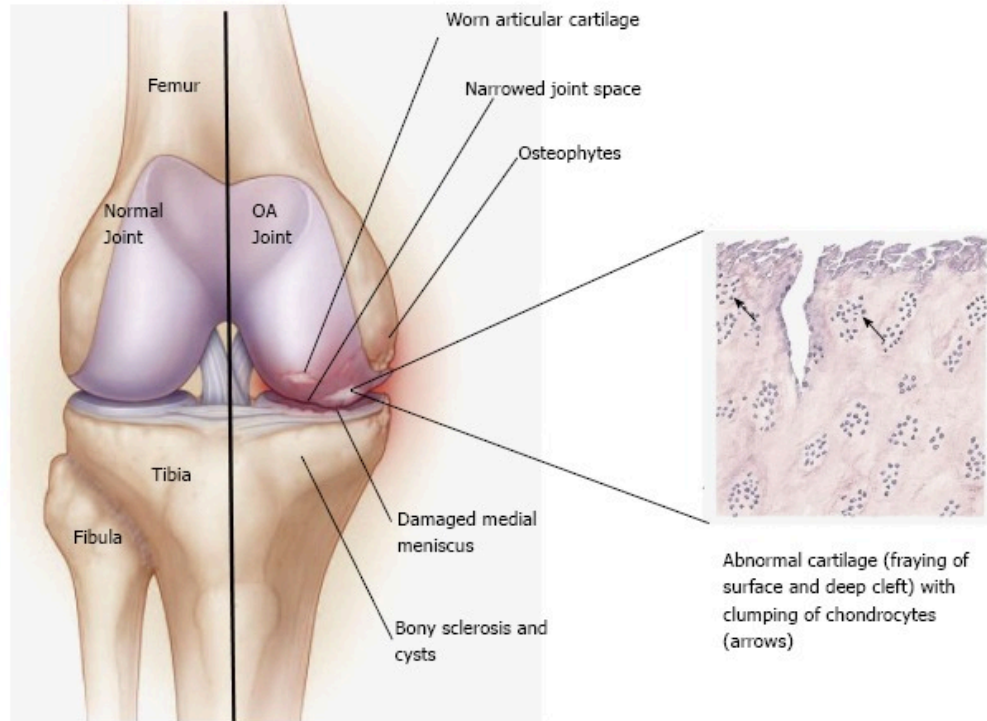


**NSAIDs May Reduce Efficacy of
Mesenchymal Stem Cell Therapy in a
Rodent Model of Post-Traumatic
Osteoarthritis**

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BACKGROUND



- Post-Traumatic Osteoarthritis (PTOA) is debilitating and costly
- Intra-articular injection of human mesenchymal stem cells (hMSCs) in preclinical models have shown therapeutic benefits (1,2).
- Clinicians that utilize stem cell products currently recommend avoidance of NSAIDs before and after therapy

OBJECTIVES

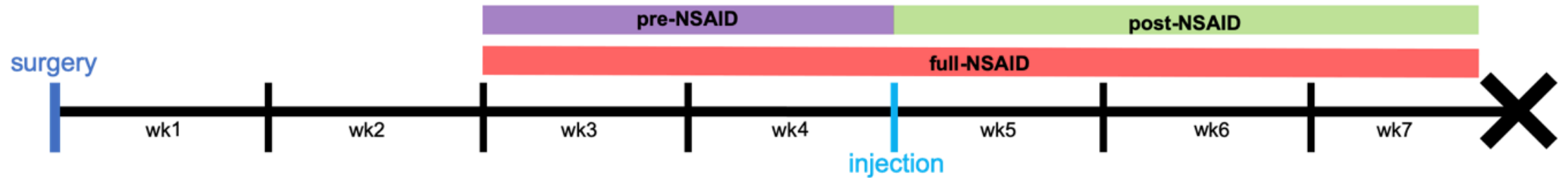
- It is unknown if patients are compliant with recommendation of avoiding pain relieving NSAID therapy before stem cell treatment.
- While effect of NSAIDs on hMSCs are well studied in vitro (3), it remains largely unknown how NSAIDs may alter the efficacy of cellular treatment in vivo.
- Our goal was to assess the effects of naproxen on stem cell therapy by observing tissue morphology, joint function, and pain.

