

# Flexor Tendon Sheath Ganglion

title: "Flexor Tendon Sheath Ganglion" slug: flexor-tendon-sheath-ganglion region: hand audience: patient mesh\_terms: ["Fingers", "Tendons", "Ganglion Cysts", "Wrist", "Trigger Finger Disorder", "Tenosynovitis", "Finger Joint", "Finger Injuries"] article\_count: 84 model\_used: Qwen3.6-35B-A3B-Q8\_0.gguf generated\_at: '2026-06-13T10:21:10+00:00' key\_articles: - title: "Sonographic Appearance of the Flexor Tendon, Volar Plate, and A1 Pulley With Respect to the Severity of Trigger Finger" ref\_num: 1 evidence\_tier: paper evidence\_level: 4 doi: 10.1016/j.jhsa.2012.06.027 year: 2012 - title: "Flexor Tendon Sheath Ganglions: Results of Surgical Excision" ref\_num: 2 evidence\_tier: paper evidence\_level: 4 doi: 10.1007/s11552-007-9028-4 year: 2007 - title: "Tenosynovitis of the extensor pollicis longus tendon caused by an intratendinous ganglion: a case report" ref\_num: 3 evidence\_tier: case\_report evidence\_level: 5 doi: 10.1177/1753193412453428 year: 2012 - title: "Outcomes of Wide-Awake Flexor Tendon Repairs in 58 Fingers and 9 Thumbs" ref\_num: 4 evidence\_tier: paper evidence\_level: 4 doi: 10.1016/j.jhsa.2022.01.015 year: 2023 - title: "Flexor digitorum profundus with or without flexor digitorum superficialis tendon repair in acute Zone 2B injuries" ref\_num: 5 evidence\_tier: paper evidence\_level: 3 doi: 10.1177/1753193420932446 year: 2020 - title: "Adhesions as a component of the trigger finger: a dynamic sonographic study" ref\_num: 6 evidence\_tier: paper evidence\_level: 2 doi: 10.1177/1753193420969293 year: 2020 - title: "Flexor Tendon Sheath Infections of the Hand" ref\_num: 7 evidence\_tier: paper evidence\_level: 5 doi: 10.5435/jaaos-20-06-373 year: 2012 - title: "Finger flexor tendon injuries repaired surgically followed by an early active motion program: A prospective cohort study of clinician- and patient-reported outcomes" ref\_num: 8 evidence\_tier: paper evidence\_level: 3 doi: 10.1016/j.jht.2024.12.011 year: 2026 - title: "Tendinopathies of the Hand and Wrist" ref\_num: 9 evidence\_tier: paper evidence\_level: 5 doi: 10.5435/jaaos-d-14-00216 year: 2015 - title: "Volar wrist ganglion presenting as trigger finger" ref\_num: 10 evidence\_tier: paper evidence\_level: 4 doi: 10.1177/1753193412453699 year: 2012 - title: "Ganglion cysts and other tumor related conditions of the hand and wrist" ref\_num: 11 evidence\_tier: paper evidence\_level: 5 doi: 10.1016/j.hcl.2004.03.015 year: 2004 - title: "Six-Strand Flexor Pollicis Longus Tendon Repairs With and Without Circumferential Sutures: A Multicenter Study" ref\_num: 12 evidence\_tier: paper evidence\_level: 3 doi: 10.1177/15589447211057295 year: 2022 - title: "Accuracy and Safety of Non-Image Guided Trigger Finger Injections: A Cadaveric Study" ref\_num: 13 evidence\_tier: paper evidence\_level: 5 doi: 10.1177/15589447221093676 year: 2022 - title: "A technique for accurately marking the A1 pulley on the skin" ref\_num: 15 evidence\_tier: paper evidence\_level: 4 doi: 10.1177/1753193411436294 year: 2012 - title: "Wide-awake Flexor Tendon Repair and Early Tendon Mobilization in Zones 1 and 2" ref\_num: 17 evidence\_tier: paper evidence\_level: 5 doi: 10.1016/j.hcl.2013.02.009 year: 2013 - title: "Differential Pulley Release in Trigger Finger: A Prospective, Randomized Clinical Trial" ref\_num: 18 evidence\_tier: paper

