

# Safe To Wait? Comparing Emergent And Urgent Carpal Tunnel Release Following Distal Radius Fractures



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For select distal radius fracture patients, urgent carpal tunnel release may be just as safe as emergent decompression.

## Why This Matters



- **Distal radius fractures** (DRF) are common, and carpal tunnel syndrome (CTS) is a complication requiring decompression or **carpal tunnel release** (CTR).
- Acute CTS is often treated urgently, but there is no consensus on **improved outcomes** following **urgent (<24hr)** or **emergent ( $\geq 7$  days)** treatment.

## Methods



- Retrospective TriNetX study following **STROBE** guidelines
- Adults with acute DRF who underwent **fixation with CTR**
- Cohorts:  **$\leq 24$  hours** versus **within 7 days** after diagnosis
- **1:1 propensity score matching** by age, sex, race, BMI, and T2DM; outcomes assessed at **90** and **180** days

## Patient Characteristics

- Mean age: **53.7** vs **53.7** years
- Female: **68%**
- White: **82.3%**
- TIIDM: **11%**
- **1:1 propensity score-matching** produced two well-balanced cohorts by **Elixhauser scoring** with **5,831** patients per cohort

**$\leq 24$  hours** | **7 days**  
9,298 | 5,832

## Results

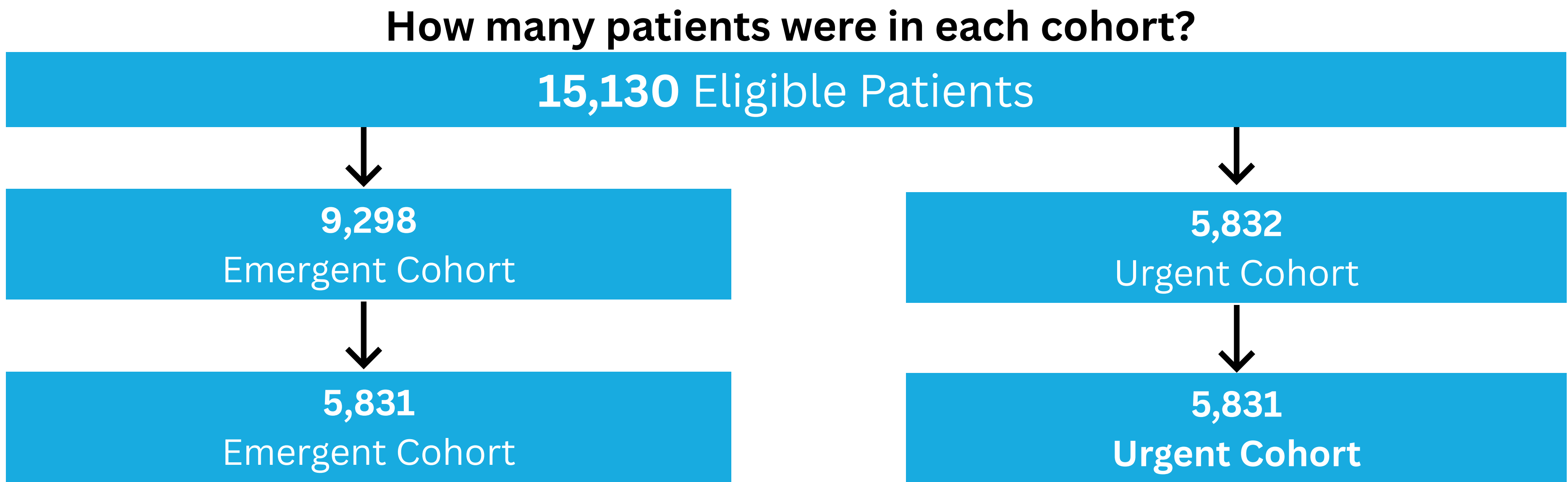


Figure 1. Cohort identification and 1:1 PSM. SMD <0.1

No significant outcome differences at 180 days

