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Canadian Longitudinal Study on Aging
Étude longitudinale canadienne sur le vieillissement

CLSA Approved Project

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Project Title
Predicting Fracture Risk from DXA Images

Project Summary
Osteoporosis is amongst the most costly and common diseases. While medications exist to prevent fractures, our ability to identify people at risk for fractures is low. Specifically, the majority of individuals who have an osteoporotic fracture do not have low bone density, the most commonly used risk factor for fracture. This means that improvements in our ability to identify people at risk for fracture could have important public health benefits, because such methods could enable physicians and their patients to appropriately use preventive therapies. Recent advances in machine learning methods have enabled the use of computational algorithms to find information in images that enable prediction of disease risk. Such algorithms can be classified as a form of "artificial intelligence" and are in everyday use at present. Here we propose to use these methods to identify previously unrealized features in bone density images that can help predict individuals who are at risk of fracture.

Keywords
Osteoporosis, Fracture Risk, DXA Images, Machine Learning