



Improve  
Prediction

Prevent  
Fracture



# IMPROVE THE PREDICTION OF YOUR PATIENT'S FRACTURE RISK WITH TRABECULAR BONE SCORE (TBS) OSTEO V.3.1.2



## TBS<sup>TM</sup> OSTEO v3.1.2 SOFTWARE

- ◆ Calculates an index, TBS, highly correlated with bone microarchitecture
- ◆ Fully All-in-One automated report (editable) combining all the findings:
  - ▶ Skeletal Status Statement Chart based on combined BMD and TBS
  - ▶ TBS score with automatic microarchitecture assessment
  - ▶ Tools to aid the therapeutic decision: FRAX and BMD T-score adjusted for TBS
  - ▶ Editable FRAX reference curve adjusted for TBS
  - ▶ Monitoring trend curve for patient's follow up data
  - ▶ Displays the direction toward the risk zone the patient is heading
- ◆ Allows for retrospective analysis of patients' DXA scans

## WHY IS FRACTURE RISK PREDICTION IMPORTANT?

Worldwide, there is one osteoporosis fracture every 3 seconds<sup>(1)</sup>. And more than 50 percent of major osteoporotic fractures occur in non-osteoporotic patients<sup>(2)</sup>.

Dual-energy X-ray absorptiometry (DXA) scans are the gold standard to measure bone mineral density (BMD) levels, but clinicians need more information to make an accurate assessment of their patients' level of fracture risk and the eventual possibility of treatment. TBS Osteo (iN Insight<sup>TM</sup>) assesses the **microarchitectural deterioration** of bone tissue thus fulfilling the WHO<sup>(3)</sup> definition of osteoporosis. TBS predicts fractures independently of BMD, clinical risk factors, and FRAX<sup>(4-5)</sup>.

## WHAT IS TBS OSTEO POWERED BY TBS iN SIGHT MEDICAL AI TECHNOLOGY?

Advanced imaging software for bone densitometers (DXA) - enhances the ability to predict osteoporosis fracture risk and improve patient management. The result is expressed as a Trabecular Bone Score (TBS)

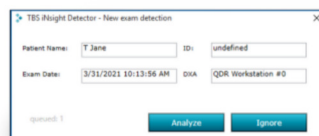
## HOW DOES IT WORK?

Integrated seamlessly on densitometers, TBS Osteo uses DXA scans from a spine BMD exam to have an indirect, yet highly correlated, index of bone microarchitecture.

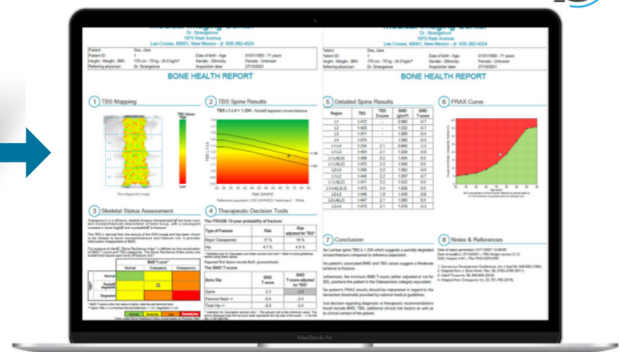
- ◆ No additional hardware is needed
- ◆ No additional radiation for patients
- ◆ No additional scan time



DXA Scan



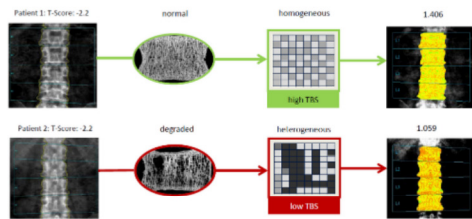
TBS Automatic Detection Processing



ALL-IN-ONE TBS Report



# INTERPRETATION OF TBS AND BMD COMBINED



## SAME BMD BUT DIFFERENT TBS

Two patients can have similar BMD but different bone structures<sup>(6)</sup> and subsequently, have different fracture risks.

TBS has proven to be an additional aid to better characterize your patient's risk profile independently of BMD and most clinical risk factors and thus can improve your patient management

		BMD T-score*		
		Normal	Osteopenia	Osteoporosis
TBS**	Normal	Normal	Moderate	Low
	Partially degraded	Moderate	Low	Severely low
	Degraded	Low	Severely low	Severely low

\* BMD T-score is the min value of spine, total hip and femoral neck  
\*\* Spine TBS L1-L4 Normal microarchitecture > 1.31, Degraded ≤ 1.23  
Color coded Bone Resilience Index zones based on Fracture Risk<sup>(7)</sup>

## SKELETAL STATUS ASSESSMENT

The combination of both TBS and BMD improves the assessment of fracture risk, particularly in osteopenic patients and patients with secondary osteoporosis<sup>(7)</sup>.

The BMD T-score:

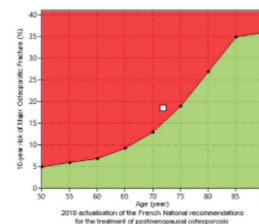
Bone Site	BMD T-score	BMD T-score adjusted for TBS*
Spine	-2.3	-2.5
Femoral Neck >>	-2.2	-2.3
Total Hip >>	-2.2	-2.3

\* Validated for Caucasian women only \*. The grayed cell is the minimum value. The arrow displayed near the hip bone sites represents the hip side of the exam : <> for left hip, >> for right hip.

## BMD T-SCORE AND FRAX ADJUSTED BY TBS

Besides improving the accuracy of FRAX, the FRAX adjusted by TBS facilitates clinical integration of TBS in guidelines where FRAX is used to determine treatment eligibility.

BMD T-score adjusted by TBS is also provided<sup>(8)</sup> to facilitate TBS interpretation especially when the BMD T-score is a primary criterion for osteoporosis treatment initiation and/or reimbursement.



## EDITABLE FRAX REFERENCE CURVE ADJUSTED FOR TBS

This section allows importing graph data for your local region FRAX guidelines representing 10-years risk for Major Osteoporotic Fractures within a specific age range adjusted for TBS.

## COMPATIBILITY WITH TBS OSTEO INSIGHT

### Hologic Systems

Bone Densitometers: Horizon<sup>TM</sup> A,C, W, Ci, Wi | Discovery<sup>TM</sup> A,C, W, SL, Ci, Wi

BMD Software Versions: APEX 4.0 to 5.6.1.2

Operating Systems: Windows 7 and Windows 10

## BOOK A DEMO OF TBS OSTEO



1. <https://www.osteoporosis.foundation/facts-statistics/epidemiology-of-osteoporosis-and-fragility-fractures>, retrieved on 20.May 2021  
2. Siris et al. (2004). Bone Mineral Density Thresholds for Pharmacological Intervention to Prevent Fractures. Arch Intern Med.;164(10):1108-1112. doi:10.1001/archinte.164.10.1108; 3. WHO, Consensus development conference: diagnosis, prophylaxis, and treatment of osteoporosis. Am J Med 1993; 94: 646-50. 4. Hans et al. J. Bone. Miner. Res. 26, (2011); 5. Mc Closkey et al. J. Bone. Miner. Res. 31. (2016)  
6. Adapted from Silva et al. J. Bone Miner. Res. 29 (2014); 7. Uliveeri et al. Endocrine 47, (2014); 8. Adapted from Osteoporosis Int 29, (2018)

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