

Accepted Manuscript

Clinical experience with microindentation *in vivo* in humans

Sabina Herrera, Adolfo Diez-Perez

PII: S8756-3282(16)30328-3
DOI: doi: [10.1016/j.bone.2016.11.003](https://doi.org/10.1016/j.bone.2016.11.003)
Reference: BON 11175

To appear in: *Bone*

Received date: 12 September 2016
Revised date: 31 October 2016
Accepted date: 2 November 2016



Please cite this article as: Herrera Sabina, Diez-Perez Adolfo, Clinical experience with microindentation *in vivo* in humans, *Bone* (2016), doi: [10.1016/j.bone.2016.11.003](https://doi.org/10.1016/j.bone.2016.11.003)

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

Review

Clinical experience with microindentation *in vivo* in humans

Sabina Herrera; Adolfo Diez-Perez

Paseo Maritimo 25, Barcelona, es

E-mail: sabinaherreramd@gmail.com

Abstract

Densitometry and imaging techniques are currently used in clinical settings to measure bone quantity and spatial structure. Recently, reference point indentation has opened the possibility of directly assessing the mechanical characteristics of cortical bone in living individuals, adding a new dimension to the assessment of bone strength. Impact microindentation was specifically developed for clinical studies and has been tested in several populations where there are discrepancies between bone density and fracture propensity, such as type 2 diabetes, atypical femoral fracture, stress fractures, glucocorticoids treatment, patients with osteopenia and fragility fractures, and individuals infected with HIV, among others. Microindentation will complement, not replace, existing bone analysis methods, particularly where bone mineral density does not fully explain fracture propensity. The available evidence provides solid proof of concept; future studies will fully define the role of microindentation for the assessment of bone health both in clinics and in research.

Highlights

- Reference Point Indentation techniques for direct measurement of bone tissue mechanical properties have been tested in humans.
- Low microindentation values have been found in situations where bone density does not explain fracture propensity.
- Microindentation may complement available techniques for a full assessment of bone health.

Download English Version:

<https://daneshyari.com/en/article/5585335>

Download Persian Version:

<https://daneshyari.com/article/5585335>

[Daneshyari.com](https://daneshyari.com)