evidence\_level: 1 doi: 10.1177/1558944721994231 year: 2021 - title: "Biomechanics and hand trauma: what you need" ref\_num: 20 evidence\_tier: paper evidence\_level: 5 doi: 10.1016/s0749-0712(02)00130-0 year: 2003 - title: "Absent Ring Finger Flexor Digitorum Profundus Presenting as a Jersey Finger" ref\_num: 23 evidence\_tier: paper evidence\_level: 4 doi: 10.1016/j.jhsa.2016.02.003 year: 2016 - title: "Congenital Hypoplasia of the Extensor Tendons of the Fingers: A Case Report and Review of the Literature" ref\_num: 25 evidence\_tier: case\_report evidence\_level: 4 doi: 10.1016/j.jhsa.2019.03.018 year: 2020 - title: "An in-depth look at zone III and IV anatomy of the finger extensor mechanism and some clinical implications for use of the relative motion flexion orthosis" ref\_num: 26 evidence\_tier: paper evidence\_level: 5 doi: 10.1016/j.jht.2023.01.002 year: 2023 - title: "The balanced finger: biomechanics of intrinsic and extrinsic systems and principles of reconstruction" ref\_num: 27 evidence\_tier: paper evidence\_level: 5 doi: 10.1177/17531934261427638 year: 2026 - title: "Hand Surface Landmarks and Measurements in the Treatment of Trigger Thumb" ref\_num: 28 evidence\_tier: paper evidence\_level: 5 doi: 10.1016/j.jhsa.2013.02.028 year: 2013 - title: "A commentary from the pioneers on the innovation of the relative motion concept: History, biologic considerations, and anatomic rationale" ref\_num: 29 evidence\_tier: paper evidence\_level: 5 doi: 10.1016/j.jht.2022.12.006 year: 2023 - title: "Shear Strain and Motion of the Subsynovial Connective Tissue and Median Nerve During Single-Digit Motion" ref\_num: 32 evidence\_tier: paper evidence\_level: 5 doi: 10.1016/j.jhsa.2008.09.021 year: 2009 - title: "Ultrasonographic assessment in vivo of the excursion and tension of flexor digitorum profundus tendon on different rehabilitation protocols after tendon repair" ref\_num: 33 evidence\_tier: paper evidence\_level: 4 doi: 10.1016/j.jht.2021.01.006 year: 2022 - title: "Longitudinal Tear of the Central Slip Causing Painful and Unusual Snapping of the Finger: A Case Report" ref\_num: 35 evidence\_tier: case\_report evidence\_level: 4 doi: 10.1177/15589447221081876 year: 2022 - title: "Defining the Digit-Specific Confluence of the A1 Pulley" ref\_num: 36 evidence\_tier: paper evidence\_level: 5 doi: 10.1016/j.jhsa.2022.02.011 year: 2023 - title: "A comparison of ultrasound and clinical examination in the detection of flexor tenosynovitis in early arthritis" ref\_num: 37 evidence\_tier: paper evidence\_level: 3 doi: 10.1186/1471-2474-12-91 year: 2011 synthesis\_version: "v2" verifier\_status: skipped

---

## Overview

---

- Flexor tendon thickening occurs significantly before patients experience triggering, except in the thumb [1].
- Surgical excision is a simple, safe, and effective method for treating a painful ganglion of the digital flexor tendon sheath [2].
- Treatment of an intratendinous ganglion should include preserving the tendon, which may be weakened by the ganglion [3].

## Anatomy & Pathophysiology

---

- The flexor tendon thickens significantly before patients experience triggering, except in the thumb [1].

- The A1 pulley confluence varies on a digit-to-digit basis, with no observed confluence in the thumb and the most common confluence observed in the middle finger [36].
- Hand surface landmarks clarify the localization of the thumb A1 pulley and digital neurovascular structures [28].
- Relative motion between a tendon and subsynovial connective tissue (SSCT) in the carpal tunnel is maximal at extremes of wrist motion, particularly 60° extension, which may predispose the SSCT to shear injury [32].
- The active finger protocol requires the strongest tension of the flexor digitorum profundus tendon and results in the longest excursion [33].
- The relative motion concept harnesses normal functional anatomic relationships of the extensor digitorum communis (EDC) and flexor digitorum profundus (FDP) muscles to vary forces on finger joints, allowing immediate controlled active motion while reducing undesirable tension [29].
- Injury to the extensor mechanism, specifically the central slip, can lead to snapping or catching at the proximal interphalangeal (PIP) joint [35].
- Understanding dynamic and passive stabilizing mechanisms is essential for diagnosing imbalance and for planning reconstructive strategies that restore movement [27].
- Hand surgery and hand therapy practice interventions, including the use of relative motion flexion (RMF) orthoses for management of non-surgical and surgical extensor mechanism (EM) injuries, may benefit from an in-depth look at EM zone III and IV anatomy and biomechanics [26].

