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Total Knee Replacement May Be More Painful for Vitamin D-Deficient Postmenopausal Women

New study suggests that vitamin D deficiency, smoking, and high body mass index are independent risk factors for increased postoperative pain for postmenopausal women undergoing total knee replacement

CLEVELAND, Ohio (May 5, 2021)—Vitamin D is a critical part of a healthy diet. Among other benefits, it has been shown to protect against bone disease and maintain soft tissue health. A new study suggests that it may also play a role in the degree of postoperative pain postmenopausal women experience after undergoing total knee replacement. Study results are published online today in *Menopause*, the journal of The North American Menopause Society (NAMS).

Vitamin D deficiency is a major issue globally. It is estimated that 60% of adults have insufficient levels of the bone-building vitamin. Estrogen deficiency in perimenopausal women has been associated with decreased levels of vitamin D. A sedentary lifestyle and lack of sun exposure have also been shown to contribute to vitamin D deficiency in perimenopausal women.

In this new study, researchers sought to investigate the effect of vitamin D levels on function outcomes and risk factors of moderate to severe pain in postmenopausal women after total knee replacement. The procedure is frequently recommended for treating advanced knee osteoarthritis when nonsurgical treatment is no longer effective. Although the procedure is safe, many women experience postoperative pain.

Previous studies have sought to identify factors that play a role in determining the amount of pain women feel after undergoing knee replacement surgery. Among other factors, these studies pinpointed postmenopausal status and low estrogen levels as being associated with joint pain primarily in women aged 50 to 59 years. This new study suggests a link between vitamin D deficiency and a greater risk of postoperative pain. It identified vitamin D deficiency, smoking, and a high body mass index (BMI) as independent risk factors for moderate to severe pain after knee replacement surgery.

The new study additionally found that there was a high prevalence (67.3%) of vitamin D deficiency in postmenopausal women scheduled for total knee replacement. These study results are in line with previous studies that suggested that vitamin D deficiency is associated with the development of osteoarthritis, as well as muscle cramps, bone pain, walking difficulty, decreased bone mineral density, and fractures. The results of studies like these could provide valuable insights to clinicians evaluating postmenopausal women before major joint surgeries.

Results are published in the article “Effects of preoperative serum vitamin D levels on early clinical function outcomes and the moderate-to-severe pain prevalence in postmenopausal women after primary total knee arthroplasty.”

“This study found that high body mass index, smoking, and vitamin D deficiency were independent risk factors for moderate to severe postoperative pain after knee replacement in postmenopausal women. Additionally, those with preoperative vitamin D deficiency had poorer functional outcomes. These findings highlight opportunities for clinicians to address these modifiable factors before postmenopausal women undergo joint replacement surgeries,” says Dr. Stephanie Faubion, NAMS medical director.

For more information about menopause and healthy aging, visit www.menopause.org.

Founded in 1989, The North American Menopause Society (NAMS) is North America’s leading nonprofit organization dedicated to promoting the health and quality of life of all women during midlife and beyond through an understanding of menopause and healthy aging. Its multidisciplinary membership of 2,000 leaders in the field—including clinical and basic science experts from medicine, nursing, sociology, psychology, nutrition, anthropology, epidemiology, pharmacy, and education—makes NAMS uniquely qualified to serve as the definitive resource for health professionals and the public for accurate, unbiased information about menopause and healthy aging. To learn more about NAMS, visit www.menopause.org.