

Finger Fractures

title: "Finger Fractures" slug: finger-fractures region: hand audience: patient mesh_terms: ["Metacarpal Bones", "Finger Injuries", "Finger Phalanges", "Hand Injuries", "Bone Wires", "Joint Dislocations", "Fracture Fixation", "Fractures, Open"] article_count: 161 model_used: Qwen3.6-35B-A3B-Q8_0.gguf generated_at: '2026-06-16T19:33:19+00:00' key_articles: - title: "Hand Fractures: A Review of Current Treatment Strategies" ref_num: 1 evidence_tier: paper evidence_level: 5 doi: 10.1016/j.jhsa.2013.02.017 year: 2013 - title: "Reoperation After Operative Treatment of Open Finger Fractures" ref_num: 3 evidence_tier: paper evidence_level: 3 doi: 10.1177/15589447211043191 year: 2022 - title: "Complications After the Fractures of Metacarpal and Phalanges" ref_num: 4 evidence_tier: paper evidence_level: 5 doi: 10.1016/j.hcl.2010.01.005 year: 2010 - title: "Current methods, outcomes and challenges for the treatment of hand fractures" ref_num: 5 evidence_tier: paper evidence_level: 5 doi: 10.1177/1753193420928820 year: 2020 - title: "Management of Combined Open Fractures of Thumb Metacarpal and Trapezium (Surgical Tip)" ref_num: 6 evidence_tier: paper evidence_level: 4 doi: 10.1007/s11552-007-9026-6 year: 2007 - title: "Fracture-dislocations of the carpometacarpal joints of the ring and little finger" ref_num: 7 evidence_tier: paper evidence_level: 4 doi: 10.1177/1753193414562706 year: 2014 - title: "Diagnostic accuracy of history taking, physical examination and imaging for phalangeal, metacarpal and carpal fractures: a systematic review update" ref_num: 9 evidence_tier: paper evidence_level: 1 doi: 10.1186/s12891-019-2988-z year: 2020 - title: "Frequency, Pattern, and Treatment of Hand Fractures in Children and Adolescents: A 27-Year Review of 4356 Pediatric Hand Fractures" ref_num: 10 evidence_tier: paper evidence_level: 4 doi: 10.1177/1558944719900565 year: 2020 - title: "Return to Play After Hand and Wrist Fractures" ref_num: 11 evidence_tier: paper evidence_level: 5 doi: 10.1016/j.csm.2016.05.005 year: 2016 - title: "Comparison of Open and Closed Hand Fractures and the Effect of Urgent Operative Intervention" ref_num: 12 evidence_tier: paper evidence_level: 2 doi: 10.1016/j.jhsa.2018.04.032 year: 2019 - title: "Predictors of the Postoperative Range of Finger Motion for Comminuted Hand and Finger Fractures Treated with a Titanium Plate" ref_num: 13 evidence_tier: paper evidence_level: 2 doi: 10.1016/s0363-5023(11)60047-6 year: 2011 - title: "Pediatric Finger Fractures: Preventing Big Problems After Small Fractures" ref_num: 14 evidence_tier: paper doi: 10.1016/j.jhsa.2025.08.015 year: 2026 - title: "Combined Dislocation of the Trapezoid and Finger Carpometacarpal Joints–The Steering Wheel Injury: Case Report" ref_num: 15 evidence_tier: case_report evidence_level: 4 doi: 10.1016/j.jhsa.2010.06.005 year: 2010 - title: "MALUNION AND NONUNION OF THE METACARPALS AND PHALANGES" ref_num: 16 evidence_tier: paper evidence_level: 5 doi: 10.2106/00004623-200506000-00028 year: 2005 - title: "Effects of fusion angle on functional results following non-operative treatment for fracture of the neck of the fifth metacarpal" ref_num: 17 evidence_tier: paper evidence_level: 3 doi: 10.1016/j.injury.2008.03.016 year: 2008 -

