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Short Term Results After Missouri Osteochondral Preservation System for Symptomatic Chondral Lesions

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Disclosures

I (and/or my coauthors) have the following disclosures:

- **Deryk G Jones, MD, FAAOS**

- Active Implants: Paid presenter or speaker

- Arthrex, Inc: Paid presenter or speaker

- CONMED Linvatec: Paid presenter or speaker

- DePuy, A Johnson & Johnson Company: Paid presenter or speaker

- Genzyme: Paid consultant; Paid presenter or speaker; Research support

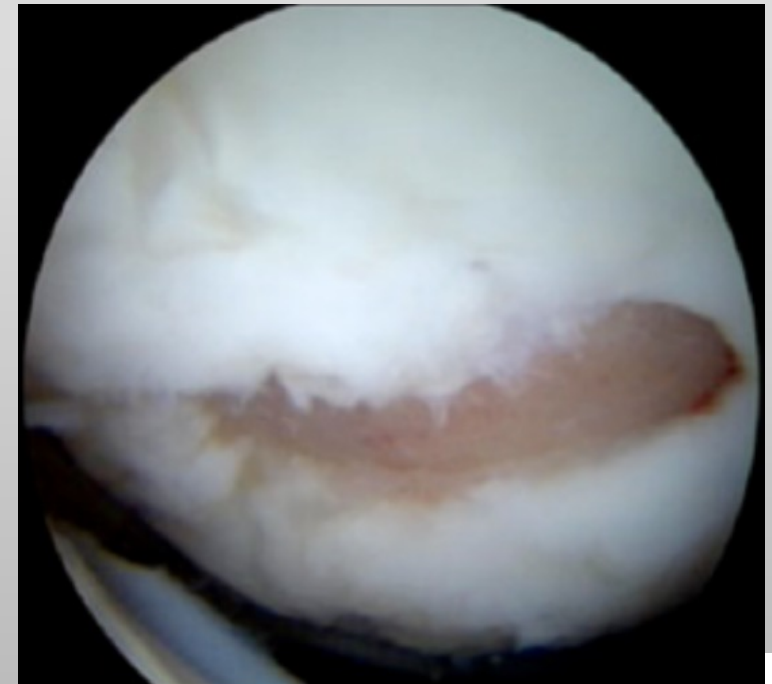
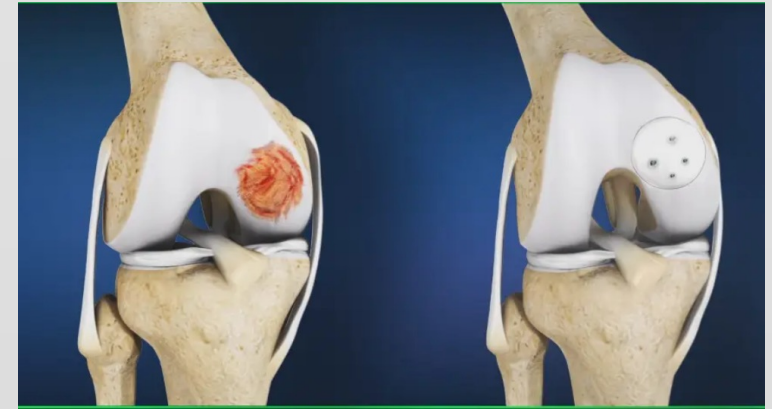
- Linvatec: Paid presenter or speaker

- Mitek: Paid consultant; Paid presenter or speaker

- Musculoskeletal Transplant Foundation: Board or committee member; Paid consultant; Paid presenter or speaker

Study Purpose

- Healthy articular cartilage is essential for joint function and health
- An osteochondral defect refers to a focal area of damage that involves both the cartilage and a layer of underlying bone
- Assess short term functional outcome measures following treatment of symptomatic chondral lesions treated with osteochondral allografts preserved via MOPS technique



Missouri Osteochondral Preservation System (MOPS)

Historic technique: preserve OCAs at 4°C

- Has prolonged detrimental effects making it less viable when it's not implanted early post-harvest
- 2 week mandatory disease screening makes window for implantation tight
- Marked decrease in chondrocyte viability after 14 days with 70% remaining viable after 28 days

MOPS technique: preserve OCAs at room temperature

- Store in **proprietary solution**
- OCA viability and quality at significantly higher levels than the standard tissue bank protocols
- over 70% viable chondrocyte density at least **56 days after procurement**

Hypothesis: Treatment of large osteochondral lesions preserved using the MOPS technique will have positive functional outcomes in the early follow up period.

