

# Reading the TBS report

**Medical Imaging Center** **1**

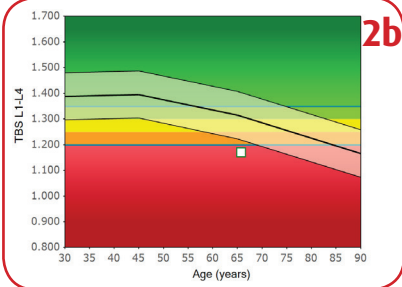
957 Ocean Boulevard - 97212 - Portland

<b>Patient:</b> Ljh, 386	<b>Patient ID:</b> OH
<b>Date of birth:</b> 01/03/1941 65.7 years	<b>DXA acquisition date:</b> 09/08/2006
<b>Height / Weight:</b> 173.2 cm / 77.1 kg	<b>Prescribing doctor:</b>
<b>Gender / Ethnicity:</b> Female / White	

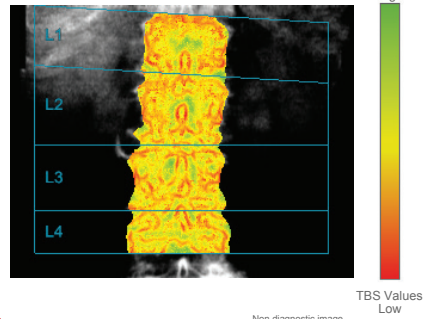
**SPINE TBS REPORT**

**2a** **TBS reference graph (\*)** **2**

TBS L1-L4: 1.171



**2c** **TBS Mapping** **2c**



**3** **Additional results** **3**

Region	TBS	BMD	BMD T-Score
L1	1.094	0.955	-1.5
L2	1.142	1.123	-0.7
L3	1.174	1.174	-0.3
L4	1.276	1.274	0.4
L1-L4	1.171	1.129	-0.5
L1-L3	1.136	1.092	-0.7
L1-L2	1.118	1.047	-1.0
L2-L4	1.197	1.181	-0.3
L2-L3	1.158	1.148	-0.5
L3-L4	1.225	1.215	0.0

**4** **Comments** **4**

**5** **5**

(\*) TBS reference graph for US women (obtained from US caucasian women)

The TBS is derived from the texture of the DXA image and has been shown to be related to bone microarchitecture and fracture risk. This data provides information independent of BMD value; it is used as a complement to the data obtained from the DXA analysis and the clinical examination. The TBS score can assist the health care professional in assessment of fracture risk and in monitoring the effect of treatments on patients across time.

Analyzed DXA file: "34fa54ac8.mes" (TBS analysis done on: 01/17/2013, version: 2.0.0.0 )  
 This report was based on the reanalysis of a DXA scan. Before accepting this report, the user is held accountable for ensuring that the DXA examination has been carried out:  
 - by the osteodensitometer GE-Lunar iDXA (# 200024)  
 - after the latest TBS iNsight calibration, the 1/17/2013 5:59:19 PM.

**1. Header and patient's information** — Displays report header, patient's data and scan date.

**2. Analysis data** — Displays TBS value, reference graph and TBS mapping.

**2.a TBS score** — Displays TBS value of the selected region. Usually L1-L4.

**2.b TBS reference graph** — Using this graph, one can compare the TBS value of a patient to that of the normal population. Note: Reference values for male patients are not currently available. TBS score will be calculated but no reference curve will be displayed.

**2.c TBS mapping** — Local TBS values are displayed using a color scale where values representing a well structured cancellous bone are green and poorly structured ones are red. Those values are displayed on the spine DXA image (non diagnostic image).

**3. Detailed results** — Results table for all regions of interest and their combinations.

**4. Comments** — Free writing area for the physician's comments.

**5. Footer** — Displays legal information, software information and information on the scan.

# Interpreting TBS Values and Bone Density: Use in Patient Management

**TBS is an aid for patient management. All diagnosis and treatment decisions require clinical judgment and consideration of the clinical context of the patient.**

The combination of TBS and BMD allows refining the fracture risk analysis, particularly in osteopenic patients. It results the following concept of interpretation table, with risk levels expressed as a number of major osteoporotic fractures per 1'000 women/year:

Risk Class based on Spine TBS	Risk Class based on minimum hip or spine BMD T-score		
	Normal	Osteopenia	Osteoporosis
≥ 1.300	Green	Yellow	Orange
1.200 < > 1.300	Light Green	Yellow-Orange	Red
≤ 1.200	Yellow	Orange	Dark Red

Adapted from Table 3 in Hans et al. J Bone Miner Res. 2011 Nov;26(11):2762-9

*Color coded risk levels for major osteoporotic fracture per 1'000 women per year, based on a ≈30'000 women study.*

Color coding based on the following sub-categories of risk:

Color Code	Risk class of Major osteoporotic fracture per 1'000 women per year
Green	≤ 4
Light Green	] 4 - 5 ]
Yellow	] 5 - 7 ]
Yellow-Orange	] 7- 10 ]
Orange	] 10 - 14 ]
Red	] 14 - 20 ]
Dark Red	> 20

TBS is an independent risk of fracture and therefore an additional clinical risk factor. As such, it should be interpreted in accordance with the Guidelines of the National Osteoporosis Foundation (NOF): "Decisions on whom to treat and how to treat should be based on clinical judgment using this Guide and **all available clinical information.**"<sup>1</sup> and according to the good clinical practice as defined in Position Development Statements of the International Society for Clinical Densitometry (ISCD)<sup>2</sup>.

<sup>1</sup> NOF Clinicians' Guidelines to Prevention and Treatment of Osteoporosis 2010.

<sup>2</sup> <http://www.iscd.org/official-positions/>