

Accepted Manuscript

Optimal bone structure is dependent on the interplay between mechanics and cellular activities

Jamie C. Frame , Pierre-Yves Rohan , Laurent Corté , Rachele Allena

PII: S0093-6413(17)30660-2
DOI: [10.1016/j.mechrescom.2018.07.005](https://doi.org/10.1016/j.mechrescom.2018.07.005)
Reference: MRC 3287



To appear in: *Mechanics Research Communications*

Received date: 15 December 2017
Revised date: 26 March 2018
Accepted date: 11 July 2018

Please cite this article as: Jamie C. Frame , Pierre-Yves Rohan , Laurent Corté , Rachele Allena , Optimal bone structure is dependent on the interplay between mechanics and cellular activities, *Mechanics Research Communications* (2018), doi: [10.1016/j.mechrescom.2018.07.005](https://doi.org/10.1016/j.mechrescom.2018.07.005)

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Highlights

- Simulation of bone tissue optimization for a proximal femur geometry
- Structural optimization is independent of the initial tissue volume fractions
- Significant dependence on loading magnitude and direction
- Biological and cellular influences on the tissue homeostasis
- Bone disorders produce different steady-states with cellular trends corroborated by clinic data

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