

# DEXA BONE DENSITY STUDY WO VERT FX ASSESSMENT - Details

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## Comments from the Doctor's Office

Please let her know her bone density is a little bit better than it was in 2019. Please continue calcium and vitamin D. There has been 4.7% improvement in the lumbar spine and a 7% improvement in the hip. With her age and bone density the studies show that she has an 18% chance of breaking her hip in the next 10 years.

## Study Result

### Narrative

#### DUAL ENERGY X-RAY ABSORPTIOMETRY

##### INFORMATION:

██████████ postmenopausal patient with osteoporosis of the spine and left hip.

FRAX risk factors: Parental fracture

##### COMPARISON:

5/14/2019

##### PROCEDURE:

Regional bone mass was determined with the Hologic Horizon W. The lumbar spine L1-L4 B and left hip were evaluated.

Study quality: Good technical quality without artifact or local structural change.

##### FINDINGS:

Lumbar Spine

Total BMD: 0.802

T-Score: -2.2

Z-Score: +0.3

There has been a statistically significant interval change of +0.036 g/cm<sup>2</sup> (+4.7 %) since the most recent exam.

Left hip

Total BMD: 0.712

T-Score: -1.9

Z-Score: 0.0

Femoral neck T-Score: -2.3

There has been a statistically significant interval change of +0.048 g/cm<sup>2</sup> (+7.3 %) since the most recent exam.

The LSC for Inland Imaging facilities in Spokane is 0.028 g/cm<sup>2</sup> for the lumbar spine, 0.017 g/cm<sup>2</sup> for the total hip, 0.022 g/cm<sup>2</sup> for the femoral neck and 0.018 g/cm<sup>2</sup> for the forearm.

(Based on a precision measurement of the scanner, the least significant change (LSC) represents the smallest difference between successive measurements of bone mineral density (BMD) that can be considered to be a real change and not attributable to random error.)

#### IMPRESSION:

Low bone density (Osteopenia).

See appendix 1,2 for definitions and follow up recommendations.

#### FRACTURE RISK:

10-year fracture risk:

Major Osteoporotic Fracture: 27%

Hip Fracture: 18%

See appendix 3, 4 for explanation and treatment recommendations.

#### APPENDIX:

##### 1. EXPLANATION OF BMD INTERPRETATION

BMD: Bone Mineral Density in grams/cm<sup>2</sup>

T-score: Number of standard deviations above (+) or below (-) the mean bone density compared to young adult Caucasian reference population.

Z-score: Number of standard deviations above (+) or below (-) the mean bone density compared to age-matched and ethnically matched controls.

#### WHO Diagnostic Criteria

Postmenopausal women and men age 50 and above

T-Score:

Normal:  $\geq -1.0$

Low Bone Density (Osteopenia):  $< -1.0 > -2.4$

Osteoporosis:  $< -2.5$

Premenopausal women, men younger than age 50, and children

Z-Score:

Within the expected range for age:  $-1.9$  and above

Below the expected range for age:  $< -2.0$

(Lowest value between total lumbar spine, total hip, femoral neck or,

if studied, one-third radius, determines final interpretation)  
(Assessment of fracture risk and its application to screening for postmenopausal osteoporosis. Report of a WHO Study Group. Geneva, World Health Organization, 1994 WHO Technical Report Series, No. 843)

## 2. FOLLOW UP RECOMMENDATIONS

Recommendation for Follow-up Screening DXA Scan:

T-score  $\geq -1.5$  or greater: Repeat DXA in 15 years

T-score  $-1.5$  to  $-1.9$ : Repeat DXA in 5 years

T-score  $\leq -2.0$  or less: Repeat DXA in 1-2 years

Shorter follow up intervals may be appropriate in patients who have a history of prior hip or clinical vertebral body fracture, are undergoing treatment for osteoporosis/being evaluated for response to treatment, are of advanced age, or have an underlying medical condition or are receiving drug therapy known to affect BMD (ie secondary hyperparathyroidism, high dose glucocorticoids).

Follow up intervals for patients undergoing pharmacotherapy are typically 1-2 years while follow up intervals for patients on high dose glucocorticoids may be as short as 6 months.

(N Engl J Med 2012;366:225-33)

## 3. EXPLANATION OF FRACTURE RISK ASSESSMENT

Absolute fracture risk calculated using FRAX USA-adapted database and patient reported data.

Risk may be increased by additional risk factors not included in FRAX (eg fall risk, recent fracture, multiple ( $>1$ ) prior fragility fractures, elevated bone turnover markers) and modified by a dose-response effect of multiple clinical risk factors included in FRAX (excess alcohol consumption, smoking, and use of glucocorticoids). ([www.shef.ac.uk/FRAX](http://www.shef.ac.uk/FRAX))

## 4. GENERAL TREATMENT RECOMMENDATIONS

Before initiating treatment for osteoporosis, medical evaluation for secondary causes of decreased bone density should be considered.

National Osteoporosis Foundation (NOF) treatment guidelines

Initiate pharmacological treatment:

- In those with hip or vertebral (clinical or morphometric) fracture.
- In those with T-score less than or equal to  $-2.5$  at the femoral neck, total hip, or spine.
- In postmenopausal women and men age 50 and over with low bone mass (T-score between  $-1.0$  and  $-2.5$ , osteopenia) at the femoral neck, total hip, or lumbar spine by DXA and a 10-year hip fracture probability

equal or greater than 3% or a 10-year major osteoporosis-related fracture probability greater than 20% based on the USA-adapted WHO absolute fracture Risk Algorithm (FRAX); [www.nof.org](http://www.nof.org) and [REDACTED].

ation: Clinician's Guide to

Preliminary Report by: [REDACTED]

Final Report Signed by: [REDACTED]

Sign Date/Time: 07/13/2021 8:35 AM PDT

The radiologist has reviewed the images and edited/approved the report. For interventional procedures, the signing radiologist was present for the key portions of the exam.

## Component Results

There is no component information for this result.

## General Information

Ordered by [REDACTED]

Collected on 07/13/2021 8:01 AM

Resulted on 07/13/2021 8:35 AM

Result Status: Final result

**This test result has been released by an automatic process.**

If you have any questions or concerns about your test, please contact your clinic to review your results with your physician.

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