## Classification

---

- Flexor tendon thickening occurs significantly before patients experience triggering, except in the thumb [1].
- Adherence around the flexor tendons contributes to the pathology of trigger finger and may be present in all grades of triggering [6].

## Clinical Presentation

---

- Flexor tendon thickening occurs significantly before patients experience triggering, except in the thumb [1].
- Adherence around the flexor tendons contributes to the pathology of trigger finger and may be present in all grades of triggering [6].
- The A0 pulley is implicated as the primary cause of 31% to 47% of trigger fingers [18].
- Ganglion cysts are common benign lesions that may present as masses in the hand and wrist [11].
- A volar wrist ganglion can present with triggering pathology at the wrist [10].
- An intratendinous ganglion in the extensor pollicis longus tendon can cause tenosynovitis [3].

- Clinical examination is a valuable tool for detecting flexor disease due to its high specificity and positive predictive values, although a negative examination does not exclude inflammation [37].
- Tendinopathies involving the hand and wrist are common and often diagnosed easily [9].
- Unilateral absence of the ring finger flexor digitorum profundus musculotendinous structure can pose a diagnostic challenge when history and examination suggest an acute avulsion injury [23].

## Investigations

---

- Sonographic evaluation can assess the flexor tendon, volar plate, and A1 pulley with respect to trigger finger severity [1].
- Flexor tendon thickening occurs significantly before patients experience triggering, except in the thumb [1].
- Adherence around the flexor tendons contributes to trigger finger pathology and may be present in all grades of triggering [6].

## Treatment

---

- Surgical excision is a simple, safe, and effective method for treating a painful ganglion of the digital flexor tendon sheath [2].
- Ganglion cysts may be managed with reassurance, nonoperative treatment such as aspiration, or surgical excision [11].
- Treatment of an intratendinous ganglion should include preserving the tendon, which may be weakened by the ganglion [3].
- A volar wrist ganglion presenting as trigger finger can be treated with interventional radiological measures rather than open surgery [10].
- The minimally invasive needle-knife technique for trigger finger achieved a 99% satisfactory result rate with no injuries to flexor tendons, arteries, or nerves [15].
- Compared to other common non-image guided flexor tendon sheath injection techniques, the mid-axial injection technique was found to be the most accurate in producing all intra-sheath injection and least likely to result in intra-tendinous injection [13].
- Tendinopathies involving the hand and wrist are managed straightforwardly with nonsurgical treatments such as splinting, injection, or therapy, or surgical techniques such as tendon release [9].

## Complications

---

- Flexor tendon thickening occurs significantly before patients experience triggering, except in the thumb [1].

- Adherence around the flexor tendons contributes to the pathology of trigger finger and may be present in all grades of triggering [6].
- The A0 pulley is implicated as the primary cause of 31% to 47% of trigger fingers [18].
- Surgical excision is a simple, safe, and effective method for treating a painful ganglion of the digital flexor tendon sheath [2].
- Treatment of an intratendinous ganglion should include preserving the tendon, which may be weakened by the ganglion [3].
- Ganglion cysts are common benign lesions that may be managed with reassurance, nonoperative treatment such as aspiration, or surgical excision [11].
- A volar wrist ganglion can present as trigger finger [10].
- Even otherwise healthy patients can expect some residual digital stiffness following flexor tendon sheath infection despite aggressive and prompt antibiotic therapy and surgical intervention [7].
- The outcome of a flexor tendon repair is influenced by many factors that cannot be controlled intraoperatively [4].
- Whether or not to repair the flexor digitorum superficialis in acute Zone 2B injuries is an intraoperative decision based on the ease of gliding of the repaired tendon(s) [5].
- Six-strand repair technique is an effective procedure to assure early active motion after flexor pollicis longus tendon injuries, and good results can also be achieved by omitting the circumferential suture [12].
- Minimally invasive needle-knife release achieved a 99% satisfactory result rate with no injuries to flexor tendons, arteries, or nerves [15].

