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# Fixation of Pure Chondral Injuries of The Knee: Systematic Review

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- Authors have nothing to disclose regarding this article



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## Introduction:

There is controversy whether pure cartilage lesions without osteochondral base can heal after fixation. In recent years, repair of pure injuries has been attempted. The objective of this review is to evaluate the outcomes of these interventions.

The evidence regarding fixation of pure chondral injuries is limited. Whether this kind of injuries can heal is controversial. Recent case reports state that healing can occur, but evidence is scarce<sup>1</sup>.



# Methods:

- A systematic search over the last 20 years was carried out in PubMed, Medline, Cochrane and Epistemonikos, according to PRISMA guidelines (Flow diagram in figure 1)<sup>2</sup>.
- The search terms were: “Fixation”, “repair”, “Cartilage”, “Chondral”, “Fragment”, “Lesion”, “Pediatrics”, “Fracture” and “Knee”.
- Data was reviewed by 2 researchers between June and July 2024. 2071 articles were found. Unrelated articles, cases of osteochondritis dissecans, osteochondral fragments, and reviews were excluded.
- 19 articles were reviewed in depth.
- Finally, 15 studies reporting fixation results in pure chondral lesions were included<sup>1, 3-16</sup>.

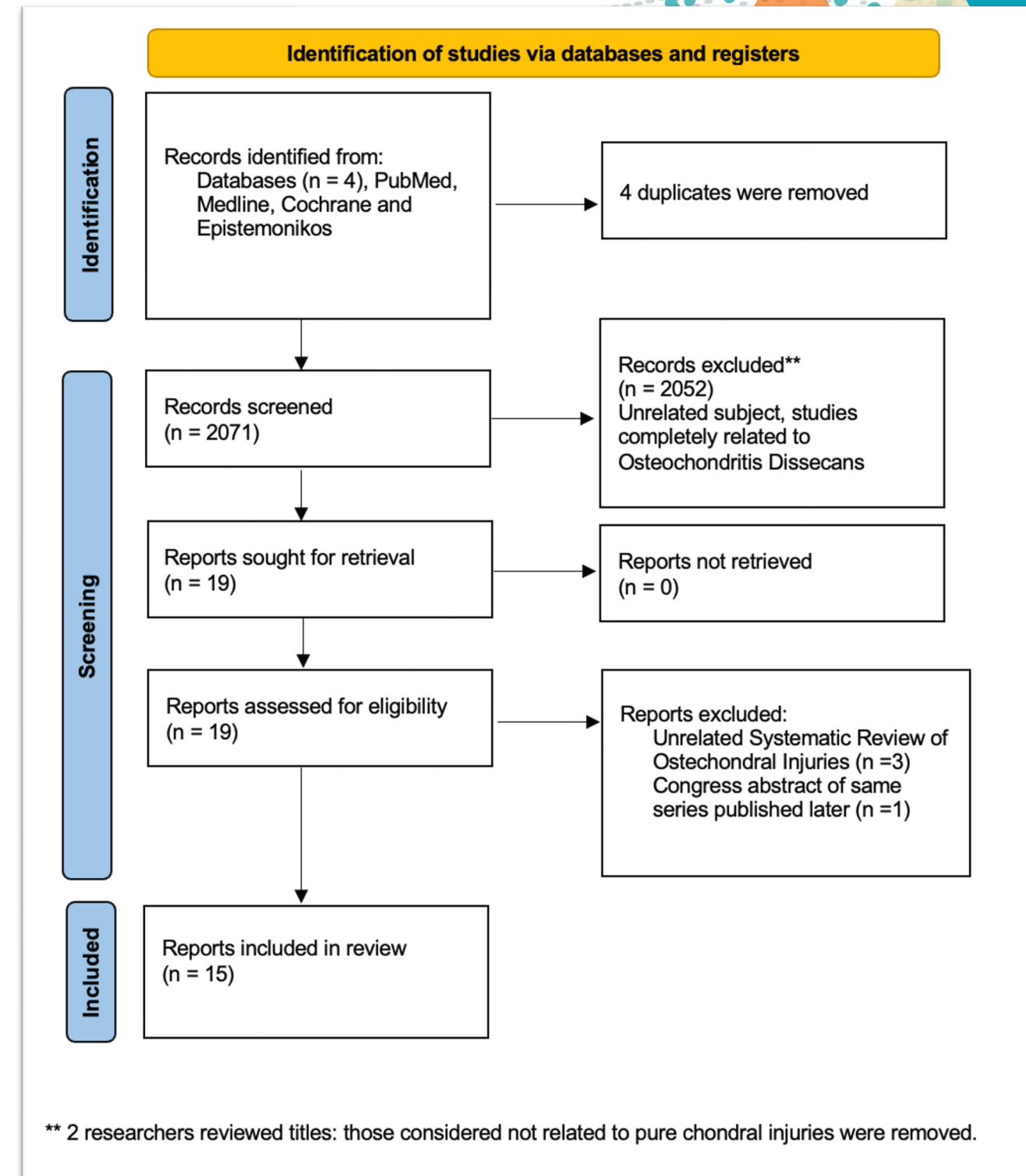
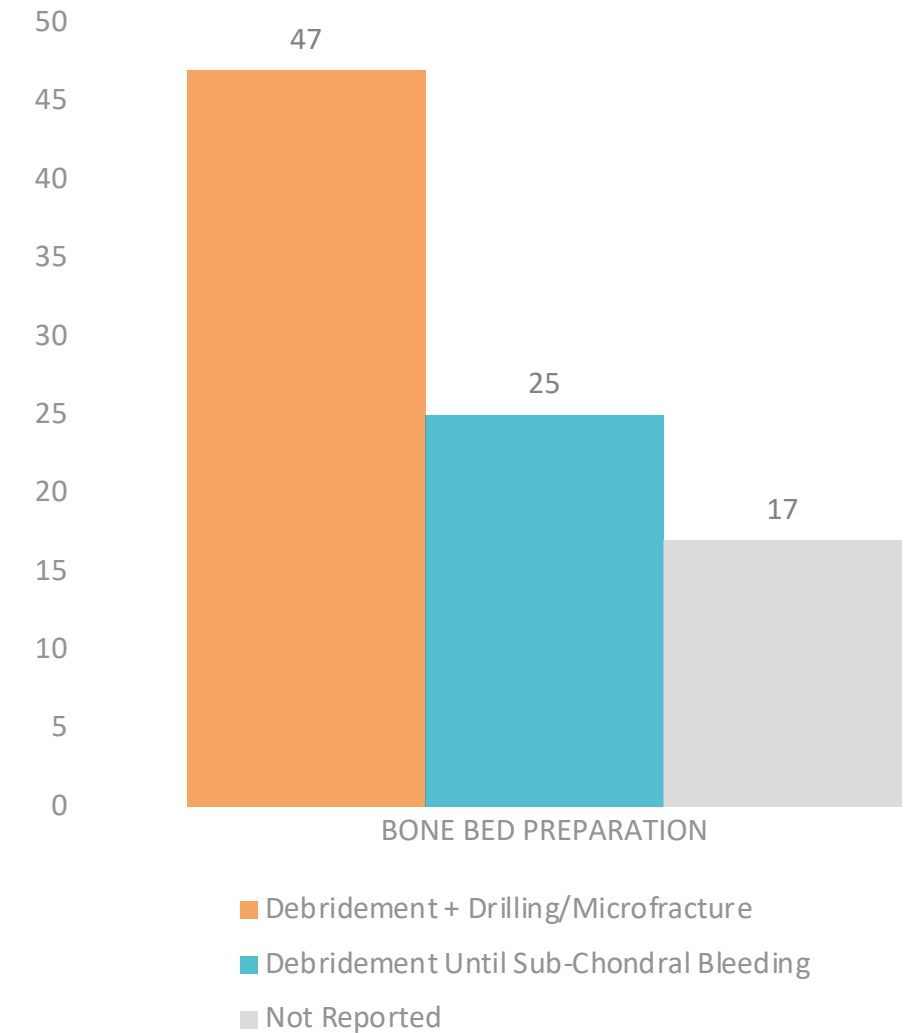


Figure 1: PRISMA 2020 flow diagram



# Results:

- 1 retrospective study was included, and the other were case-series or case reports including a total of 89 patients.
- 74.4% were male.
- Mean follow-up was 41.5 months (5 months - 9 years). Mean age was 16.9 years (10-36).
- 16.2% were over 18 years old.
- The pooled success rate is 87.2% (81.2-94.7 95% CI). Healing was assessed by follow-up magnetic resonance imaging (MRI) almost all patients reported (86 out of 89). Those without MRI were considered successful because at follow up were asymptomatic.
- Bone bed preparation was carried out with debridement until bleeding sub-chondral bone in almost all reports and was combined with drilling or microfracture in 52.8% of cases.



