Discovery
Better patient care rests on bone health testing
Throughout our lives, we rely on our skeletal systems for stability and power. Bones are solid, yet resilient; changing in density and dimension and continually renewing themselves throughout our lives. But bones can become dangerously fragile. They can weaken from disease, smoking, lack of exercise, nutritional deficiencies, estrogen deficiency in women and low testosterone levels in men, medication, age and many other causes.

While porous bones and fractures may not be visible from the outside, the effects can be devastating, even life-threatening. Low bone mass can afflict anyone: men and women, young and old, all nationalities. People may not know they have osteoporosis until it’s too late. Early detection and treatment can mean a lifetime of strength for all of your patients. And Hologic Discovery is the key to early detection.

**FACT** Osteoporosis affects an estimated 75 million people in Europe, the U.S. and Japan.

**Discovery is the gold standard in osteoporosis assessment**
- Hologic developed the first Dual Energy X-ray Absorptiometry (DXA) bone densitometer, which remains the gold standard for spine and hip bone screening around the world.
- Hologic’s densitometry systems are used by more leading medical schools, universities and osteoporosis opinion leaders than any other bone densitometer.
- 90% of pharmaceutical trials using a single bone density vendor choose Hologic.
Discovery helps you build strong relationships with your patients, by providing the best diagnostic tool to support early detection and treatment of osteoporosis. Hologic Discovery provides a comprehensive platform for complete bone health assessment, now and in the future.

**FACT** Identifying and treating patients at risk of fracture, but who have not yet sustained a fracture, will substantially reduce the long term burden of osteoporosis. Reducing the risk of first fracture from 8% to 2% can reduce the 5-year fracture incidence from approximately 34% to 10%.
Discover the strongest system for bone health assessment

Working closely with industry leaders, Hologic designed the most advanced bone health assessment system in the industry today: Discovery. Apex is the heart of Discovery’s powerful applications suite. With exceptional precision—better than 1%, APEX gives you optimal clinical capabilities and streamlined workflow.

**Speed and image quality**
Discovery’s OnePass single sweep scanning captures the hip and spine with 10-second scanning time. No other system comes close to the combined speed and imaging resolution of Discovery, with better than 1.8 Lp/min.

**Automatic hip positioning**
Discovery’s AccuView finds the bone edge for perfect positioning and automatically centers the hip the same way on follow-up exams for improved precision. AccuView helps eliminate common positioning errors, saving time and eliminating unnecessary rescanning.

**Superior visualization**
Discovery’s imaging technology provides superb image quality by eliminating the beam overlap errors and image distortion found in rectilinear systems. Hologic also incorporates computer-aided fracture assessment, to quantify and display the degree of vertebral compression and help confirm the existence and severity of deformities.

**Consistency from exam to exam**
Discovery performs continuous, automatic calibration, ensuring precise measurements results from exam to exam. You can also create and automate your preferred scan protocols to speed analysis and improve workflow.
Hologic's OnePass technology achieves superior image quality and precision by eliminating the beam overlap errors and image distortion found in rectilinear systems.

**FACT** Osteoporosis is more common than other diseases. For example, the combined lifetime risk for hip, forearm and vertebral fractures coming to clinical attention is around 40%, which is equivalent to the risk for cardiovascular disease.
Discover **one platform** for hip, heart, obesity and more

Discovery is the single platform you need to support a broad spectrum of patients over a lifetime of care. Discovery enables new dimensions in care, including greater insights into hip biomechanical strength, visualization of calcification in the abdominal aorta that can indicate heart disease, lumbar spine and proximal femur bone mineral density (BMD) studies, BMD measurements of the entire skeleton, and many other clinical applications.

### Integrated structural analysis of the hip

Discovery enables a new dimension in bone health assessment with Hip Structural Analysis™ (HSA)\(^1\), which uses DXA measurements to calculate the structural geometry of the hip. HSA provides a better predictor of biomechanical strength than using BMD alone. This exclusive Discovery feature helps you determine whether bones are reduced in strength to the point that they require treatment and, if the patient is being treated, if the bones are getting stronger.

### Superior vertebral fracture assessment

Hologic pioneered the next generation of vertebral fracture assessment (VFA) technology, High Definition Instant Vertebral Assessment (IVA-HD), which dramatically improves the detection of vertebral fractures. IVA-HD doubles the resolution of previously available techniques with a safe low dose, single energy image. Discovery is the first system to integrate the definitive factors for osteoporotic fracture risk: BMD and VFA.

### Same Patient Comparison

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\(^1\) HSA is a trademark of The Johns Hopkins University Applied Physics Laboratory. The incorporation of HSA into Hologic bone densitometers is being conducted under a continuing research agreement between the Johns Hopkins University and Hologic.


Heart disease detection through calcification visualization

Using the enhanced visualization provided by IVA-HD, Discovery can help you appreciate calcifications in the abdominal aorta. Clinical studies have shown that Abdominal Aortic Calcification (AAC) is a significant indicator of heart disease. Patients who have osteoporosis are often at risk for cardiovascular problems, the number one cause of morbidity and mortality in older women and men.

