

STANDARDIZATION OF THE NOMENCLATURE OF BONE STATUS INDICES: A MILESTONE IN DIAGNOSTIC CONSISTENCY AND CLARITY

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The recent position statement of the Joint International Osteoporosis Foundation (IOF) Working Group and International Federation of Clinical Chemistry (IFCC) Committee on Bone Metabolism on the Correct Use of the Nomenclature of Biochemical Indices of Bone Status [1] marks a significant milestone in the pursuit of clarity and uniformity within bone health research and clinical practice. These Guidelines are a long-awaited update to the nomenclature system established over two decades ago [2]. The newly proposed term "Bone Status Indices" (BSIs) aims to unify terminology and enhance

comparability across studies, creating a robust framework that includes structural, enzymatic, and regulatory components involved in bone metabolism.

Historically, terms such as “bone turnover markers” or “metabolic markers of bone turnover” were widely used, yet each represented only parts of bone metabolism. This has led to inconsistencies in the literature, with different terms applied to identical markers, potentially complicating data sharing and impeding the standardization of bone health diagnostics. The term BSIs is introduced to encompass a broader spectrum, addressing structural elements, metabolic byproducts, enzymes and regulatory molecules that collectively reflect bone status. The new nomenclature strives to facilitate clearer communication and more accurate interpretations, benefiting both researchers and clinicians.

In an era where precision medicine depends on data interoperability, the uniform use of standardized nomenclature is essential. This position paper, endorsed by the IOF and IFCC, will likely shape the landscape of bone health diagnostics, aligning clinical language and laboratory reporting for improved patient care and research quality. To maximize its impact, it is imperative that all stakeholders (e.g., clinicians, researchers, clinical laboratories, publishers, and guideline developers) adopt this nomenclature consistently in their practice, publications, and recommendations. Broad implementation will ensure consistency, strengthen collaborative research, and enhance the translational value of findings in bone metabolism.

The implementation of standardized nomenclature for BSIs is an important step towards a consistent and comprehensive approach to bone status evaluation, reinforcing the foundation for future advancements in osteoporosis management and beyond. This initiative not only honours the legacy of prior standardization efforts but also propels the field towards a future where diagnostic precision is seamlessly integrated into clinical practice.

Declarations

Conflict of interest Etienne Cavalier, Richard Pikner, Samuel D Vasikaran, Harjit Pal Bhattoa, Konstantinos Makris, Eugene V McCloskey, Nicholas C Harvey, Niklas Rye Jorgensen and Giovanni Lombardi have no conflict of interest to disclose.

References

1. Lombardi G, Jørgensen NR, Harvey NC et al (2024) Guidelines for the correct use of the nomenclature of biochemical indices of bone status: a position statement of the Joint IOF Working Group and IFCC Committee on Bone Metabolism. *Clin Chem Lab Med*. <https://doi.org/10.1515/cclm-2024-1148>
2. Delmas PD (2001) Standardization of bone marker nomenclature. *Clin Chem* 47:1497. <https://doi.org/10.1093/clinchem/47.8.1497>