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# Results:

- The fixation methods used include: bioabsorbable implants, trans osseous sutures, osteochondral cylinders, among others. Complications are underreported; however, implant removal was the most prevalent.

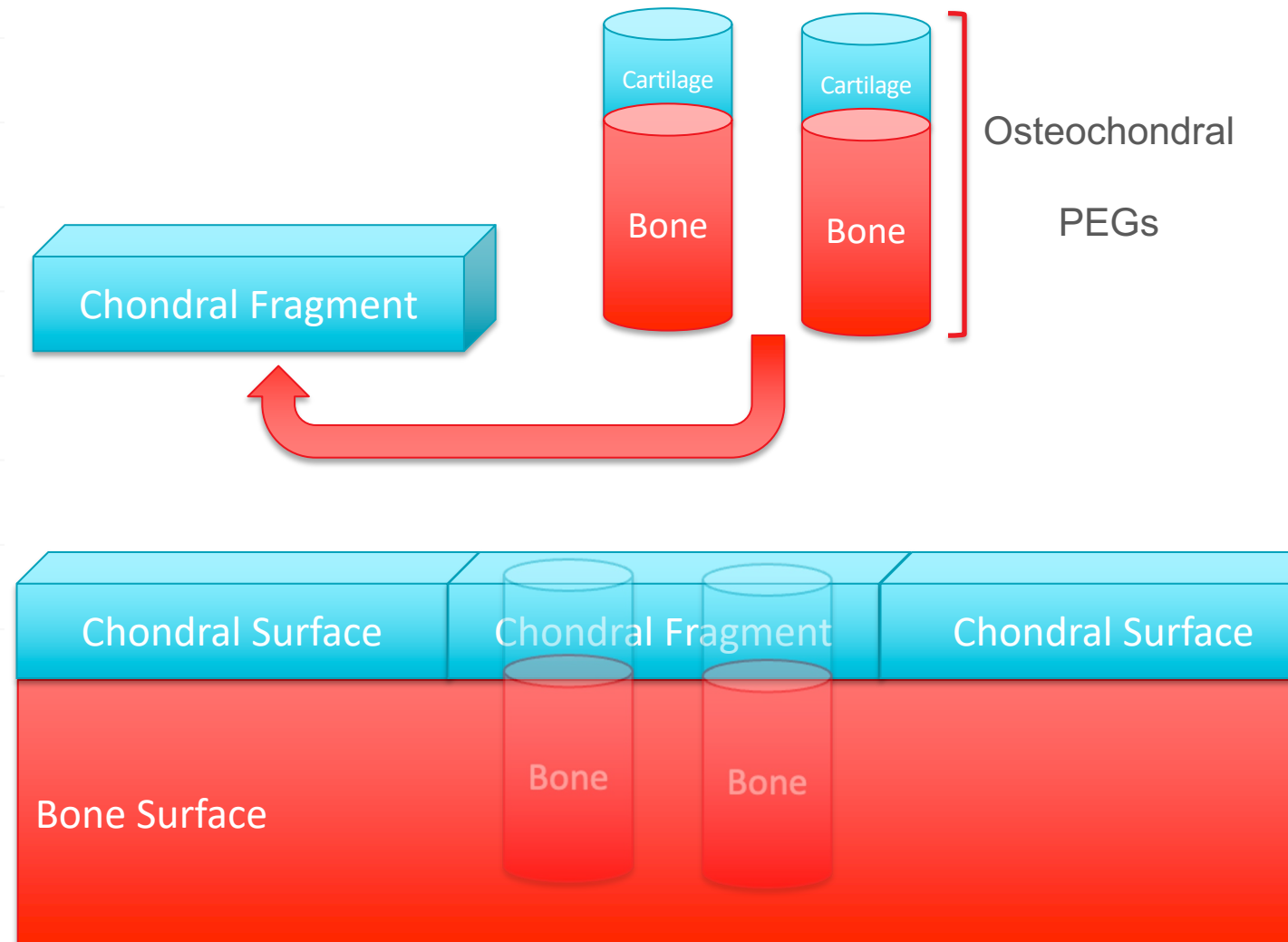
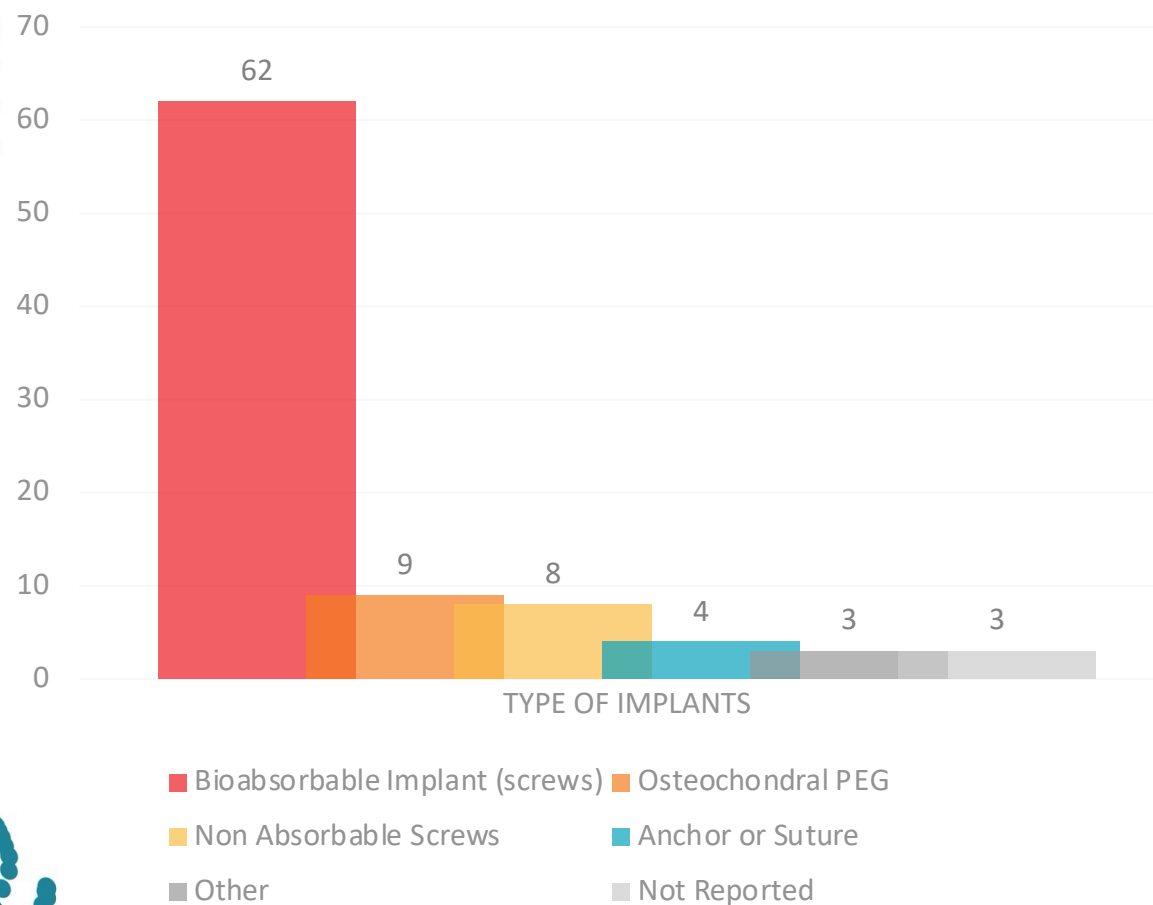


Figure 2: Osteochondral PEGs Diagram

# Conclusions:

Fixation of pure chondral lesions shows variable results and heterogeneous fixation methods. The most common fixation method is bioabsorbable screws.

The level of evidence in the literature is low and is mainly limited to case reports with significant bias.

However, it appears that fixation of these lesions could have considerable success rates in the studied population. More than 80% of patients were under 18 years old, theoretically in this group of patients, healing potential may be higher.

Nevertheless, to offer a recommendation, better quality studies are required.



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