

Maintaining Healthy Bones with Hormone Replacement Therapy



Hormone replacement therapy has long been regarded as the treatment of choice for a number of menopause-related symptoms, from hot flashes to low bone strength. These medications have been in use for many years and are currently widely used by post-menopausal women.

Preliminary results of the Women's Health Initiative have cast serious doubts on the ability of HRT to prevent coronary heart disease, and determined that HRT should not be initiated or continued for the purpose of treatment of coronary heart disease. At the same time, the study concluded that HRT had a significant effect on fracture incidence, with women using HRT suffering less fractures than their peers who did not receive HRT treatment.¹

A series of recent studies has examined the effectiveness of HRT treatments in the prevention of fractures. These studies found that HRT users demonstrated a significant reduction in fractures when compared to non-users.

With the proven effect of HRT use on bone strength, the importance of bone assessment with measurement devices that are sensitive to the effect of HRT treatment cannot be underestimated. Devices such as Sunlight Omnisense[®] 7000S, which have been shown to demonstrate an increase in bone measurement results following HRT use, can reassure patients and physicians alike that the HRT use is helping reduce fracture risk, increase compliance with a regimen of HRT medication, and lower the withdrawal rate of HRT users.

Reducing Fractures: An Important Effect of HRT

A large number of studies have shown that HRT is an effective method of reducing fracture risk in post-menopausal women.

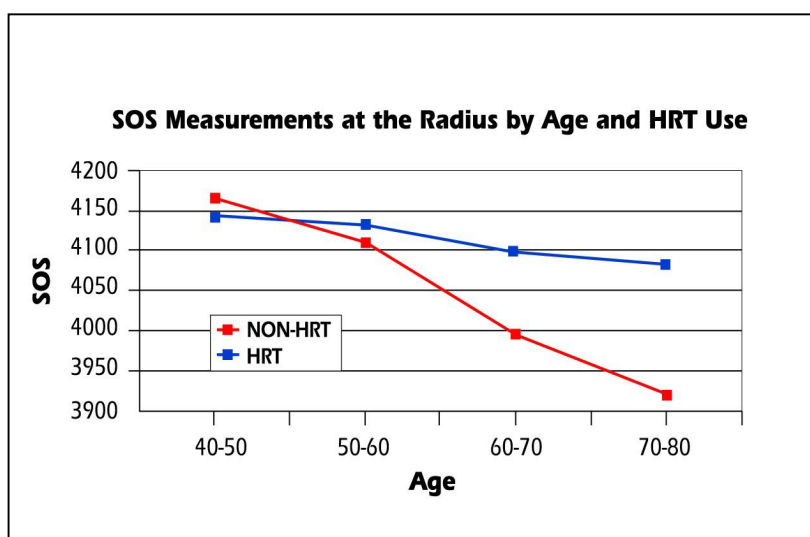
A meta-analysis of 22 studies researching non-vertebral fractures and HRT use found that HRT users had a 27% lower chance of developing non-vertebral fractures, compared to non-HRT users (relative risk = 0.73, compared to a risk of 1.0 for non-HRT-users).² HRT users under 60 showed even more significant results.

A second meta-analysis carried out on 13 studies researching vertebral fractures and HRT use.³ The analysis found that all of the studies reviewed showed a significant reduction in fracture incidence among HRT users (a 33% lower chance, compared to non-HRT users). This effect was more marked in osteoporotic women than in non-osteoporotic women.

A widely-based longitudinal study carried out in Finland (n=7217, age range 47-56) compared the incidence of fractures among HRT users and non-users by the end of the five-year study to determine the effectiveness of this treatment. HRT users had a 31% lower chance of developing any fracture, compared to non-users. The risk of forearm fractures among HRT users was even lower. The researchers concluded that HRT had a beneficial effect on the prevention of fractures in general and on distal forearm fractures in particular.⁴

Omnisense 7000S: Bone Measurement Sensitive to HRT Use

In order to accurately assess the effect of HRT medications on the bone strength of patients, it is crucial to regularly monitor bone with a bone assessment device sensitive to the effects of HRT on bone strength. Sunlight Omnisense[®] 7000S is such a device, with this ability demonstrated by higher SOS results for HRT users, indicating stronger bones for these subjects.



Data from one cross-sectional study showed that the bone strength of women using HRT remains similar across all post-menopausal age groups, while the bone strength of non-users is significantly lower for older age groups of post-menopausal women.⁵

In another study, the researchers found that measurement with Omnisense differentiated significantly between HRT users and non-users, while DXA measurements at the hip, femur and spine were much less sensitive to HRT treatment.⁶

A series of clinical studies have confirmed the strong connection between SOS scores and bone strength. SOS results have been shown to be significantly lower among women who have suffered fractures in the past, when compared to their non-fractured peers, demonstrating that SOS is a valid indication of bone strength and fracture risk.⁷

Frequently Asked Questions Regarding HRT Use and Bone Assessment

A number of questions asked by physicians assessing bone for post-menopausal patients with Sunlight Omnisense[®] appear below:

- *I have found that some post-menopausal patients under HRT therapy have high bone assessment results (up to T-score=+1, that is, one standard deviation higher than the bone strength of the young healthy population).*

These patients have low bone strength results when measured by DXA. How is this possible?

