Osteoarthritis (OA) at the thumb’s carpometacarpal (CMC) joint can lead to severe chronic pain, joint damage, and up to 50% loss of hand function.¹⁻³ 

**Hypothesis:** Individuals with end-stage OA will experience loss of sensation (i.e., hypoalgesia) in comparison to individuals with early-stage OA.⁶

Gaining insight into the somatosensory mechanism alterations associated with different degrees of OA severity can provide valuable information to deliver appropriate care to individuals with OA.⁶

End-stage OA is associated with significantly higher levels of pain and disability compared to early-stage OA. This can severely impact the quality of life of affected individuals.

**Motivation:**

> Although significant differences were detected in our linear mixed model, they were lost after post-hoc correction because of the small sample size and numerous testing sites. However, we were still able to observe trends.

> Our findings suggest that there may be significant differences in pain perception among different stimuli. These findings offer valuable insights into the impact of OA on specific sensory fibers and can inform/improve current treatment strategies.

**Overall Importance:**

This is the first study to assess somatosensory differences using mechanical and thermal stimuli in a population prior to any surgical treatment.

**Limitations:**

> Our study excluded participants with upper extremity musculoskeletal disorders (i.e., carpal tunnel, rheumatoid arthritis, etc.). However, some participants reported having knee OA or pain in other body regions (see ‘number of pain sites’), which may have impacted our findings.

> Most participants reported having bilateral CMC OA, making it impossible to compare “healthy” to osteoarthritic body sites within subjects.

**Future work:** Increase the number of participants and include male participants. Examine differences if participants were grouped based on symptomatic OA versus asymptomatic OA.