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Overview

- The majority of hand fractures can be treated without surgery [1].
- Surgery offers distinct advantages in properly selected cases of hand fractures [1].
- Most hand fractures can be managed successfully without operation [5].
- Conservative functional techniques are the optimum treatment for the majority of patients with single metacarpal fractures [5].
- Most pediatric phalangeal fractures can be treated nonsurgically [14].
- A small subset of pediatric phalangeal fractures benefits from surgical intervention [14].
- A quarter of open finger fractures will likely need more than one surgical procedure [3].
- Open finger fractures in more severely injured fingers are especially likely to need more than one surgical procedure due to crush or vascular impairment [3].
- Taping finger fractures can be recommended irrespective of the degree of displacement or the need for reduction in children with displaced extra-articular phalangeal finger fractures [19].
- External fixation is an efficient alternative treatment method for combined open fractures of the thumb metacarpal and trapezium, with encouraging short-term clinical and radiographic results [6].
- Retrograde intramedullary screw (RIS) fixation in metacarpal fractures appears to provide adequate stability with satisfactory clinical outcomes and minimal complications [20].
- More high-quality studies are needed to fully examine retrograde intramedullary screw fixation as a modality for metacarpal fractures [20].
- Intramedullary fixation is an approach reviewed for metacarpal fractures, phalangeal fractures, and interphalangeal joint arthrodesis [23].
- Surgeons who treat metacarpal and phalangeal fractures inevitably treat complications associated with these fractures [4].
- A poorly functioning finger may represent a liability to the hand [16].
- Achievement of union or improved alignment alone may not be sufficient to justify retention of a digit if it is poorly functioning [16].

Anatomy & Pathophysiology

- The majority of hand fractures can be treated without surgery [1].
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- Most hand fractures can be managed successfully without operation [5].
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- A poorly functioning finger may represent a liability to the hand [16].
- Achievement of union or improved alignment alone may not be sufficient to justify retention of a digit [16].
- Surgical treatment is usually indicated for fractures and dislocations of the base of the thumb metacarpal to restore the anatomy and biomechanics of the trapeziometacarpal joint [22].
- Conservative treatment of base of thumb metacarpal fractures and dislocations often yields poor results [22].
- Intramedullary fixation is an approach reviewed for metacarpal fractures, phalangeal fractures, and interphalangeal joint arthrodesis [23].
- Mini-external fixation and Kirschner wire internal fixation have similar effects on postoperative traumatic arthritis and postoperative hand functions in Bennett fracture treatment [25].
- Each of eight patients treated with traction for hand fractures achieved a useful, painless range of motion while in traction and afterward [26].
- Full use of the hand was obtained eight to ten weeks from the time of injury in patients treated with traction [26].
- Both volar plating and external fixation can obtain a good range of motion at the proximal interphalangeal joint in unstable dorsal fracture-dislocations [33].
- The pins and rubbers traction system (PRTS) significantly increases flexion forces of the proximal interphalangeal (PIP) joint [38].
- The pins and rubbers traction system (PRTS) prevents narrowing of the PIP joint [38].
- Most pediatric hand fractures can be treated by closed methods with immobilization for 3 to 4 weeks [41].
- Children have a great potential for malalignment correction of hand fractures by remodeling with growth [41].
- Osteochondral autograft from the hamate for treating partial defect of the proximal interphalangeal joint results in generally acceptable functional recovery and well-restored joint architecture [44].
- Mini-external fixators (MEFs) are effective to establish union and correct alignment of the hand skeleton with minimal tissue trauma [45].
- Mini-external fixators (MEFs) retain a good clinical outcome even in the most complex hand injuries [45].

Classification

- The majority of hand fractures can be treated without surgery [1].
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- Conservative functional techniques are the optimum treatment for the majority of patients with single metacarpal fractures [5].
- Treatment of fractures of the proximal phalanx and metacarpals is based on the presentation of the fracture, degree of displacement, and difficulty in maintaining fracture reduction [18].
- A quarter of open finger fractures will likely need more than one surgical procedure [3].
- Reoperation for open finger fractures is especially likely in more severely injured fingers due to crush or with vascular impairment [3].
- Patients undergoing surgery for metacarpal or proximal/middle phalangeal fractures are not at greater risk for infection based on the diagnosis of open fracture alone [12].
- External fixation is an efficient alternative treatment method for combined open fractures of the thumb metacarpal and trapezium [6].
- Patients with combined ring and little finger carpometacarpal joint fracture-dislocations have similar functional outcomes to patients with only a little finger carpometacarpal joint fracture-dislocation [7].
- The frequency, pattern, and treatment of pediatric hand fractures vary among different age groups [10].
- Only two studies were found on the diagnostic accuracy of history taking for hand and wrist fractures [9].
- Phalangeal fractures tend to deteriorate in total active motion (TAM) more than metacarpal fractures [13].
- Taping finger fractures can be recommended irrespective of the degree of displacement or the need for reduction in children [19].
- Patients with type 3 and 5 jersey finger fractures treated with buttress plating exhibited a functional distal interphalangeal joint range of motion [47].

