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Stress and Bones

The assertion that stress affects the gastrointestinal system, the cardiovascular system, and the immune system is hardly news, as there is now an extensive body of research substantiating such effects of stress. However, to suggest that stress affects bone health may seem more difficult to fathom.

Over the past few years, there has been increasing attention given to possible associations between psychological factors and bone mineral density (BMD). BMD is a measure of bone strength. As persons age, bone mass tends to decrease. Osteoporosis is a condition in which bone mineral density has declined to such a degree that fractures can occur easily. Several studies have found that there is an increased risk of decreased BMD and osteoporosis in individuals with depression, both women and men.

In 2014, a study was published in Psychosomatic Medicine that found a relationship between life satisfaction and BMD in post-menopausal women, a segment of the population known to be at higher risk for osteoporosis. Happier women tended to have less bone loss. Depression was also examined in this study and indeed, bone loss appeared to be exacerbated by the presence of depression.

How do psychological factors affect bone health? Physiological changes that occur with stress, such as the secretion of cortisol, can impact bone density. Similarly, inflammation, part of the body's response to stress, is also known to affect bone density. Furthermore, the behavior

changes that commonly occur with stress (i.e., less exercise, more substance abuse) are unfriendly to bone health.

The most common recommendations for promoting and/or maintaining bone health are getting adequate amounts of dietary calcium and Vitamin D, and getting regular weight-bearing physical activity. Although the roles of calcium and Vitamin D in mental health are continuing to be studied, it is well established that regular physical activity promotes mental health. The win-win with exercise in this context is that it is both good for brains and bones.

Paul J. Hershberger, Ph.D.

... is a clinical health psychologist. He is Professor of Family Medicine and Director of Behavioral Science for the Family Medicine Residency Program, Wright State University Boonshoft School of Medicine. His clinical practice includes psychotherapy, consultation, and coaching.

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To contact Dr. Hershberger:
e-mail: paul.hershberger@wright.edu
phone: (937) 734-2021