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How Dense Are Your Bones?

BY PAUL ENGSTROM

To monitor the impact of cancer therapy on patients' bones over time, and to diagnose osteoporosis and determine who should be treated for it, clinicians assess bone mineral density (BMD), or mass relative to volume

The most common measure of BMD is dual-energy X-ray absorptiometry, or DEXA, a quick, simple, and painless procedure that typically involves two-dimensional X-ray scans of the lower spine and hips while the patient lies face-up on a cushioned table. DEXA is considered the gold standard because of its low-dose radiation exposure, precision, and moderate cost.

Julie Gralow, MD, a medical oncologist at the University of Washington in Seattle, says "in a perfect world," the patient receives a DEXA scan at the beginning of cancer treatment for a baseline measurement, and then another about a year later. Partly because bone tissue changes slowly, the American Society of Clinical Oncology does not recommend more frequent DEXA scans, Dr. Gralow says.

Magnetic resonance imaging, which produces images of body structures using magnetism, radio waves, and a computer, helps clinicians examine the minutiae of bone architecture, including vascular structure and nerves. But this expensive technique isn't a definitive measure of bone loss, and its use for that purpose is experimental.

Doctors can also employ other options, including a simple urine or blood test to check for substances that can indicate the patient is quickly losing bone calcium.