

## Little Finger: Big Issues

When a patient arrives at Kassimir Physical Therapy, either in the waiting room or throughout the gym and clinic, one might see a variety of other patients with debilitating major injuries that are grossly noticed. The following could be seen: a patient that is walking with crutches, a cane, a walker, or in a wheelchair; someone using a walking boot with a bad limp or one that has a brace on their knee or ankle; a patient with balance disturbance requiring contact guard assist from the therapist; someone post surgery in a sling; wrist and hand splints or casts from fractures or tendon repairs. Any of the above may make a hand patient with a small finger injury say, "Wow, I can't believe I am here because my problem is not nearly as severe as that other patient, it's only my little finger!" These comments are common for finger injuries, especially the small finger, because our patients minimize their complaints after seeing such gross physical and obvious problems that other patient's experience. However, in this article you will find that the loss of function of the small finger may be as great as the functional loss of these other problems mentioned. Although injury to the small finger may not be as obvious, it certainly can be challenging to treat and must not be ignored.

Usually the full function of the hand is not appreciated until one injures a finger that effects the manipulation of objects in his or her environment. Small finger injuries often affect the function of the other fingers that are not involved because of natural protection to that hand. Of course, hand dominance will dictate how we use our hands during an activity, but it may be surprising to learn how much function, force and dexterity we lose from the loss of our pinky. This article will summarize the various possible diagnoses that affect the small finger and how they result in impaired functional hand usage for daily living tasks.

The little finger, pinky or small finger (SF), becomes vulnerable to many injuries because of the location and susceptibility. There are a number of hand injuries affecting the little finger. For instance: sprains and strains of the finger's PIP and DIP joints (jammed fingers), commonly seen in ball sports such as basketball, where the finger is hyper extended beyond the joint limitation causing a stretch injury to that ligament. This can cause a disruption of the ligament and the capsule surrounding the joint and result in swelling, pain and loss of mobility which leads to loss of strength. Fractures of the 5<sup>th</sup> digit are also common. One could sustain a fracture of the 5<sup>th</sup> MCP,

"Boxer's fracture," frequently caused by hitting something or someone with the ulnar aspect of the hand; or fractures of the phalanxes close to the or in the joint surface, intraarticular. Other possible pathologies or injuries could include: tendon lacerations requiring repair, nerve injuries such as ulnar nerve injury causing Wartenbergs sign (hyper abduction of the small finger), trigger fingers, mallet fingers, arthritic joints and nodules, RA causing deformities such as MCP joint subluxation, swan neck and boutonniere deformities, tendon instabilities such as slipped or ruptured central tendons, lacerations, blunt trauma and contusions, or crush injuries. Dupuytren's contractures can also cause a loss of power grip. Our SF is the most vulnerable in space that goes unprotected more than the other fingers.

Any of the above diagnoses can cause reduced function. Some common functional uses with the SF may include: shaking hands, holding coins, having a full grip around an object like a hammer or baseball bat where one needs a strong power grip, creating the maximum surface area for leverage such as holding a golf club, typing and computer work, use during sign language, pulling on levers at work, washing or running your fingers through your hair, opening a door, pulling up your pants or panty hose, holding a phone, using a screw driver or even putting your hands in your pocket. The following activities may also be very important to some people and include picking your nose or your ear, getting a full back scratched, achieving a full octave in playing piano, and drinking tea i.e. holding up the little finger. Dr. Evil would have a tough time without touching the small finger to his mouth; however any of the Simpsons would not miss it since they all have 3 fingers besides their thumb anyway. Some not so important things you can't do with injury to the small finger are make the hang loose or rock on sign, imitate the Vulcan sign of Spock or do shadow figures with your hands when using a flashlight in a dark room.