Materials & Methods

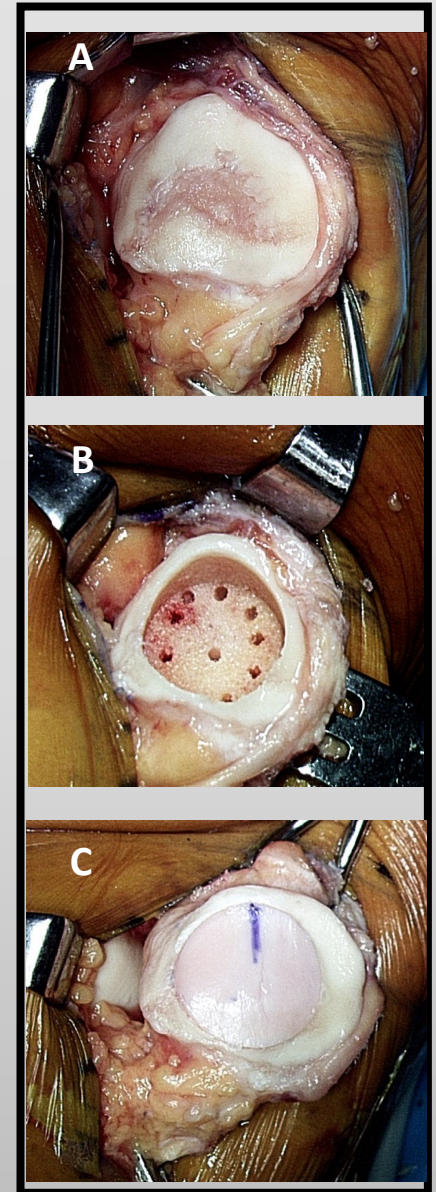
- IRB approved prospective cohort study
- Single surgeon series spanning 5 years
- Cartilage defects greater than than 2 cm²
- Assessed at 6wks, 3mo, 6mo and 12m, 24 mo post op

Outcome measures

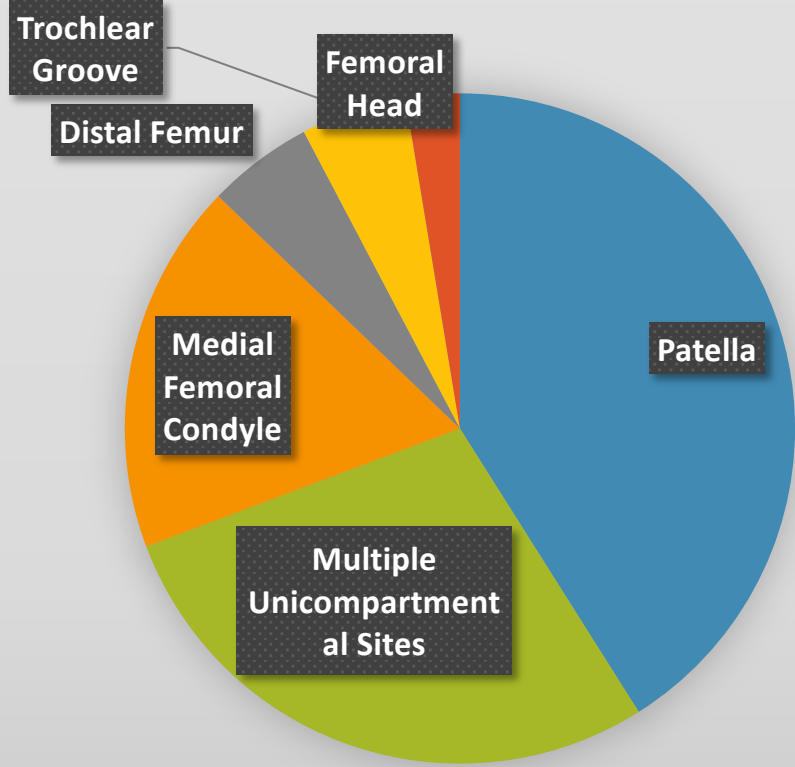
- SF-12
- IKDC
- KOOS
- Lysholm
- VAS pain
- Pain frequency

Exclusion Criteria

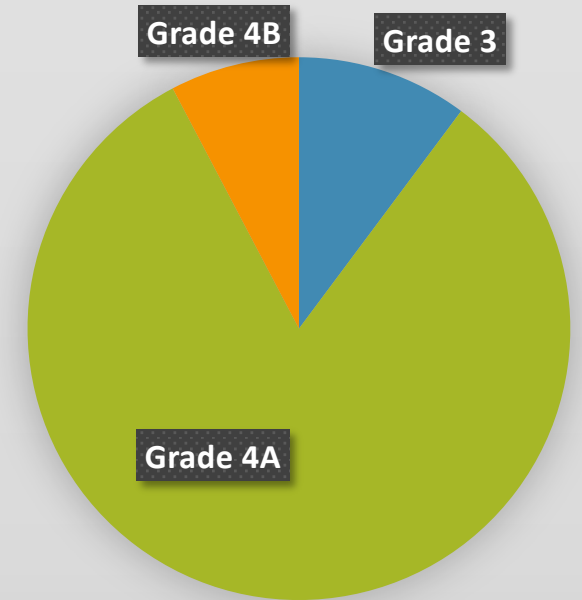
- Multiple osteochondral defects in same compartment
- Cartilage defects less than than 2 cm²
- Revisions of prior surgery for osteochondral defect lesions
- ICRS Grades 0-2
- Kissing lesions