Whole body composition

Obesity is a growing health concern worldwide. According to the World Health Organization there are an estimated 400 million obese adults worldwide. In the last 20 years morbid obesity (BMI > 40) has gone from 1 in 200 adults to 1 in 50 adults in the U.S. alone. One in five school age children (9.2 million) are either overweight or obese. Discovery’s Body Composition Analysis accurately measures fat mass, lean mass and total mass for the entire skeleton and for up to seven user-defined sub-regions. This information provides you with a comprehensive analysis of fat distribution. It also allows you to monitor results for your pediatric patients to a variety of criteria, (i.e. height vs. weight, weight vs. age, CDC growth curves).

Pediatric bone health assessment

Discovery uses advanced analysis algorithms to detect and measure the low-density bone mass that is characteristic of pediatric patients.

Evaluate therapies with supine lateral BMD

Discovery offers more clinical options for vertebral assessment than any other bone densitometer available today. Supine lateral spine BMD provides a more sensitive means of detecting bone loss or gain than AP spine BMD measurement alone, especially in older patients. With the push of a button, the Discovery C-arm automatically moves into position for highly precise supine lateral scanning. The rotating C-arm eliminates patient repositioning, which means more precise lateral and AP views. With Discovery’s advanced fan-beam DXA, you get a clear measurement and visualization of trabecular-rich vertebral bodies, which are usually the first bone tissues to show degeneration as well as positive response to therapy.
Breakthrough scanning speed with superb visualization is just one part of the workflow efficiency built into Discovery. Discovery automatically downloads patient information and scan results and, with the touch of a button, produces a graphical report that includes: patient biographical information and indications, studies performed, a chart of bone density scores by region, IVA images, and physician notations. The reports are customizable by physician or institution.

Discovery makes it easy to track progress over time. Trending provides an analysis of your patient’s response to treatment and therapies. The system generates a baseline of the patient’s condition and then provides reports on rate of change.

Support a paperless densitometry workflow

Discovery offers more choices for securely accessing, storing and viewing information electronically. You can download patient data from existing electronic medical record systems and HIS/RIS, eliminating the time, error and costs associated with re-entering patient demographics. You can also connect Discovery to a hospital PACS for storing and retrieving patient records.

You can also transmit studies to your tablet PC or remote workstation for review from any location, and share images with other physicians for consultations or referrals.

Add value to your practice

Discovery is a space efficient, easy to use diagnostic system that adds tremendous value to your practice. Most systems fit comfortably in an 8x8 room (2.5m x 2.5m), with no special room preparation required.

Easy to use

Discovery is designed for patient comfort and operator convenience. Graphical positioning aids demonstrate correct patient alignment and scan start positions. Training and certification are easy, and technologists qualify for ECE* credits.

Affordable

Discovery is an affordable system with a fast return on investment. We provide a complete suite of marketing and education tools to help explain the importance of bone density screening to your patients.

*Accredited by the American Society of Radiologic Technologists.
FACT* Vertebral fractures can lead to back pain, loss of height, deformity, immobility…and even reduced pulmonary function. Their impact on quality of life can be profound as a result of loss of self-esteem, distorted body image and depression. Vertebral fractures also significantly impact on activities of daily living.

Physician’s Report Writer automatically downloads and formats key information into a customizable electronic report that includes patient biographical information, BMD, T-/Z scores, and IVA results in a concise format for better assessment of fracture risk.
Supine lateral spine assessment, high-definition IVA, OnePass scanning and rotating C-arm, integrated hip structural analysis, and detection of abdominal aorta calcifications: these are just some of the advances pioneered by Hologic. With Discovery, you have a platform that will enable you to take advantage of new and important breakthroughs in patient care, now and in the future.

**3D hip measurement for more accurate fracture assessment**

Hologic is pioneering 3D hip measurements, a breakthrough dimension in fracture risk assessment. Analyzing bone structure requires creating a 3D volumetric density model. Combining low-dose tomographic technology with the rapid image sequencing made possible by a rotating C-arm, Discovery can capture multiple views of the femur at different angles and mathematically construct a 3D rendering. 3D hip measurement will provide a powerful new tool for measuring the true strength of the femur and more accurately determining the risk of future fractures.

**FACT** Treatment of established osteoporosis is cost-effective irrespective of age and therapies with proven rapid efficacy may offer important value to healthcare payers, providers and patients.

\(^1\) FDA Clearance pending.
Discover the strongest support in skeletal health solutions

When our customers bring sophisticated imaging systems into their hospitals, offices and clinics, they expect and deserve world-class support. You have the confidence of knowing that Discovery is backed by the strongest service team possible.

- Hologic support outperforms other manufacturers in survey after survey
- We provide everything from site planning to operator training and day-to-day maintenance
- We offer a wide variety of training and service options to meet each customer’s specific support and budget needs.

**FACT** A 10% loss of bone mass in the vertebrae can double the risk of vertebral fractures, and similarly, a 10% loss of bone mass in the hip can result in a 2.5 times greater risk of hip fracture. A prior fracture is associated with an 86% increased risk of any fracture.

The power of Hologic is the power of clear innovation and a singular focus...to challenge the boundaries of science and technology every day. Our passion has led to discoveries that contribute to earlier detection, more accurate diagnoses, and better overall patient care. As we focus on the future, we are bound by our clarity of vision. A vision created solely to enhance yours.