METHODOLOGY

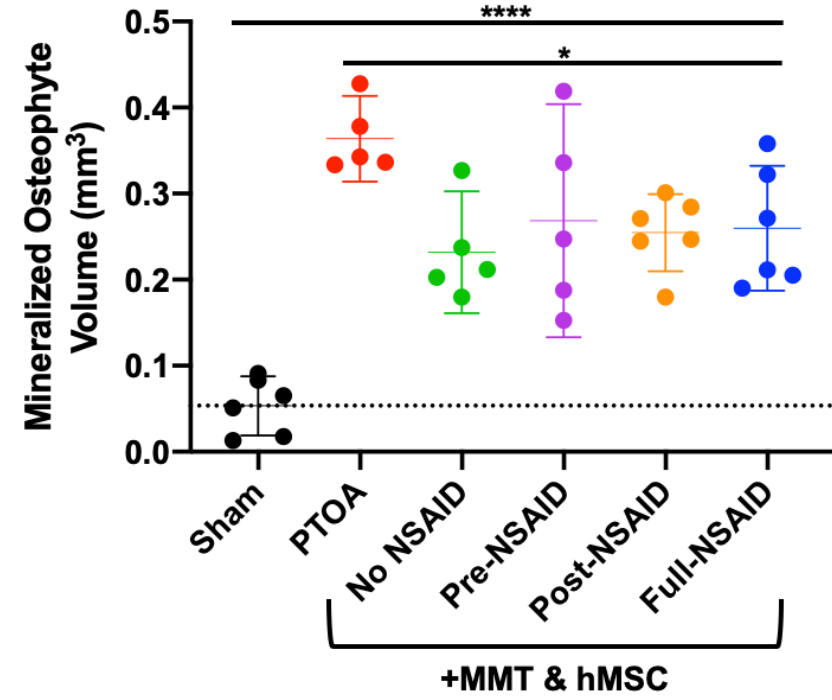
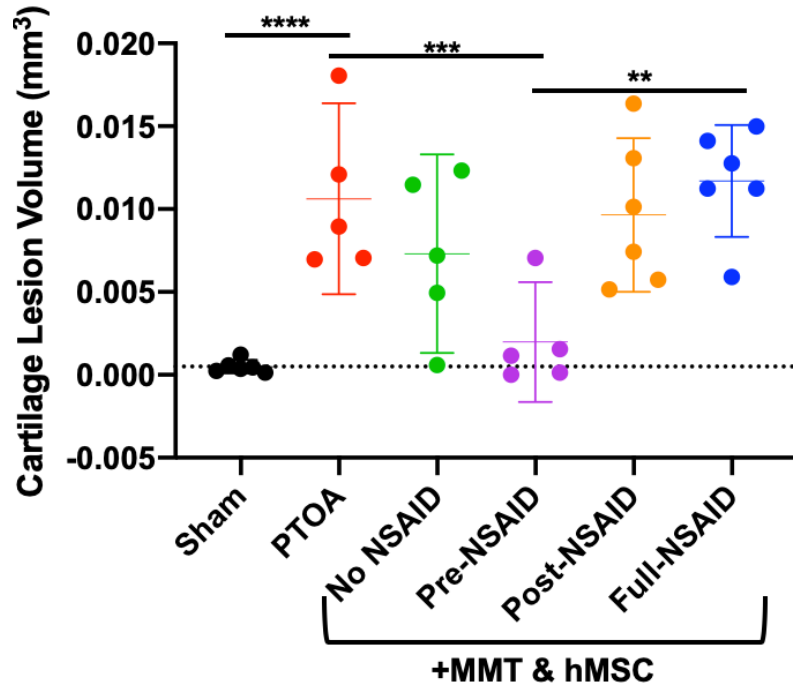
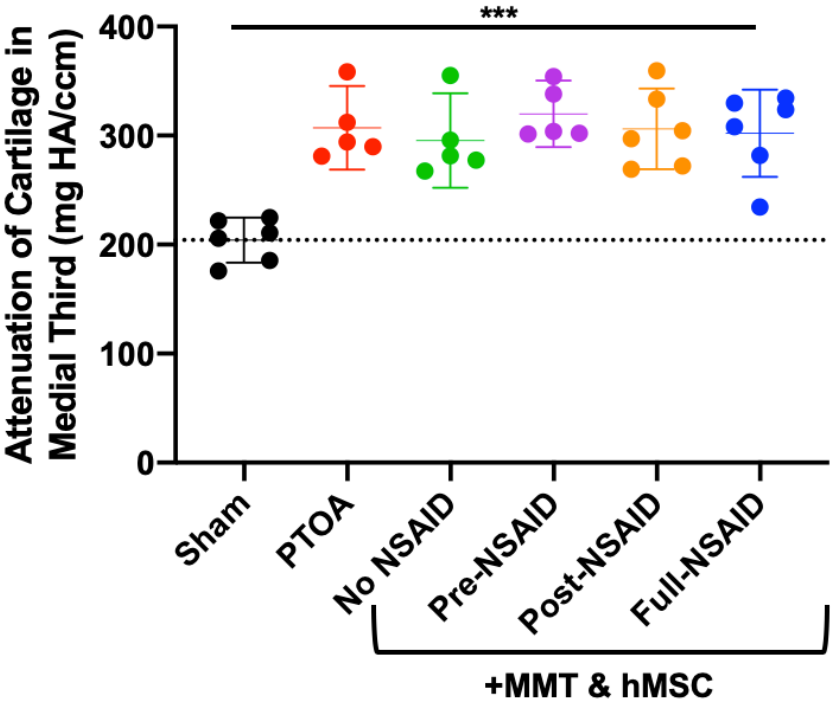
N = 6/group