Osteochondral Lesion



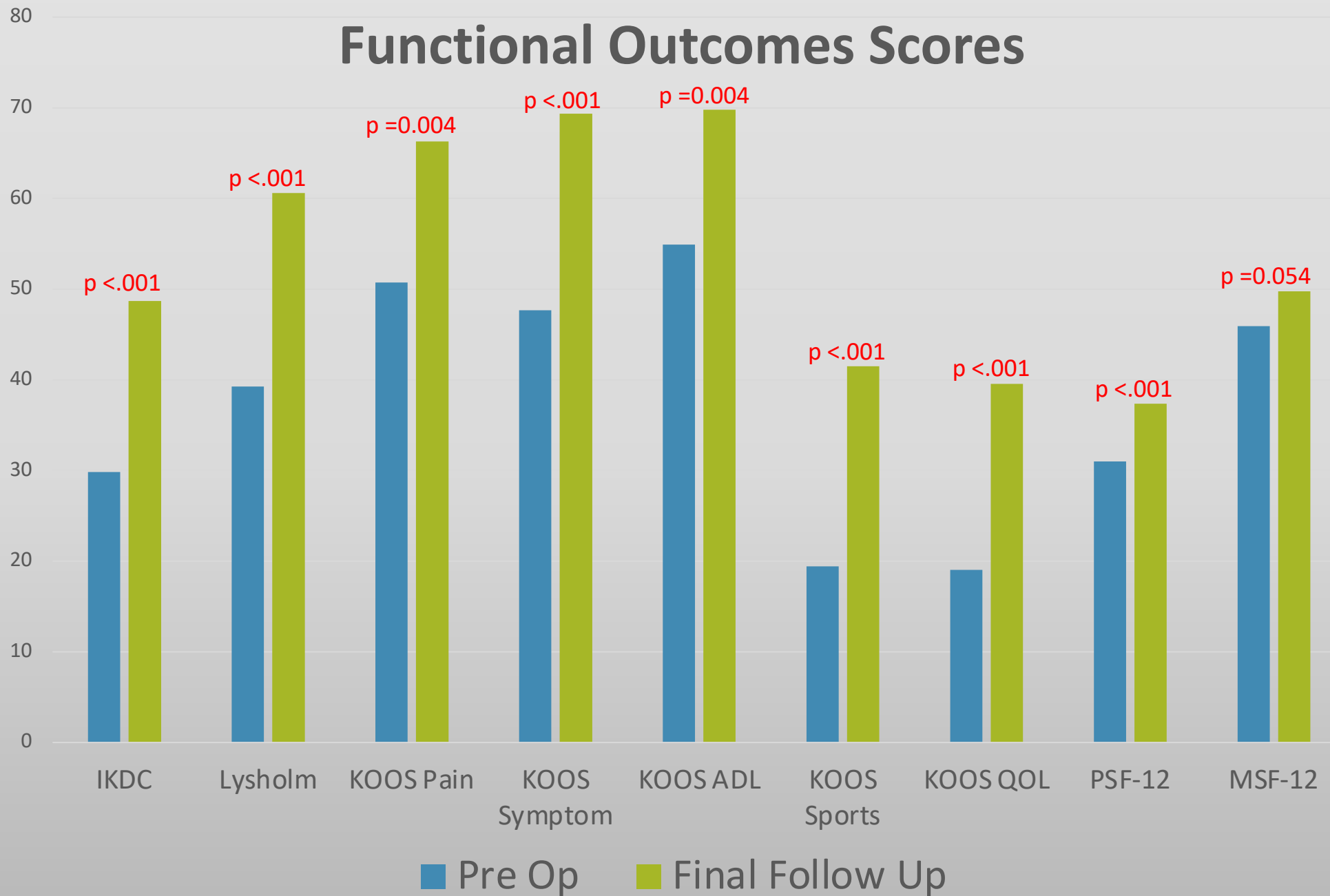
ICRS Lesion



Demographics (n = 40)

Mean age (yrs)	35.3 (13-57)
Mean BMI	26.6 (20.2-36.3)
Affected Joint	Knee 97%; Hip 3%
Gender	F 62%; M 38%

Functional Outcomes Scores



Conclusions

- MOPS has been reported to effectively preserve OCA twice as long as fresh OCA in current tissue bank protocols
- Our study shows clinical effectiveness → symptomatic knee articular cartilage defects treated with MOPS show significant improvement in IKDC scores, KOOS scores, Lysholm scores and PSF-12 scores
- Promising early results utilizing the MOPS technique of OCA preservation; long term data needed

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