### About the Author: Gary D. Kassimir, PT, MS, CHT



Gary D. Kassimir PT, MS, CHT is the private practice owner of Kassimir Physical Therapy. He began the company in 1997 and propelled it through 3 expansions at the Commercentre specializing in areas of Orthopedic, Hand and Sports rehabilitation. Gary earned his Master of Science degree in Physical Therapy in 1987 from Long Island University, and is a Certified Hand Therapist since 1998. He is active daily in patient care, mentoring and managing his practice of 14 employees. He was sidetracked by his own ACL injury this year and is near ready to get back to sports. For now he will watch the Maryland Terps, where his twin daughters Vicki and Ali attend, Beth Tfiloh sports where his daughter Marisa attends, and the Ravens with his wife Sherri.



The loss of the fourth or fifth finger can result in a frustrating loss of grip strength and hand power. If one tries to turn a doorknob to open a door without the small and ring finger, a significant amount of strength and leverage is lost from the ulnar side of the hand. A small study of 14 employees at KPT was performed comparing gripping a dynamometer with all the fingers vs. taking the pinky off and gripping as hard as they can. Both hands were tested in standard testing position using the Jamar Dynamometer position II. The result was an average of 32% loss of power grip. So a considerable amount of strength is lost without the pinky. The index, middle and ring fingers will weaken as well since there are shared tendons from one muscle; the flexor digitorum profundus, that provides a full tight grip and the fingers can become passively insufficient if the SF is unable to bend.

Besides power grip loss, several diagnoses such as ulnar nerve compression syndromes affecting the SF may cause the loss of dexterity, speed of movements and control. On a standard keyboard the right pinky is used for 16 keys, the left pinky for 10 keys, while every other finger is used for at most 8 keys. Therefore keying can become a major problem. Musicians who play acoustic or electric guitar would also have a problem with their fretting hand as they would lose the balancing between the fingers and the opposing thumb.

When asked the question “If you had to lose a finger, which one would you choose?” Interesting enough, most people would say the ring or small finger. However, as stated above, we would lose a lot of power without our pinky. Our bodies were designed so that our smallest finger would take on a larger role in function. This is evidenced by all the anatomy placed around that finger including the hypothenar eminence. Besides the thumb, the SF has its own individual flexors, extensors, abductors and opposition muscles that the other fingers don’t have.

Depending on the problem with the SF, the therapists at Kassimir Physical Therapy would educate the patient on the importance of this finger, teach methods to protect it from the environment and apply safe treatment methods to achieve the quickest return of function. Specific treatments are beyond the scope of this newsletter but may include application of custom splints, Velcro buddy tape, gel sheeting for scar control and Coban as necessary. Manual therapy including mobilization of soft tissue and joints, retrograde massage, range of motion and strengthening techniques are also used frequently in addition to the Biometrics Elink hand computer system. A home exercise program for every patient is of course very important in the total care and quickest recovery possible. In conclusion, the importance of the SF and ability to achieve full recovery ranks up there with the rehabilitation of more obvious physical injuries.



Staff therapists from left: Feliks Perl, PTA, Gary Kassimir, PT, MS, CHT, Tami Grunitzky, DPT, and Day Alfonso, PT

**KPT News Flash:**

We hope everyone had a great and safe summer! Here at KPT we had a productive summer. Our waiting and hand therapy rooms were updated with new guest chairs. Our summer sponsorships included the Hadassah 5K “Check it out” Challenge. We invite you to join us on Sunday, September 25th at Sinai’s Race for Our Kids to benefit the children at Sinai Hospital. As football season kicks off, we also invite you to join us in showing your Raven’s pride on “Purple Fridays.”

We are excited to welcome Alreen “Day” Alfonso, PT to our practice as a full-time staff therapist (see picture of our practitioners above).

Kassimir Physical Therapy now has a fan page on Facebook! Join us and remain up-to-date with events, updates and services. As always, we are thankful for your support and continuous referrals!



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Tuesday	8:00 a.m.	–	8:30 p.m.
Wednesday	7:30 a.m.	–	8:30 p.m.
Thursday	8:00 a.m.	–	8:30 p.m.
Friday	7:30 a.m.	–	6:00 p.m.
Saturday	8:00 a.m.	–	12:30 p.m.

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