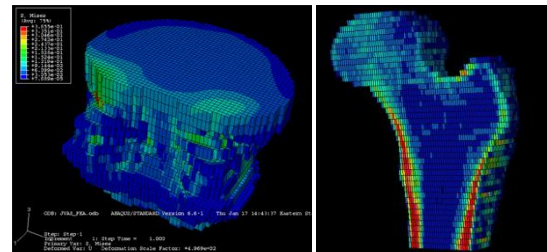


What is Pregnancy and Lactation-Associated Osteoporosis (PLO)?

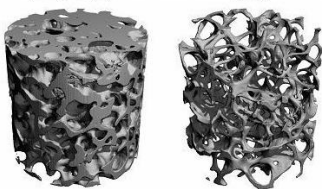
- The term osteoporosis describes a weakness of the bones that leads to an increased risk of fracture.
- Osteoporosis typically affects people over age 50. It is much less common in young adults.
- PLO is a very rare early presentation of osteoporosis in which young women sustain fractures during or soon after pregnancy or breast-feeding (lactation).
- Fractures of the spine, associated with severe back pain, are most commonly described, but PLO can also be associated with hip fractures or other types of fracture.
- Most women with PLO have not been previously diagnosed with osteoporosis, and never had a bone assessment prior to the onset of symptoms.
- More research is needed to increase our understanding of the clinical features and causes of PLO so that better treatments can be developed.

The goal of our research program is to define the bone defect that leads to PLO and to better understand the causes, risk factors, predictors of disease severity, and natural history of PLO so that we can develop targeted treatment approaches to improve skeletal recovery and bone quality.

- To accomplish these goals, we use advanced bone imaging of the spine, hip, wrist and ankle to define defects in bone structure that may cause PLO.



CT scan images of the spine and hip used for finite element modeling



High-resolution CT images of biopsy samples from a normal young woman (left) and a young woman with osteoporosis (right)

- We analyze bone biopsy samples to define the role of bone forming cells in developing PLO and the potential role of bone forming cells in response to treatment.
- We are working with Columbia's Institute for Genomic Medicine to search patients' DNA through whole exome sequencing in order to identify genetic variants that may lead to PLO.

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