# BONE DENSITY & OSTEOPOROSIS:

## An Update for Manitoba Physicians

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## "FRAX and New BMD Reporting Guidelines"

*What is FRAX?*

The World Health Organization (WHO) created a fracture risk assessment tool, called "FRAX", which estimates a patient's 10-year fracture risk from the input of several risk factors: age, sex, body mass index, prolonged glucocorticoid use, current smoking, high alcohol intake, parental hip fracture, rheumatoid arthritis, prior fragility fracture and (optionally) femoral neck BMD [1]. The important news is that FRAX is now being utilized for BMD reporting in Manitoba.

FRAX is country-specific; it is tailored to the fracture rates found in each country. The Canadian FRAX tool (http://www.sheffield.ac.uk/FRAX/tool.jsp?country=19) was approved for use in the "2010 Clinical practice guidelines for the diagnosis and management of osteoporosis in Canada" [2]. The focus of this 2010 guideline is better identification and management of women and men at high risk for fragility fracture (http://www.osteoporosis.ca/multimedia).

*What will be the same?*

Clinicians in Manitoba have been seeing their patients' 10-year fracture risks reported since 2006. The Fracture Risk categorization remains the same:

"Low risk" = <10% chance of an osteoporotic fracture
"Moderate risk" = 10 - 19% chance of an osteoporotic fracture
"High risk" = ≥ 20% chance of an osteoporotic fracture
"Not applicable" = premenopausal women and men < 50 years

*What will change?*

Since FRAX includes slightly different risk factors from those used in the previous Manitoba fracture risk calculator, for a small minority of patients there will be a change in their Fracture Risk categorization (either higher or lower). Technical issues you should be aware of include the fact that FRAX uses the femoral neck as the primary site for fracture risk estimation (the total hip site is still reported as the preferred site for hip BMD monitoring due to better precision). Lumbar spine BMD (if much lower than femoral neck BMD) is now included in the fracture risk estimation, as well as an adjustment for the patient's glucocorticoid dose [3,4].

In accordance with the "2010 Clinical practice guidelines for the diagnosis and management of osteoporosis in Canada" [2]:

- Individuals with a diagnosis of osteoporosis (minimum T-score -2.5 or lower) are considered to be at the very least moderate risk;
- Individuals over age 50 years with a fragility fracture of the hip or vertebra, or those who have had more than 1 fragility fracture, are considered to be high risk for future fractures irrespective of BMD and fracture risk from FRAX.

*What is VFA?*

Vertebral Fracture Assessment (VFA) is a procedure on bone densitometers that acquires a low dose lateral spine image for the purpose of vertebral fracture recognition. Vertebral fractures are associated with a five-fold increase in the risk of future fractures and are automatically considered "High Risk".

VFA will be done automatically according to predefined criteria and does not need to be ordered. VFA results are integrated into the BMD and Fracture Risk report.

*Which patients need treatment?*

Group 1: Women and men over age 50 years, if reported to be:

- **High risk**: Pharmacologic therapy should be offered;
- **Moderate risk**: This group requires a careful evaluation to identify vertebral fractures (e.g., spine x-rays) or additional clinical risk factors which may contribute to a decision to offer pharmacologic therapy;
- **Low risk**: These individuals usually do not require pharmacologic therapy. In general, lifestyle measures are sufficient for those at low fracture risk who do not have additional risk factors for rapid BMD loss.

Group 2: Women and men under age 50 years:

- Treatment considerations are complex and often benefit from consultation with a specialist.

*Does treatment affect the risk category?*

When taken correctly, first line treatments for osteoporosis significantly reduce vertebral and non-vertebral fracture risk even when BMD values are unchanged. The FRAX tool does not take into account the risk reduction associated with effective pharmacologic therapy, and therefore the risk category will not change. Thus for a patient who is being treated, the reported risk category reflects the fracture risk that would be expected for a hypothetical patient who is identical to the one you requested a BMD on, but who is treatment-naıve.

This newsletter and other program information are available through the Manitoba Health web site (http://www.gov.mb.ca/health/programs/bonedensity).

References


[1] Kanis JA, Oden A, Johansson H, Borgstrom F, Strom O, McCloskey E. FRAX and its applications to clinical practice. Bone 2009;44:734-743.

[2] Papaioannou A, Morin S, Cheung AM, Atkinson S, Brown JP, Feldman S, Hanley DA, Hodsman A, Jamal SA, Kaiser SM, Kvern B, Siminoski K, Leslie WD. 2010 clinical practice guidelines for the diagnosis and management of osteoporosis in Canada: summary. CMAJ. 2010;182:1864-1873.

[3] Kanis JA, Johansson H, Oden A, McCloskey EV. Guidance for the adjustment of FRAX according to the dose of glucocorticoids. Osteoporos. Int. 2011;22:809-816.

[4] Leslie WD, Lix LM, Johansson H, Oden A, McCloskey E, Kanis JA. Spine-hip discordance and fracture risk assessment: a physician-friendly FRAX enhancement. Osteoporos. Int. 2011;22:839-847.