Clinical Presentation

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- Open finger fractures requiring more than one surgical procedure are especially associated with more severely injured fingers, crush injuries, or vascular impairment [3].
- Patients undergoing surgery for metacarpal or proximal/middle phalangeal fractures are not at greater risk for infection based on the diagnosis of open fracture alone [12].
- Only two studies were found on the diagnostic accuracy of history taking for hand and wrist fractures [9].
- The frequency, pattern, and treatment of pediatric hand fractures vary among different age groups [10].
- Most pediatric phalangeal fractures can be treated nonsurgically, but a small subset benefits from surgical intervention [14].
- Isolated fifth metacarpal fractures can be managed definitively in the ED without further face to face review, with good patient satisfaction and acceptable functional results [29].
- Patients with combined ring and little finger carpometacarpal joint fracture-dislocations have similar functional outcomes to patients with only a little finger carpometacarpal joint fracture-dislocation [7].
- Early diagnosis and appropriate treatment can allow athletes to return to play quickly after they sustain fractures or dislocations of the hand or wrist [11].

Investigations

- Only two studies were found on the diagnostic accuracy of history taking for hand and wrist fractures [9].

Treatment

- The majority of hand fractures can be treated without surgery [1].
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- Most pediatric phalangeal fractures can be treated nonsurgically [14].
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- With non-operative treatment of fractures of the neck of the fifth metacarpal, similar results were achieved with dorsal angulation either above or below 30 degrees [17].
- Treatment of fractures of the proximal phalanx and metacarpals is based on the presentation of the fracture [18].
- Treatment of fractures of the proximal phalanx and metacarpals is based on the degree of displacement [18].
- Treatment of fractures of the proximal phalanx and metacarpals is based on the difficulty in maintaining fracture reduction [18].
- Buddy taping after reduction of displaced extra-articular phalangeal finger fractures in children can be recommended irrespective of the degree of displacement or the need for reduction [19].
- Retrograde intramedullary screw (RIS) fixation in metacarpal fractures appears to provide adequate stability with satisfactory clinical outcomes and minimal complications [20].
- The vast majority of metacarpal fractures in athletes are managed nonoperatively with protective bracing and rapid return to play [30].
- Patients with a single displaced spiral and/or oblique finger metacarpal shaft fracture treated with unrestricted mobilization have outcomes comparable to those treated operatively [31].
- Operative treatment of single displaced spiral and/or oblique finger metacarpal shaft fractures may result in metacarpal shortening [31].
- Intramedullary splinting for displaced fractures of the little finger metacarpal neck offers an aesthetic advantage compared to conservative treatment [32].
- Intramedullary splinting for displaced fractures of the little finger metacarpal neck does not offer a functional advantage compared to conservative treatment [32].
- Surgical indications for fractures or fracture-dislocations include displaced articular fragments [36].
- Surgical indications for fractures or fracture-dislocations include rotational misalignment [36].
- Surgical indications for fractures or fracture-dislocations include significant digit angulation or shortening [36].
- Surgical indications for fractures or fracture-dislocations include irreducible dislocation [36].
- Surgical indications for fractures or fracture-dislocations include significant injury to the joint supporting structures [36].
- Buddy taping is a non-inferior treatment modality for most paediatric finger fractures compared to splint immobilization [37].
- Non-locking plates are appropriate for most metacarpal and phalangeal fractures necessitating plate fixation [39].
- Social deprivation influences the pattern of hand fractures [46].
- Social deprivation influences the management of hand fractures [46].

Complications

- A quarter of open finger fractures require more than one surgical procedure [3].
- Reoperation is especially likely in more severely injured fingers due to crush injury or vascular impairment [3].
- Surgeons treating metacarpal and phalangeal fractures inevitably encounter associated complications [4].
- Patients undergoing surgery for metacarpal or proximal/middle phalangeal fractures are not at greater risk for infection based on the diagnosis of open fracture alone [12].
- Phalangeal fractures tend to deteriorate in total active motion (TAM) more than metacarpal fractures [13].
- A poorly functioning finger may represent a liability to the hand, and achieving union or improved alignment alone may not justify retention of the digit [16].
- Retrograde intramedullary screw fixation in metacarpal fractures is associated with minimal complications [20].
- Transcarpal migration of a broken Kirschner wire can cause ulnar neurapraxia [28].

