

# Four-Corner Fusion

This protocol is intended to provide the clinician with a guideline for the postoperative rehabilitation course of a patient who has undergone **Four-Corner Fusion or Proximal Row Carpectomy**. General time frames are given for reference to the average, but individual patients will progress at different rates depending on their age, comorbidities, pre-surgical range of motion, strength, health/functional status, rehabilitation compliance, learning barriers and complications. Specific time frames, restrictions and precautions are given to protect healing tissues and surgical reconstruction.

Wrist salvage procedures are performed to treat moderate to severe arthritis of the carpal bones with significant pain. They are most associated with progression of arthritic changes of the carpal bones as well as alignment due to non-union scaphoid fractures (scaphoid non-union advanced collapse (SNAC)), scapholunate ligament injury (scapholunate advanced collapse (SLAC)), avascular necrosis of lunate (Kienbock's Disease), and avascular necrosis of scaphoid (Preiser's disease). Usually these procedures are performed at the end stages of the conditions above (stage III or IV).

## Four-Corner Fusion

### Phase I (7 to 10-14 days after surgery)

Rehabilitation appointments	<ul style="list-style-type: none"> <li>1-2x/week or per therapist discretion</li> </ul>
Rehabilitation goals and priorities	<ul style="list-style-type: none"> <li>Activities of daily living (ADLs) - within your restrictions</li> <li>Edema management</li> <li>Scar management</li> </ul>
Suggested therapeutic exercises	<ul style="list-style-type: none"> <li>AROM of the wrist, forearm, and digits out of orthoses 3-5x/day</li> <li>Immobilization for 6 weeks. We will send you to therapy to have a thermoplast splint made at two weeks after surgery.</li> </ul>
Precautions	<ul style="list-style-type: none"> <li>No lifting, pushing, or pulling more than 5 pounds with the involved extremity</li> <li>No weightbearing through the involved upper extremity</li> </ul>
Orthotic Management	<ul style="list-style-type: none"> <li>Post op dressings removed.</li> <li>Fabrication of custom thermoplastic wrist cock-up orthosis</li> <li>Wear orthosis at all times except hygiene purposes and exercises</li> </ul>
Progression criteria	<ul style="list-style-type: none"> <li>Progress as pain allows</li> </ul>

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### Phase II (Post op 3 weeks)

Rehabilitation appointments	<ul style="list-style-type: none"> <li>• 1-2/week or per therapist discretion</li> </ul>
Rehabilitation goals and priorities	<ul style="list-style-type: none"> <li>• Edema management</li> <li>• Scar management</li> <li>• Increase wrist motion while decreasing pain at wrist</li> <li>• Independent with ADLs per restrictions</li> </ul>
Suggested therapeutic exercises	<ul style="list-style-type: none"> <li>• Continue with AROM of the wrist</li> <li>• Initiate Dart Thrower's motion AROM of wrist</li> </ul>
Precautions	<ul style="list-style-type: none"> <li>• No lifting, pushing, or pulling more than 5 pounds with the involved extremity</li> <li>• No weightbearing through the involved upper extremity</li> </ul>
Orthotic Management	<ul style="list-style-type: none"> <li>• Continue to wear orthosis at all times, except hygiene purposes and exercises.</li> </ul>
Progression criteria	<ul style="list-style-type: none"> <li>• Progress as pain allows</li> </ul>