HRT therapy is known to increase the bone strength of post-menopausal women, and Sunlight Omnisense[®] is more sensitive to this effect of HRT treatment than DXA measurement is. This higher bone strength score reflect a real increase in bone strength for post-menopausal women under HRT therapy and a decrease in fracture risk for these women.

- *How should I treat post-menopausal patients on HRT therapy with high T-scores with Omnisense measurement and low T-scores with DXA measurement?*

These patients should be diagnosed according to Omnisense results and do not require treatment for low bone strength other than HRT therapy. Patients should be reassessed for bone strength if they discontinue HRT therapy.

- *Don't patients with low DXA results require biphosphonate treatment, even if they have high Omnisense results?*

No, because the high Omnisense T-score reflects a real increase in bone strength for post-menopausal women under HRT therapy and a decrease in fracture risk. Moreover, biphosphonates do not increase bone strength for post-menopausal women under 65. HRT is the best way to increase bone strength for women in this category.

Reducing Fracture Risk – A Vital Goal

With the danger of heart disease, cancer, and other life-threatening diseases looming large, many patients may see the issue of fracture risk as a secondary one. But fractures, especially hip fractures, can spell a loss of independence and a very real threat for elderly people. Hip fractures keep an older person confined to bed or a wheelchair and make him dependent on others for everyday activities, sometimes permanently. In addition, up to a fifth of hip fracture patients will die in the year following their fracture.

Despite these frightening figures, early detection of low bone strength and timely treatment can help prevent such outcomes.

In light of these facts, reducing the risk of fracture should be a primary aim of today's primary care physicians. With Sunlight Omnisense[®] 7000S, designed for use in the primary care setting, along with appropriate treatment and monitoring, this goal is within reach.

References

¹ Writing Group for the Women's Health Initiative Investigators, "Risks and Benefits of Estrogen Plus Progestin in Healthy Postmenopausal Women, Principal Results from the Women's Health Initiative Randomized Controlled Trial," *Journal of the American Medical Association*, July 2002, 288(3):321-333

² Torgerson, D.J., S.E.M. Bell-Syer, "Hormone Replacement Therapy and Prevention of Nonvertebral Fractures: A Meta-analysis of Randomized Trials," *Journal of the American Medical Association*, 2001, 285(22):2891-2897

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- ³ Torgerson, D.J., S.E.M. Bell-Syer, "Hormone Replacement Therapy and Prevention of Vertebral Fractures: A Meta-analysis of Randomized Trials," *BMC Musculoskeletal Disorders*, 2001, 2:7
- ⁴ Randell, K.M., R.J. Honkanen, H. Kroger, S. Saarikoski, "Does Hormone-Replacement Therapy Prevent Fractures in Early Post-Menopausal Women?," *Journal of Bone and Mineral Research*, 2002, 17(3):528-33
- ⁵ Weiss, M., A. Ben Shlomo, P. Hagag, M. Rapoport, S. Ish-Shalom, "Effect of Estrogen Replacement Therapy on Speed of Sound at Multiple Skeletal Sites," *Maturitas*, 2000, 35:237-243
- ⁶ Knapp, K. et al., "Quantitative Ultrasound Measurements Detect Skeletal Changes in Cortical Bone Following HRT Use," (abstract), presented at the 11th International Workshop on Calcified Tissues, Eilat, Israel, February 1999
- ⁷ Weiss, M., A. Ben-Shlomo, P. Haga, and S. Ish-Shalom, "Discrimination of Proximal Hip Fracture by Quantitative Ultrasound Measurement at the Radius," *Osteoporosis International*, 2000, 11:411-416
- ⁸ Barkmann, R., E. Kantorovich, C. Singal, D. Hans, H.K. Genant, M. Heller, C.C. Glüer, "A New Method for Quantitative Ultrasound Measurements at Multiple Skeletal Sites," *Journal of Clinical Densitometry*, 2000, 3(1):1-7
- ⁹ Hans, D., S.K. Srivastav, C. Singal, R. Barkmann, C.F. Njeh, E. Kantorovich, C.C. Glüer, H.K. Genant, "Does Combining the Results from Multiple Bone Sites Measured by a New Quantitative Ultrasound Device Improve Discrimination of Hip Fracture?" *Journal of Bone and Mineral Research*, 1999, 14(4):644-651