Recovery

- The majority of hand fractures can be treated without surgery, though surgery offers distinct advantages in properly selected cases [1].
- Early diagnosis and appropriate treatment can allow athletes to return to play quickly after they sustain fractures or dislocations of the hand or wrist [11].
- A quarter of open finger fractures will likely need more than one surgical procedure, especially in more severely injured fingers, due to crush or with vascular impairment [3].
- Patients with combined ring and little finger carpometacarpal joint fracture-dislocations have similar functional outcomes to patients with only a little finger carpometacarpal joint fracture-dislocation [7].
- Both cases of combined dislocation of the trapezoid and finger carpometacarpal joints demonstrate similar mechanisms resulting in nearly identical wrist injuries with good short-term functional outcomes when injuries are quickly recognized and appropriately addressed at initial surgery [15].
- A poorly functioning finger may represent a liability to the hand, and achievement of union or improved alignment alone may not be sufficient to justify retention of the digit [16].
- With non-operative treatment of fractures of the neck of the fifth metacarpal, similar results were achieved with dorsal angulation either above or below 30 degrees [17].
- The patient regained satisfactory grip and thumb function with minimal donor site morbidity following functional reconstruction of a subtotal thumb metacarpal defect with a vascularized medial femoral condyle flap [21].
- Each of the eight patients in the traction study achieved a useful, painless range of motion while in traction and afterward, and full use of the hand was obtained eight to ten weeks from the time of injury [26].

- The only variables that lessen the return-to-play time for metacarpal fractures in the National Football League are involvement of lesser digit metacarpals and operative intervention for treatment of thumb metacarpal fractures [27].
- DEF provides excellent functional results for closed phalangeal fractures at the PIP joint, with a low incidence of postoperative complications similar to other commonly used surgical techniques [42].
- Recent reports confirm that small amounts of metacarpal shortening or dorsal angulation cause minimal functional impairment, and early motion of adjacent joints in closed simple metacarpal fractures expedites recovery of motion and strength without adversely affecting fracture alignment [43].

Key Evidence

- [L5] The majority of hand fractures can be treated without surgery, though surgery offers distinct advantages in properly selected cases. ([10.1016/j.jhsa.2013.02.017](#))
- [L3] A quarter of open finger fractures will likely need more than one surgical procedure, especially in more severely injured fingers, due to crush or with vascular impairment. ([10.1177/15589447211043191](#))
- [L5] Surgeons who treat metacarpal and phalangeal fractures inevitably treat complications associated with these fractures. ([10.1016/j.hcl.2010.01.005](#))
- [L5] Most hand fractures can be managed successfully without operation, and conservative functional techniques are the optimum treatment for the majority of patients with single metacarpal fractures. ([10.1177/1753193420928820](#))
- [L4] Short-term clinical and radiographic results encouraged the authors about the efficiency of external fixation as an alternative treatment method for combined open fractures of the thumb metacarpal and trapezium. ([10.1007/s11552-007-9026-6](#))
- [L4] Patients with combined ring and little finger carpometacarpal joint fracture-dislocations have similar functional outcomes to patients with only a little finger carpometacarpal joint fracture-dislocation. ([10.1177/1753193414562706](#))
- [L1] Only two studies were found on the diagnostic accuracy of history taking for hand and wrist fractures. ([10.1186/s12891-019-2988-z](#))
- [L4] The frequency, pattern, and treatment of pediatric hand fractures vary among different age groups. ([10.1177/1558944719900565](#))
- [L5] Early diagnosis and appropriate treatment can allow athletes to return to play quickly after they sustain fractures or dislocations of the hand or wrist. ([10.1016/j.csm.2016.05.005](#))
- [L2] Patients undergoing surgery for metacarpal or proximal/middle phalangeal fractures are not at greater risk for infection based on the diagnosis of open fracture alone. ([10.1016/j.jhsa.2018.04.032](#))
- [L2] The phalangeal fractures tend to deteriorate %TAM than metacarpal fractures. ([10.1016/s0363-5023\(11\)60047-6](#))
- [Paper] Most pediatric phalangeal fractures can be treated nonsurgically, but a small subset benefits from surgical intervention. ([10.1016/j.jhsa.2025.08.015](#))