Sham	Pre-NSAID: MMT + NSAID before hMSC + hMSC
PTOA: MMT + Saline	Post-NSAID: MMT + NSAID after hMSC + hMSC
No NSAID: MMT + hMSC	Full- NSAID: MMT + NSAID before & after hMSC + hMSC

- Male Lewis rats (N=36; 300-350 g)
- PTOA was initiated via medial meniscal transection
- All treatments began at 4 weeks after mild to moderate PTOA is established and ended at 7 weeks when moderate PTOA is expected

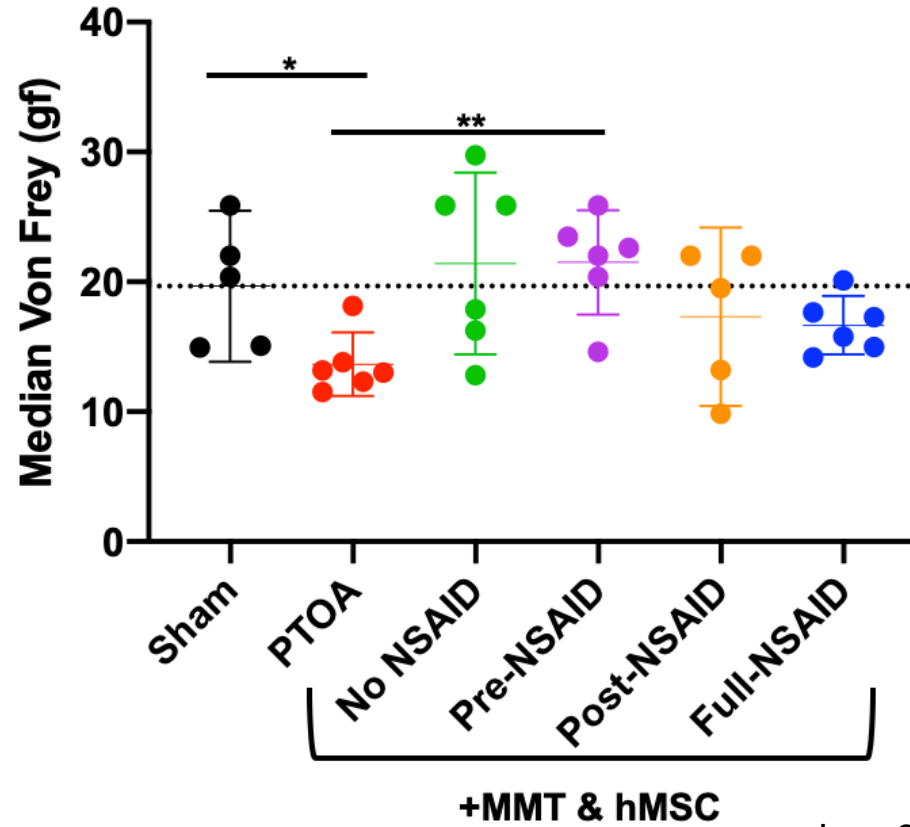


μCT RESULTS



* p < 0.05, ** p < 0.01, *** p < 0.001, **** p < 0.0001

PAIN RESULTS



* p<0.05, ** p<0.01, *** p<0.001, **** p<0.0001

CONCLUSION

- NSAID therapy leading up to hMSC injection may have no negative effect on the efficacy of injection, while taking NSAIDs after injections may reduce efficacy of injections
- Patients may be able to take their usual anti-inflammatory up until receiving hMSC injections to minimize osteoarthritic pain experienced before therapy

REFERENCES

- 1) Mc Kinney, JM et al. Euro cells mat 2019
- (2) Saulnier N et al Osteoarth Cartil 2015
- (3) Yoon DS et al. Stem Cell Dev 2010
- (4) Jacobs BY et al. Osteoarth Cart 2016

THANK YOU!

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