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# Suture-only vs Bony Fixation in Meniscal Allograft Transplantation

Dr Iswadi Damasena

Dr James Onggo

Rahul Kakria

# Faculty Disclosure Information

- Nothing to disclose
- No conflicts of interest

# The Problem

**Meniscal Allograft Transplantation (MAT)** replaces damaged meniscus tissue with grafts, aiming to restore knee stability and function.

There are **2 fixation methods** currently employed

1 - Soft tissue (suture-only) fixation

2 - Bony fixation

It has **not** currently been categorically established which method of fixation provides optimal **clinical and functional outcomes**.

# Objective of Study

- **Meniscal resection** (meniscectomy) has been increasingly associated with dire consequences such as **osteoarthritis**, and so preserving the meniscus is of priority.
- Our objective is to analyse existing literature to determine which **method** of **graft fixation in a MAT** provides the **most optimal outcomes** in patients.
- Determining which graft fixation method provides the most longevity, while looking at a **myriad of outcomes** such as infection risk and graft failure resulting in meniscectomy, we aim to have a more **refined understanding of the two fixation methods.**

# Method

This meta analysis was performed using the **Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA)** criteria.

Identified articles and their corresponding references were reviewed and considered for inclusion according to the selection criteria.

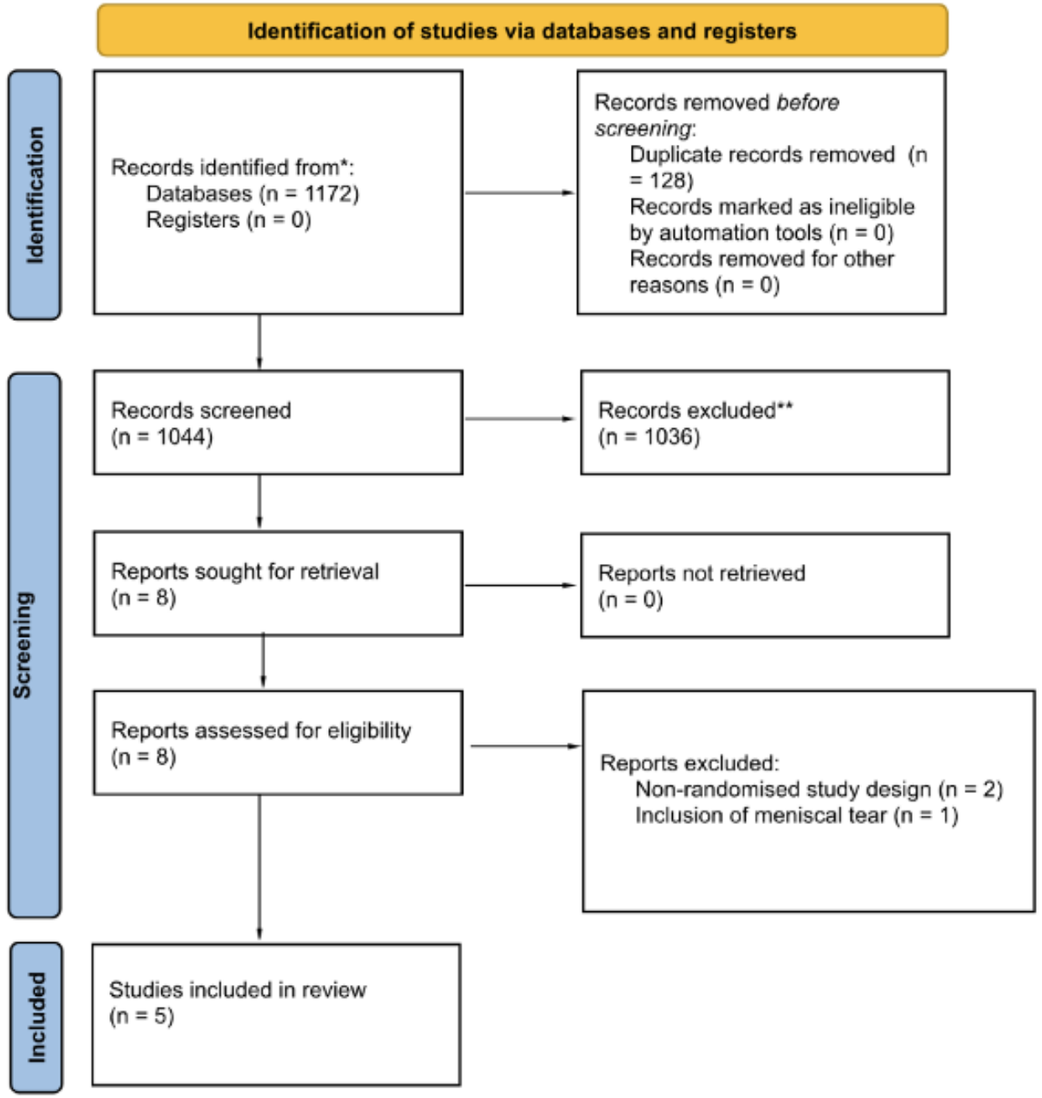



Figure 1. PRISMA selection process Flowchart

# Complications and Clinical Outcomes Compared

**Complications:**

- Infection rates
- Graft failure resulting in meniscectomy
- Graft tears
- Minor graft extrusion < 3mm
- Major graft extrusion > 3mm

**Clinical Outcomes:**

- Lysholm score
- Tegner Score
- International Knee Documentation Committee (IKDC) score
- Knee Injury and Osteoarthritis Score (KOOS) symptom score