- [Case_report] Both cases demonstrate similar mechanisms resulting in nearly identical wrist injuries with good short-term functional outcomes when injuries are quickly recognized and appropriately addressed at initial surgery. ([10.1016/j.jhsa.2010.06.005](#))
- [L5] A poorly functioning finger may represent a liability to the hand, and achievement of union or improved alignment alone may not be sufficient to justify retention of the digit. ([10.2106/00004623-200506000-00028](#))
- [L3] With non-operative treatment of fractures of the neck of the fifth metacarpal, similar results were achieved with dorsal angulation either above or below 30 degrees. ([10.1016/j.injury.2008.03.016](#))
- [L5] Treatment of fractures of the proximal phalanx and metacarpals is based on the presentation of the fracture, degree of displacement, and difficulty in maintaining fracture reduction. ([10.5435/00124635-200810000-00004](#))
- [L1] With the current data, we can conclude that taping these finger fractures can be recommended irrespective of the degree of displacement or the need for reduction. ([10.1177/17531934241293338](#))
- [L2] RIS use in metacarpal fractures appears to provide adequate stability with satisfactory clinical outcomes and minimal complications, although more high-quality studies are needed to fully examine this modality. ([10.1177/1558944720988073](#))
- [Case_report] The patient regained satisfactory grip and thumb function with minimal donor site morbidity. ([10.1016/j.jhsa.2014.06.002](#))
- [L4] Surgical treatment is usually indicated to restore the anatomy and biomechanics of the trapeziometacarpal joint, as conservative treatment often yields poor results. ([10.1177/1753193414554357](#))
- [L5] The article reviews the background, biomechanics, applications, techniques, outcomes, and costs of this approach for metacarpal fractures, phalangeal fractures, and interphalangeal joint arthrodesis. ([10.1016/j.jhsa.2023.08.011](#))
- [L1] Both fixations have similar effects on postoperative traumatic arthritis and postoperative hand functions. ([10.1016/j.otsr.2012.07.015](#))
- [L4] The only variables that lessen the return-to-play time are involvement of lesser digit metacarpals and operative intervention for treatment of thumb metacarpal fractures. ([10.1016/j.jhsa.2022.01.011](#))
- [L4] The mechanism in this case was purely traumatic without predisposing causes such as inflammatory arthropathy or distal radius fracture. ([10.1177/1753193408102118](#))
- [L4] Isolated fifth metacarpal fractures can be managed definitively in the ED without further face to face review, with good patient satisfaction and acceptable functional results. ([10.1007/s11552-015-9749-8](#))
- [L5] The vast majority of metacarpal fractures in athletes are managed nonoperatively with protective bracing and rapid return to play. ([10.1016/j.hcl.2012.05.028](#))
- [L2] Patients with a single displaced spiral and/or oblique finger metacarpal shaft fracture treated with unrestricted mobilization have outcomes comparable to those treated operatively, despite metacarpal shortening. ([10.2106/jbjs.22.00573](#))
- [L2] Intramedullary splinting for displaced fractures of the little finger metacarpal neck offers an aesthetic, but not a functional advantage compared to conservative treatment. ([10.1177/1753193410377845](#))

- [L4] Both methods can obtain a good range of motion at the proximal interphalangeal joint. ([10.1177/17531934211059300](#))
- [L5] Surgical indications for fractures or fracture-dislocations include displaced articular fragments, rotational misalignment, significant digit angulation or shortening, irreducible dislocation, and significant injury to the joint supporting structures. ([10.1016/j.csm.2014.09.002](#))
- [L1] Buddy taping is a non-inferior treatment modality for most paediatric finger fractures compared to splint immobilization. ([10.1177/1753193418822692](#))
- [L4] The PRTS significantly increases flexion forces of the PIP joint and prevents narrowing of the joint. ([10.1007/s00402-007-0526-1](#))
- [L5] Non-locking plates are appropriate for most metacarpal and phalangeal fractures necessitating plate fixation. ([10.1016/j.jhsa.2011.09.023](#))
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- [L5] Recent reports confirm that small amounts of metacarpal shortening or dorsal angulation cause minimal functional impairment, and early motion of adjacent joints in closed simple metacarpal fractures expedites recovery of motion and strength without adversely affecting fracture alignment. ([10.1097/01.blo.0000205888.04200.c5](#))
- [L4] The functional recovery is generally acceptable, with a well-restored joint architecture. ([10.1016/j.jhsa.2021.11.007](#))
- [L4] The findings demonstrate the efficacy of versatile MEFs to establish union and correct alignment of hand skeleton with minimal tissue trauma while retaining a good clinical outcome even in the most complex injuries. ([10.1016/j.jhsa.2008.12.017](#))
- [L3] Social deprivation influences both the pattern and management of hand fractures. ([10.1177/1753193410381823](#))
- [L4] Patients with type 3 and 5 injuries exhibited a functional distal interphalangeal joint range of motion. ([10.1016/j.jhsa.2025.07.038](#))

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