

# Clinical usefulness of bone turnover marker concentrations in osteoporosis

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A new review published by a joint scientific working group of the International Federation of Clinical Chemistry and Laboratory Medicine (IFCC) and the International Osteoporosis Foundation (IOF) finds that current evidence continues to support the potential for bone turnover markers (BTMs) to provide clinically useful information for monitoring osteoporosis treatment.

The IFCC-IOF Working Group for the Standardization of Bone Marker Assays concluded that:

- Important data are now available on reference interval values for CTX and PINP across a range of geographic regions and for individual clinical assays;
- An apparent lack of comparability between current clinical assays for CTX has become evident, indicating the possible limitations of combining such data for meta-analyses;
- To improve interpretation of patient results harmonization of units for reporting serum/plasma CTX (ng/L) and PINP (µg/L) is recommended;
- Further study of the relationships between the clinical assays for CTX and PINP as well as physiological and pre-analytical factors contributing to variability in BTM concentrations is required.

The recommendations reinforce the previous recommendations made in 2010 by the IOF-IFCC Bone Marker Standards Working Group and the National Bone Health Alliance in 2012 which called for standardized

analytical methods of reference analytes.

Professor Howard Morris, School of Pharmacy and Medical Science at the University of South Australia said, "Significant progress has been made on the usefulness of BTMs in monitoring the efficacy of osteoporosis treatment. As well, although many limitations remain, the current status in this field continues to support the potential for BTMs to provide clinically useful information in regard to the relationship between BTM and incident fractures."

Co-author and Chair of the IOF Committee of Scientific Advisors, Professor Cyrus Cooper added, "Steady advances are being made in this field and we look forward to a promising ongoing initiative to bring all BTM results from clinical trials in osteoporosis together in one individual meta-analysis. We hope that this will provide valuable information which in the future may allow the inclusion of [bone turnover markers](#) in fracture risk estimation tools such as FRAX."

**More information:** H.A. Morris et al, Clinical usefulness of bone turnover marker concentrations in osteoporosis, *Clinica Chimica Acta* (2016). [DOI: 10.1016/j.cca.2016.06.036](https://doi.org/10.1016/j.cca.2016.06.036)

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