# Results

**Figure 2.** Meta-analysis of infection rates

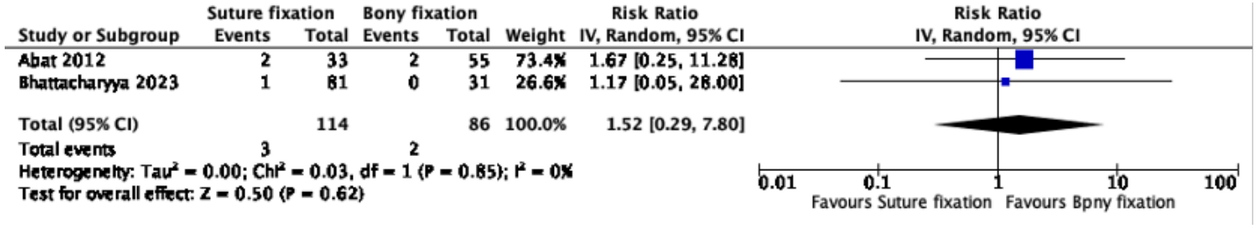



**Figure 3.** Meta-analysis of graft failure resulting in meniscectomy/graft removal

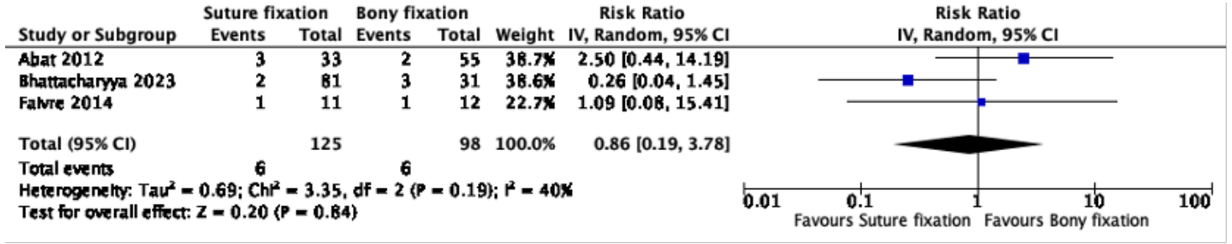
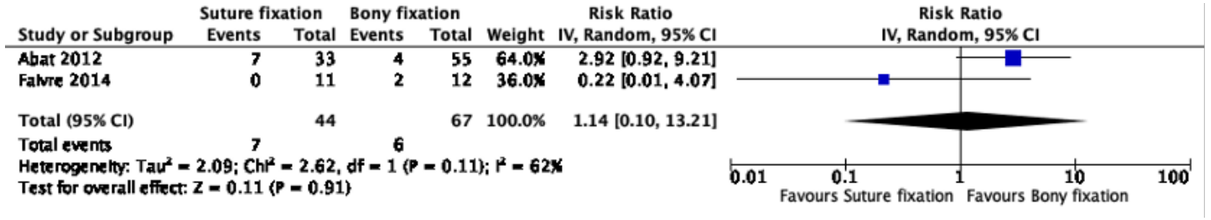



**Figure 4.** Meta-analysis of graft tears

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# Results

**Figure 5.** Meta-analysis of minor graft extrusion (≤3mm)

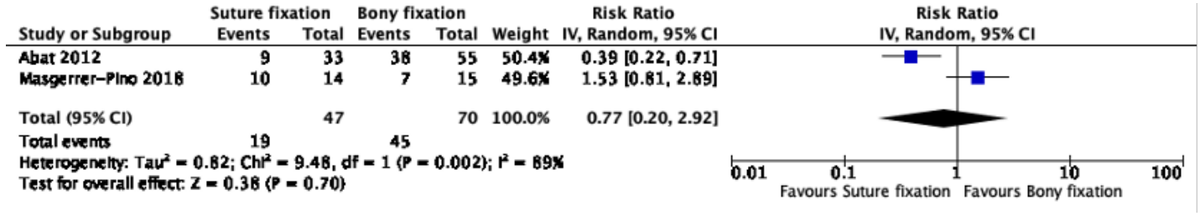
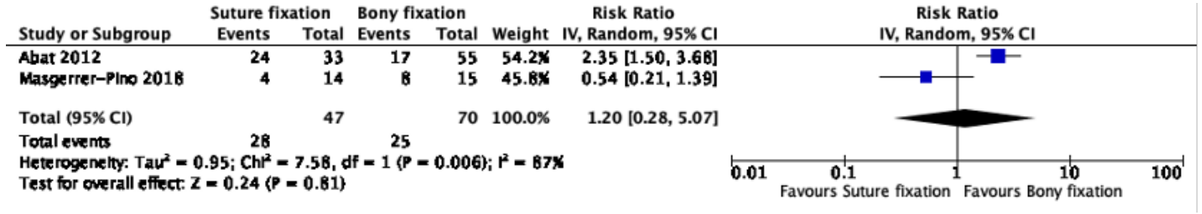



**Figure 6.** Meta-analysis of major graft extrusion (>3mm)



# Discussion and Conclusion

- **No statistically significant differences** in functional and clinical outcomes were noted between **bony-fixation and suture-fixation** following meniscus allograft transplantation.

- **Bony-fixation is generally more widely favoured** due to the **shorter recovery and healing time** as compared to suture-fixation. Our results have shown no **statistically significant difference**, and hence have **disproved this perception.**

# Strengths

- **Strict inclusion of case-control studies** to analyse the most optimal method of fixation
- Analysis of **important outcome variables**, such as graft extrusion, graft failure and graft tears.
- Able to establish **no statistically significant** data supporting the widely accepted notion that bony-fixation provides **better outcomes** and suture-only fixation is **less dependable**.

# Limitations

- The short to medium term follow-up period is a major limitation to this study.
- **Longer follow-up studies are required** to assess longevity of meniscal graft, and the **inherent risk of osteoarthritis progression**.
- This analysis also did not account for differences in clinical outcomes arising from variances in surgical techniques

# References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