The scaphoid bone, made up of 80% cartilage and receiving retrograde and weak blood supply, is predisposed to injury and nonunion. Appropriate fixation techniques must be used to treat patients with scaphoid fractures to prevent wrist pain, stiffness, and loss of function.

<table>
<thead>
<tr>
<th>Available fixation techniques</th>
<th>Pros</th>
<th>Cons</th>
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</table>
| **Kirschner wire fixation**   | • Cost-effectiveness  
• Ready accessibility  
• Ease of use | • Lack of compression  
• Wire migration  
• Reliance on fluoroscopy |
| **Single-screw fixation**     | • Compression  
• Stable construct | • Costly  
• Failure causes osteolysis around the screw  
• Reliance on fluoroscopy |
| **Double-screw fixation**    | • May provide greater stability against shear and rotational forces and more aggressive rehabilitation | • Costly and complex  
• More implant material added in the scaphoid  
• Reliance on fluoroscopy |
| **Volar plate fixation**      | • Corrects humpback deformity by buttress and useful to set bone loss secondary to prior screw fixation  
• No compression  
• Avoids dorsal scaphoid dissection and interference with graft placement at nonunion site | • Costly  
• Risk of implant impingement and need for removal  
• Reliance on fluoroscopy |
| **Staple fixation**          | • Useful for setting small proximal or distal pole fragments  
• Compression  
• Non-interference with graft placement at nonunion site and less reliance on fluoroscopy | • Costly  
• Risk of implant impingement and need for removal |
| **Combination fixation**     | • Offers increased stability and rotational control  
• Less costly than dual screws, plating, and staples | • Reliance on fluoroscopy |

Additional considerations for the choice of fixation technique
- Use of bone grafts with or without vascularization
- Biomechanics of the fixation technique used
- Clinical outcomes reported by patients
- Complications from the fixation technique used

The choice of the most appropriate fixation technique to treat a scaphoid fracture depends on the patient, type of nonunion, and clinical scenario.