

Research Project Details	
Title	Nonoperative management of fifth metacarpal neck fractures: Impact of angulation on patient reported outcomes
Investigator(s)	Dr. Christina Hiscox, University of Calgary
Funding Period	2022-2023
Budget	\$10,603.00
Issue/Rationale	<p>Fifth metacarpal (MC) neck fractures are among the most commonly sustained injuries to the hand, comprising 20% of hand fractures. These injuries are frequently sustained by young males; given that treatment requires immobilization, this results in time away from employment in jobs where a splint cannot be protected. Clinical decision making for treatment of these injuries relies, among other factors, on angulation measured on x-ray.</p> <p>However, there is no gold standard technique for measuring angulation of 5th MC neck fractures, and expert opinion has emphasized the need for improved methods. Furthermore, while range of motion (ROM), pain and return to work status are often measured, no formal patient reported outcomes have been correlated with radiographic angulation in patients with 5th MC neck fractures.</p>
Objective(s)	<p>The objectives of the project and outcome measures are as follows:</p> <ol style="list-style-type: none"> 1. Correlate fracture angulation on X-ray and CT <ol style="list-style-type: none"> a. Assess inter- and intra-observer reliability of CT scans for measuring angulation. 2. Correlate fracture angulation and patient reported outcomes, including effect on work through DASH work module.
Anticipated Results/ Impact	<p>Treatment of 5th MC neck fractures requires immobilization and protection of the hand, mandating time away from most jobs. This study has the potential to give employers and employees the confidence that their injury can be managed without surgery, and that non-operative management will result in normal hand function and ability to return to work.</p> <p>This study will also advance existing knowledge by demonstrating that x-rays are a sufficient modality to measure angulation of 5th MC neck fractures. This means that CT scans (currently not standard of care) will not be required to measure angulation, possibly saving imaging costs. The project will provide support to the paradigm that these injuries can be treated non-operatively; having an expected trajectory to normal hand function for any fracture angulation will be beneficial for injured employees and employers as well as WCB claims management.</p>
Keywords	Hand fractures, metacarpal, angulation, X-Ray, return to work, Boxers' fractures