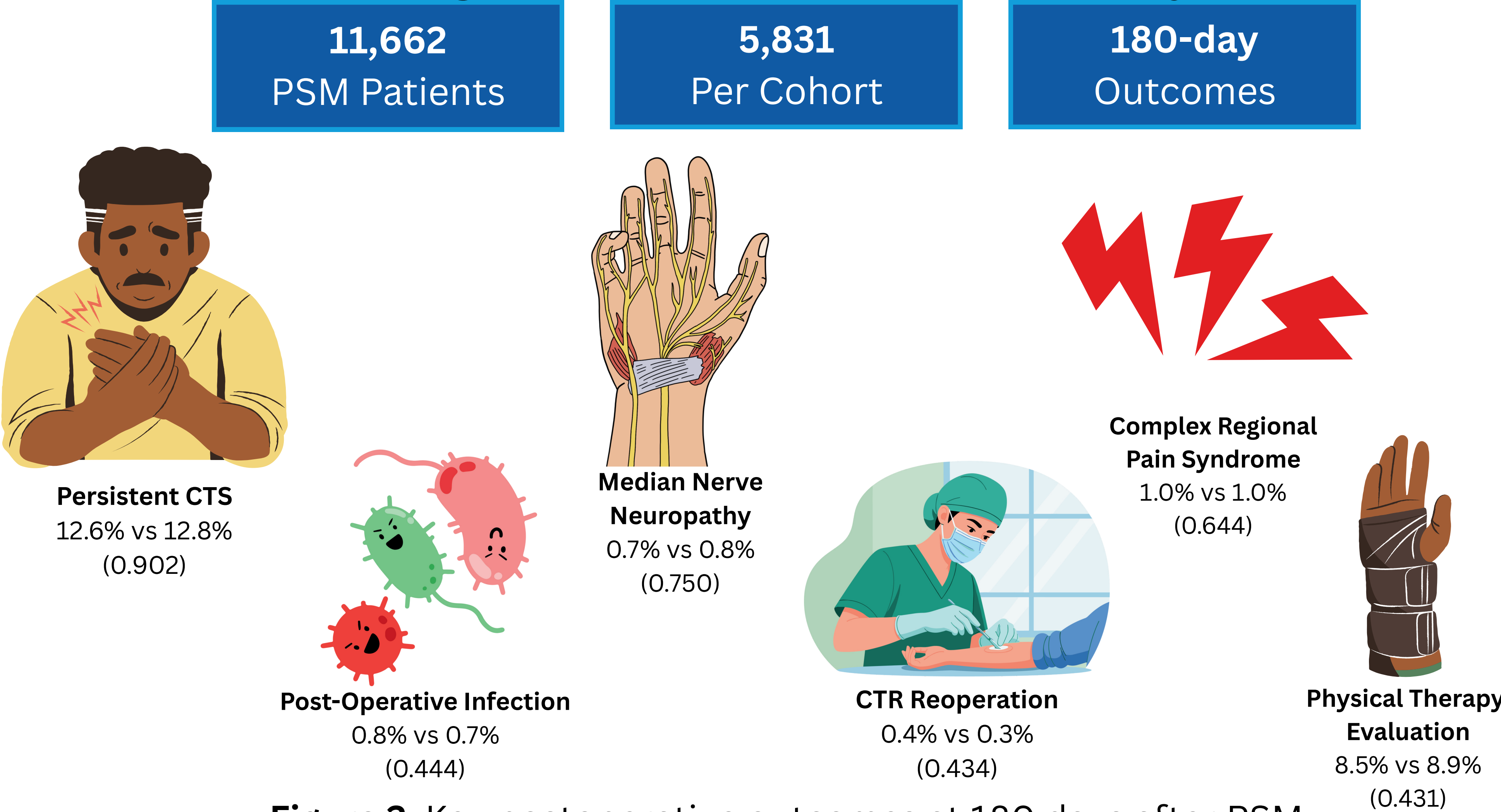


Figure 2. Key postoperative outcomes at 180 days after PSM

## 3 Key Takeways

### 1. Does every DRF-associated CTS need emergent CTR?

Not necessarily. In this matched cohort, CTR within 7 days had **similar outcomes** to CTR within 24 hours.

### 2. Were complications worse with delay?

**No.** Median neuropathy, CRPS, infection, repeat CTR, and PT utilization were all similar between groups.

### 3. What does this mean clinically?

In selected patients, **urgent decompression appears reasonable**, while true compartment syndrome still requires immediate treatment.

## Clinical Implications

- Similar outcomes support a more **individualized timing strategy** rather than automatic overnight decompression for every patient.
- Delaying to a subacute setting may **reduce strain** on emergency OR resources and on-call teams.
- This may allow **better preoperative optimization** without increasing infection or neurologic sequelae in selected patients.
- **Emergent release still matters** when there are unmistakable signs of acute compartment syndrome.

## Supplemental Findings

- Patients treated **within 2 weeks** were also compared with those treated within 24 hours.
- After 1:1 matching, **6,525 patients** were included in each group.
- **Outcomes remained similar**, with no significant difference in persistent CTS, PT use, CRPS, or median neuropathy.