Research Project Details	
Title	A Randomized Controlled Trial Comparing Low-Intensity, Pulsed Ultrasound to Placebo in the Treatment of Operatively Managed Scaphoid Non-Unions
Investigator(s)	Dr. Neil White, University of Calgary
Funding Period	2014 – 2023
Budget	$48,500.00 (total across funding periods)
Issue/Rationale	The scaphoid is the most commonly fractured carpal bone, often a result of a fall onto an outstretched hand. Scaphoid fractures are notorious for being difficult to diagnose on plain radiograph and for having tenuous blood supply. As a result, they are associated with a significant risk of progressing to non-union. Non-union of the scaphoid leads to a predictable pattern of degenerative changes which result on SNAC wrist arthritis. Union of a scaphoid non-union halts degenerative changes in most patients, therefore justifying the use of such procedures. Low intensity, pulsed ultrasound (LIPUS) has been studied for its potential benefit in fracture healing in animal and human models for the past sixty years. It has also been studied to assess its effects in non-unions. Though studies appear favourable, clinical outcomes across the studies are not amenable to data consolidation and were neither randomized nor blinded.
Objective(s)	To conduct a prospective, double-blind, randomized controlled trial to investigate whether low intensity, pulsed ultrasound can be used to reduce healing time in operatively treated scaphoid non-unions.
Anticipated Results/ Impact	It is important to find ways to increase scaphoid union rate and to decrease immobilization time after operative management of non-union. This study hopes to identify an adjuvant treatment (i.e., low intensity, pulsed ultrasound) that can reduce healing time in the post-surgical patient.
Keywords	Scaphoid, non-union, fracture, low intensity pulsed ultrasound, LIPUS, treatment, recovery