## Recovery

---

- Surgical excision is a simple, safe, and effective method for treating a painful ganglion of the digital flexor tendon sheath [2].
- Treatment of an intratendinous ganglion should include preserving the tendon, which may be weakened by the ganglion [3].
- The outcome of a flexor tendon repair is influenced by many factors that cannot be controlled intraoperatively [4].
- Whether or not to repair the flexor digitorum superficialis in acute Zone 2B injuries is an intraoperative decision based on the ease of gliding of the repaired tendon(s) [5].
- Despite aggressive and prompt antibiotic therapy and surgical intervention, even otherwise healthy patients can expect some residual digital stiffness following flexor tendon sheath infection [7].
- The use of patient-reported outcomes, in addition to clinician-reported outcomes, provided deeper insight into patients' perceptions of their recovery after flexor tendon injury [8].
- A six-strand repair technique is an effective procedure to assure early active motion after flexor pollicis longus tendon injuries [12].

- Good results can be achieved by omitting the circumferential suture in six-strand flexor pollicis longus tendon repairs [12].
- The wide-awake approach to flexor tendon repair has decreased rupture and tenolysis rates and permitted consistently good results in cooperative patients [17].
- The hand requires a stable wrist and at least two sensate digits that can oppose with some power for functional prehension [20].
- A patient with congenital hypoplasia of the extensor tendons of the fingers regained nearly full extension of the affected fingers at 6 months and was able to return to work [25].

## Key Evidence

---

- [L4] The flexor tendon thickened significantly before patients experienced triggering except in the thumb. ([10.1016/j.jhsa.2012.06.027](https://doi.org/10.1016/j.jhsa.2012.06.027))
- [L4] Surgical excision is a simple, safe, and effective method for treating a painful ganglion of the digital flexor tendon sheath. ([10.1007/s11552-007-9028-4](https://doi.org/10.1007/s11552-007-9028-4))
- [Case\_report] Treatment of the intratendinous ganglion should include preserving the tendon, which may be weakened by the ganglion. ([10.1177/1753193412453428](https://doi.org/10.1177/1753193412453428))
- [L4] The outcome of a flexor tendon repair is influenced by many factors that cannot be controlled intraoperatively. ([10.1016/j.jhsa.2022.01.015](https://doi.org/10.1016/j.jhsa.2022.01.015))
- [L3] Whether or not to repair flexor digitorum superficialis is an intraoperative decision based on the ease of gliding of the repaired tendon(s). ([10.1177/1753193420932446](https://doi.org/10.1177/1753193420932446))
- [L2] Adherence around the flexor tendons contributes to the pathology of trigger finger and may be present in all grades of triggering. ([10.1177/1753193420969293](https://doi.org/10.1177/1753193420969293))
- [L5] Despite aggressive and prompt antibiotic therapy and surgical intervention, even otherwise healthy patients can expect some residual digital stiffness following flexor tendon sheath infection. ([10.5435/jaaos-20-06-373](https://doi.org/10.5435/jaaos-20-06-373))
- [L3] The use of patient-reported outcomes, in addition to clinician-reported outcomes, provided deeper insight into patients' perceptions of their recovery after flexor tendon injury. ([10.1016/j.jht.2024.12.011](https://doi.org/10.1016/j.jht.2024.12.011))
- [L5] Tendinopathies involving the hand and wrist are common, often diagnosed easily, and managed straightforwardly with nonsurgical treatments such as splinting, injection, or therapy, or surgical techniques such as tendon release. ([10.5435/jaaos-d-14-00216](https://doi.org/10.5435/jaaos-d-14-00216))
- [L4] This is the first reported case of triggering pathology at the wrist to be treated with interventional radiological measures rather than open surgery and demonstrates the efficacy of the technique. ([10.1177/1753193412453699](https://doi.org/10.1177/1753193412453699))
- [L5] Ganglion cysts are common benign lesions that may be managed with reassurance, nonoperative treatment such as aspiration, or surgical excision. ([10.1016/j.hcl.2004.03.015](https://doi.org/10.1016/j.hcl.2004.03.015))

