



After beating breast cancer, possible risk of brittle bones

Experts at OHSU are studying why survivors, especially young ones, seem more prone to break bones

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Facing cancer before 50 is burden enough for any person.

But scientists at Oregon Health & Science University fear younger women who have beaten breast cancer may carry an additional load -- an increased risk of breaking their bones.

Kerri Winters, an OHSU exercise physiologist, said some evidence indicates women who are treated for breast cancer before they hit menopause may be more likely to break their wrists and perhaps their hips.

And "Women who have gone through chemotherapy for breast cancer have about a five-times-greater risk of spine fracture than their healthy counterparts," Winters said.

Winters and her co-workers have launched two separate studies trying to figure out what may cause the breaks: drugs, biological changes or some other factor. So far, she said, there has been little research into why women face these problems after being treated for breast cancer.

Some cancer doctors seem to assume that once the women are cured of their tumors they "recover completely," Winters said. But they may not be fully healthy, when measured against women of the same age who haven't faced cancer.

Also, she said, studies that appeared in the 1970s and 1980s indicated that women with breast cancer were less likely to break bones. That could have shown up because higher estrogen levels both strengthen bones and increase the risk of breast cancer. But rates of fractures seem to be rising with the use of newer chemotherapy drugs in the past decade and longer.

Several possible reasons Winters offered several reasons why this might be. One is that chemotherapy tends to cause premature menopause in women who are menstruating when their cancer is treated. Menopause lowers estrogen levels, which weakens bones.

Certain anti-estrogen drugs used to fight breast, such as tamoxifen, may also be a factor, Winters said.

"Tamoxifen, interestingly, preserves bone in post-menopausal women but feeds bone loss in premenopausal women."

The OHSU researchers are also going to look at a little-studied possible cause of bone breaks: that women who have been through chemotherapy fall more than other women.

Most bone breaks are linked to a trauma, especially a fall, Winters said. That includes 90 percent of broken hips and almost all broken wrists.

Chemotherapy tends to tire people. That could make them more likely to fall. People on chemo also tend not to exercise because they are so tired, which could make them weaker and more likely to fall. Some chemo drugs might cause nerve or muscle changes in the body, Winters said.

A study of 200 women To tease out what role these play in bone breaks, the OHSU researchers hope to track about 200 women who have been through chemotherapy. That includes about 110 women who completed chemotherapy within roughly a year, and at least 60 women who are more than a year past their chemotherapy -- to see whether fracture risk changes over time.

The scientists will measure the women's bone density and markers of how fast their bones grow. That could help tell whether women are losing existing bone, or not growing new bone at a good rate. They also will look at muscle mass, balance and muscle and leg strength.

If the studies show that breast cancer survivors are breaking more bones, and offer clues as to why, doctors may be able to change the way they treat women, Winters said. That could include developing "a therapeutic exercise program" to help women stay strong and balanced during and after their cancer treatments.

Dr. John Smith, the head of breast cancer research at Providence Portland Medical Center, said he is telling patients about the studies, adding that there is little hard evidence on the question.

One or two papers have indicated premenopausal women may have less dense bones after taking tamoxifen, he said, but no one knows whether the changes are severe enough to add a significant risk of breaking bones. And though a study of using tamoxifen to prevent cancer didn't show an increased risk of fractures, that study also didn't look at women on chemotherapy, he noted.

"It's the premenopausal women who are the focus of this" scientific question, Smith said. "They're the ones who get chemotherapy, and chemo can cause . . . a shutdown of ovarian function. They may also get tamoxifen. So they could get a double-whammy to their bones."

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