## Four-Corner Fusion

### Phase III (Post op 4 weeks)

Rehabilitation appointments	<ul style="list-style-type: none"> <li>• 1-2x/week per therapist discretion</li> </ul>
Rehabilitation goals and priorities	<ul style="list-style-type: none"> <li>• Edema management</li> <li>• Scar management</li> <li>• Increase wrist motion while maintaining a low level or pain free wrist</li> <li>• Independent with ADLs</li> </ul>
Suggested therapeutic exercises	<p>Proprioceptive retraining of the wrist and hand</p> <ul style="list-style-type: none"> <li>• Perform light activities without wearing orthosis</li> <li>• Initiated wrist isometrics</li> </ul>
Precautions	<ul style="list-style-type: none"> <li>• No lifting, pushing, or pulling more than 5 pounds with the involved extremity</li> <li>• No weightbearing through the involved upper extremity</li> </ul>
Orthotic Management	<ul style="list-style-type: none"> <li>• Wean from orthosis during light activities</li> </ul>
Progression criteria	<ul style="list-style-type: none"> <li>• Progress as pain allows</li> </ul>

## Four-Corner Fusion

### Phase IV (5 weeks post op)

Rehabilitation appointments	<ul style="list-style-type: none"> <li>1-2x/week per therapist discretion</li> </ul>
Rehabilitation goals and priorities	<ul style="list-style-type: none"> <li>Edema management</li> <li>Scar management</li> <li>Increase wrist ROM and strength while maintaining pain free wrist</li> <li>Independent with ADLs</li> </ul>
Suggested therapeutic exercises	<ul style="list-style-type: none"> <li>Initiate gentle PROM of the wrist and forearm</li> </ul>
Precautions	<ul style="list-style-type: none"> <li>Be cautious with aggressive PROM. Only perform to expected AROM – see additional notes below</li> <li>No lifting, pushing, or pulling more than 5 pounds with the involved extremity</li> <li>No weightbearing through the involved upper extremity</li> </ul>
Orthotic Management	<ul style="list-style-type: none"> <li>Continue to wean from orthosis as able</li> </ul>
Progression criteria	<ul style="list-style-type: none"> <li>Progress as pain allows</li> </ul>

## Four-Corner Fusion vs. Proximal Row Carpectomy

### Phase V (6 weeks post op)

Rehabilitation appointments	<ul style="list-style-type: none"> <li>1-2x/week per therapist discretion</li> </ul>
Rehabilitation goals and priorities	<ul style="list-style-type: none"> <li>Edema management</li> <li>Scar management</li> <li>Increase wrist ROM and strength while maintaining pain free wrist</li> <li>Independent with ADLs</li> </ul>
Suggested therapeutic exercises	<ul style="list-style-type: none"> <li>Progress PROM to prolonged low load stretches with use of weight</li> <li>Initiate light strengthening without weights or bands, consider functional motion strengthening</li> </ul>
Precautions	<ul style="list-style-type: none"> <li>Be cautious with aggressive PROM. Only perform to expected AROM – see additional notes below</li> <li>No lifting, pushing, or pulling more than 5 pounds with the involved extremity</li> <li>No weightbearing through the involved upper extremity</li> </ul>
Orthotic Management	<ul style="list-style-type: none"> <li>Completely wean from orthosis</li> </ul>
Progression criteria	<ul style="list-style-type: none"> <li>Progress as pain allows</li> </ul>

## Four-Corner Fusion vs. Proximal Row Carpectomy

### Phase VI (8 weeks post op)

Rehabilitation appointments	<ul style="list-style-type: none"> <li>1-2x/week per therapist discretion</li> </ul>
Rehabilitation goals and priorities	<ul style="list-style-type: none"> <li>Scar management</li> <li>A stable wrist</li> <li>Independent with ADLs</li> </ul>
Suggested therapeutic exercises	<ul style="list-style-type: none"> <li>Progressive strengthening with use of putty/hand exerciser, weights, abdnbs</li> <li>Can initiate dynamic orthosis at this time if AROM gains are poor</li> </ul>
Precautions	<ul style="list-style-type: none"> <li>No restrictions at 10-12 weeks.</li> </ul>
Orthotic Management	<ul style="list-style-type: none"> <li>Discontinue orthosis</li> </ul>
Progression criteria	<ul style="list-style-type: none"> <li>Discharge from therapy.</li> <li>Independent in ADLs and IADLs.</li> </ul>