- [L3] Six-strand repair technique is an effective procedure to assure early active motion after flexor pollicis longus tendon injuries and good results can also be achieved by omitting the circumferential suture. ([10.1177/15589447211057295](https://doi.org/10.1177/15589447211057295))
- [L5] Compared to other common non-image guided flexor tendon sheath injection techniques, the mid-axial injection technique was found to be the most accurate in producing all intra-sheath injection and least likely to result in intra-tendinous injection. ([10.1177/15589447221093676](https://doi.org/10.1177/15589447221093676))
- [L4] The minimally invasive needle-knife overcomes disadvantages of previously reported knives and achieved a 99% satisfactory result rate with no injuries to flexor tendons, arteries, or nerves. ([10.1177/1753193411436294](https://doi.org/10.1177/1753193411436294))
- [L5] The wide-awake approach to flexor tendon repair has decreased rupture and tenolysis rates and permitted consistently good results in cooperative patients. ([10.1016/j.hcl.2013.02.009](https://doi.org/10.1016/j.hcl.2013.02.009))
- [L1] These data implicate the A0 pulley as the primary cause of 31% to 47% of trigger fingers in this study. ([10.1177/1558944721994231](https://doi.org/10.1177/1558944721994231))
- [L5] The hand requires a stable wrist and at least two sensate digits that can oppose with some power for functional prehension. ([10.1016/s0749-0712\(02\)00130-0](https://doi.org/10.1016/s0749-0712(02)00130-0))
- [L4] This case illustrates a patient with unilateral absence of the ring finger FDP musculotendinous structure, which can pose a diagnostic challenge when the history and examination suggest an acute avulsion of the ring finger FDP tendon. ([10.1016/j.jhsa.2016.02.003](https://doi.org/10.1016/j.jhsa.2016.02.003))
- [Case\_report] The patient regained nearly full extension of the affected fingers at 6 months and was able to return to work. ([10.1016/j.jhsa.2019.03.018](https://doi.org/10.1016/j.jhsa.2019.03.018))
- [L5] Hand surgery and hand therapy practice interventions, including use of RMF orthoses for management of non-surgical and surgical EM injuries may benefit from an in-depth look at the EM zone III and IV anatomy and biomechanics. ([10.1016/j.jht.2023.01.002](https://doi.org/10.1016/j.jht.2023.01.002))
- [L5] Understanding the dynamic and passive stabilizing mechanisms is essential for diagnosing imbalance and for planning reconstructive strategies that restore movement. ([10.1177/17531934261427638](https://doi.org/10.1177/17531934261427638))
- [L5] The findings from our study clarify hand surface landmarks in localizing the thumb A1 pulley and digital neurovascular structures. ([10.1016/j.jhsa.2013.02.028](https://doi.org/10.1016/j.jhsa.2013.02.028))
- [L5] The relative motion concept harnesses normal functional anatomic relationships of the EDC and FDP muscles to vary forces on finger joints, allowing immediate controlled active motion while reducing undesirable tension. ([10.1016/j.jht.2022.12.006](https://doi.org/10.1016/j.jht.2022.12.006))
- [L5] Relative motion between a tendon and SSCT in the carpal tunnel is maximal at extremes of wrist motion, particularly 60° extension, which may predispose the SSCT to shear injury. ([10.1016/j.jhsa.2008.09.021](https://doi.org/10.1016/j.jhsa.2008.09.021))
- [L4] The active finger protocol was found to require the strongest tension of the tendon and with the longest excursion. ([10.1016/j.jht.2021.01.006](https://doi.org/10.1016/j.jht.2021.01.006))
- [Case\_report] Hand surgeons should be aware that injury to the extensor mechanism and specifically the central slip can lead to snapping or catching at the PIP joint in the finger. ([10.1177/15589447221081876](https://doi.org/10.1177/15589447221081876))
- [L5] A1 pulley confluence varies on a digit-to-digit basis, with no observed confluence in the thumb and the most common confluence observed in the middle finger. ([10.1016/j.jhsa.2022.02.011](https://doi.org/10.1016/j.jhsa.2022.02.011))

- [L3] Clinical examination can be a valuable tool for detecting flexor disease in view of its high specificity and positive predictive values, but a negative clinical examination does not exclude inflammation and an US should be considered. ([10.1186/1471-2474-12-91](https://doi.org/10.1186/1471-2474-12-91))

