormone replacement therapy during menopause.
5. Activities that improve strength, flexibility and coordination may indirectly but effectively decrease the incidence of osteoporotic fractures by reducing the likelihood of falling. These should be included in an optimal exercise program for older women.

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