



Use the soft touch for buckle fractures?

CLINICAL QUESTION

Is rigid immobilization needed in buckle fractures?

BOTTOM LINE

Children with buckle fractures treated with a soft bandage, a rigid splint, or a cast all heal with minimal complications and similar functional outcomes and satisfaction at ~4-6 weeks. Pain is similar at all time points though casting results in slight reduction on the first day.

EVIDENCE

- Results statistically different unless stated.
- Children with buckle fractures, comparing cast, rigid splint, or soft bandage for 3-4 weeks. 2 systematic reviews of Randomized Controlled Trials (RCTs).^{1,2} Mean age ~10, follow-up 28-42 days.
- Soft bandage with no planned follow-up versus rigid splint with planned follow-up: 1 RCT (965 children).^{2,3}
 - Duration of use: Median 7 days (bandage) versus 18 days (splint).
 - Pain (0-10, higher=worse, baseline ~5):
 - Day 1: 4.3 (bandage) versus 3.9 (splint). Difference not clinically important. Other time points: No difference.
 - Use of acetaminophen/ibuprofen day 1: 83% (bandage) versus 78% (splint), number needed to harm (NNH)=20. Other time points: no difference.

- Functional recovery, days of school missed: No difference.
- Change in treatment/Reapplication: 11% (bandage) versus 5% (splint).
- Satisfaction (1-7, lower=better):
 - Day 1: 2 (bandage) versus 1(splint).
 - Day 42: 1 (both).
- Adverse events: Very low, no analysis done.
- Rigid splint versus cast:
 - Pain (5 RCTs, 437 children):¹
 - Day of application (0-10 higher=worse): 3 (splint) versus 0 (cast).
 - Days 7-21: No difference.^{1,2}
 - Change in treatment/Reapplication (4 RCTs, 444 children): ~3% both groups.¹
 - Physical function at 4 weeks (1 RCT, 65 children): No difference.¹
 - Satisfaction (different measures used): One study no difference, one favoring splint.^{1,2}
 - Adverse events: Few encountered, no difference.^{1,2}
- Soft bandage versus cast (additional RCT, 150 children):⁴
 - Complications, satisfaction: No difference.
- Limitations: All but one study small, blinding of outcome assessment inconsistent.

CONTEXT

- Greenstick fractures (cortex is fractured on one side and buckled on the other) generally require rigid immobilization.⁵
- NICE (UK) guidelines recommend soft bandage for buckle fractures, but no Canadian guidelines have been published.^{6,7}
- Home management with family physician follow-up as needed results in similar outcomes to scheduled family physician follow-up.⁸

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