## References

---

- [1] Sonographic Appearance of the Flexor Tendon, Volar Plate, and A1 Pulley With Respect to the Severity of Trigger Finger. *The Journal of Hand Surgery*. 2012. DOI: 10.1016/j.jhssa.2012.06.027 [2] Flexor Tendon Sheath Ganglions: Results of Surgical Excision. *HAND*. 2007. DOI: 10.1007/s11552-007-9028-4 [3] Tenosynovitis of the extensor pollicis longus tendon caused by an intratendinous ganglion: a case report. *Journal of Hand Surgery (European Volume)*. 2012. DOI: 10.1177/1753193412453428 [4] Outcomes of Wide-Awake Flexor Tendon Repairs in 58 Fingers and 9 Thumbs. *The Journal of Hand Surgery*. 2023. DOI: 10.1016/j.jhssa.2022.01.015 [5] Flexor digitorum profundus with or without flexor digitorum superficialis tendon repair in acute Zone 2B injuries. *Journal of Hand Surgery (European Volume)*. 2020. DOI: 10.1177/1753193420932446 [6] Adhesions as a component of the trigger finger: a dynamic sonographic study. *Journal of Hand Surgery (European Volume)*. 2020. DOI: 10.1177/1753193420969293 [7] Flexor Tendon Sheath Infections of the Hand. *Journal of the American Academy of Orthopaedic Surgeons*. 2012. DOI: 10.5435/jaaos-20-06-373 [8] Finger flexor tendon injuries repaired surgically followed by an early active motion program: A prospective cohort study of clinician- and patient-reported outcomes. *Journal of Hand Therapy*. 2026. DOI: 10.1016/j.jht.2024.12.011 [9] Tendinopathies of the Hand and Wrist. *Journal of the American Academy of Orthopaedic Surgeons*. 2015. DOI: 10.5435/jaaos-d-14-00216 [10] Volar wrist ganglion presenting as trigger finger. *Journal of Hand Surgery (European Volume)*. 2012. DOI: 10.1177/1753193412453699 [11] Ganglion cysts and other tumor related conditions of the hand and wrist. *Hand Clinics*. 2004. DOI: 10.1016/j.hcl.2004.03.015 [12] Six-Strand Flexor Pollicis Longus Tendon Repairs With and Without Circumferential Sutures: A Multicenter Study. *HAND*. 2022. DOI: 10.1177/15589447211057295 [13] Accuracy and Safety of Non-Image Guided Trigger Finger Injections: A Cadaveric Study. *HAND*. 2022. DOI: 10.1177/15589447221093676 [15] A technique for accurately marking the A1 pulley on the skin. *Journal of Hand Surgery (European Volume)*. 2012. DOI: 10.1177/1753193411436294 [17] Wide-awake Flexor Tendon Repair and Early Tendon Mobilization in Zones 1 and 2. *Hand Clinics*. 2013. DOI: 10.1016/j.hcl.2013.02.009 [18] Differential Pulley Release in Trigger Finger: A Prospective, Randomized Clinical Trial. *HAND*. 2021. DOI: 10.1177/1558944721994231 [20] Biomechanics and hand trauma: what you need. *Hand Clinics*. 2003. DOI: 10.1016/s0749-0712(02)00130-0 [23] Absent Ring Finger Flexor Digitorum Profundus Presenting as a Jersey Finger. *The Journal of Hand Surgery*. 2016. DOI: 10.1016/j.jhssa.2016.02.003 [25] Congenital Hypoplasia of the Extensor Tendons of the Fingers: A Case Report and Review of the Literature. *The Journal of Hand Surgery*. 2020. DOI: 10.1016/j.jhssa.2019.03.018 [26] An in-depth look at zone III and IV anatomy of the finger extensor mechanism and some clinical implications for use of the relative motion flexion orthosis. *Journal of Hand Therapy*. 2023. DOI: 10.1016/j.jht.2023.01.002 [27] The balanced finger: biomechanics of intrinsic and extrinsic systems and principles of reconstruction. *Journal of Hand Surgery (European Volume)*. 2026. DOI: 10.1177/17531934261427638 [28] Hand Surface Landmarks and Measurements in the Treatment of Trigger Thumb. *The Journal of Hand Surgery*. 2013. DOI: 10.1016/j.jhssa.2013.02.028 [29] A commentary from the pioneers on the innovation of the relative motion concept: History, biologic considerations, and anatomic rationale. *Journal of Hand Therapy*. 2023. DOI: 10.1016/j.jht.2022.12.006 [32] Shear Strain and Motion of the

Subsynovial Connective Tissue and Median Nerve During Single-Digit Motion. *The Journal of Hand Surgery*. 2009. DOI: 10.1016/j.jhsa.2008.09.021 [33] Ultrasonographic assessment in vivo of the excursion and tension of flexor digitorum profundus tendon on different rehabilitation protocols after tendon repair. *Journal of Hand Therapy*. 2022. DOI: 10.1016/j.jht.2021.01.006 [35] Longitudinal Tear of the Central Slip Causing Painful and Unusual Snapping of the Finger: A Case Report. *HAND*. 2022. DOI: 10.1177/15589447221081876 [36] Defining the Digit-Specific Confluence of the A1 Pulley. *The Journal of Hand Surgery*. 2023. DOI: 10.1016/j.jhsa.2022.02.011 [37] A comparison of ultrasound and clinical examination in the detection of flexor tenosynovitis in early arthritis. *BMC Musculoskeletal Disorders*. 2011. DOI: 10.1186/1471-2474-12-91