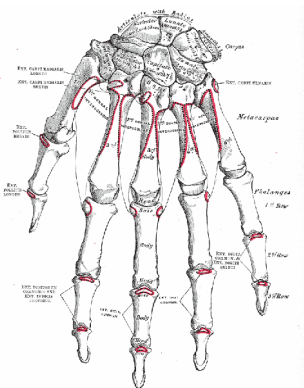


Golden Hills

Orthopedic and Sports Physical Therapy

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Part II: Preventing and Treating Injuries to the Hand and Wrist

The Role of Physical Therapy

The January issue of *Golden Hills Journal* was the first in a two-issue series on the prevention and treatment of hand and wrist injuries. In January, we focused on hand and wrist anatomy and highlighted the most common types of injuries. This month, we delve into more detail about each injury condition and provide helpful insights into our approach to improving patient recovery through physical therapy.

Acute Injuries

At Golden Hills, we regularly see patients who have suffered traumatic hand and wrist injuries—sustained in car collisions, sporting accidents and the like—in addition to less severe injuries such as sprains and fractures. In the more serious cases we work closely with the referring physician to plan a course of therapy for the patient once his or her condition has stabilized.

Colles' Fracture (Type of Distal Radius Injury)

If a patient falls on an outstretched hand, he or she may suffer a Colles' fracture, which is a fracture of the bones of the forearm (the radius and the ulna) near the wrist. Whether the break is "clean" and the bones can simply be "set" and immobilized with a cast, or if surgery is required, physical therapy is an integral part of the rehabilitation

program, before and after the cast or splint is removed.

Physical Therapy Treatment

Treatment begins while the patient is still immobilized, focusing on the MCP, PIP and DIP motion. The goal is to prevent further joint stiffness and potential reflex sympathetic dystrophy. After 6 to 8 weeks, gentle range of motion (ROM) of the forearm should be instituted; progressive strengthening exercises are recommended. These exercises are often performed with some type of wrap to limit terminal wrist extension and excessive loading of the fracture site and prevent the development of tendonitis.

Scaphoid Fracture

The scaphoid is the most frequently fractured of the eight carpal bones. It is most commonly injured from axial loading on a dorsiflexed wrist, as occurs in a fall or during contact sports. Initial symptoms include radial wrist pain with focal tenderness over the anatomic snuffbox. This may or may not be accompanied by localized edema.

Physical Therapy Treatment

Closed reduction with percutaneous pinning and primary ligamentous repair, as well as gentle ROM to the wrist carpal bone and fingers. Edema reduction technique, progressive strengthening and functional mobility, sport activities training.

Physician Tips

Golden Hills' Commitment to Patient Care

While minor hand and wrist injuries can be treated with NSAIDs, ice and rest, more serious injuries will require physical therapy as an important part of the overall patient care plan. At Golden Hills, we use different techniques to help injured patients increase strength, regain mobility and return to pre-injury levels of activity.

Treatment must be individualized to suit the athlete and his or her particular injury condition.

Contact us today for more information: **(408) 274-0888.**

Preventing and Treating Injuries to the Hand (Continued)

Hamate Fracture

Fractures of the hook of the hamate bone can occur from a direct blow while falling onto an outstretched palm. For athletes, the most common causes are swinging a bat, golf club or racquet. Symptoms include pain when firm pressure is applied over the hook of the hamate.

Physical Therapy Treatment

Treatment includes excision of the hook of the hamates, followed by ROM and a progressive strengthening program.

Metacarpal Fracture

Without proper treatment, a finger fracture can cause major problems for the patient, potentially causing improper alignment of the entire hand. Without treatment, a fractured finger can remain stiff and painful for a long time. Symptoms include swelling, pain and tenderness, pain in the hand when the patient's taps the end of the finger while it is straight, inability to move the finger and deformity.

Physical Therapy Treatment

Treatment begins with a splint that must hold the MCP joints flexed 70° to 90° with the PIP and the DIP joints in 5° to 10° flexion. ROM exercises can be started before union is confirmed.

Metacarpophalangeal (MCP) Joint Dislocation

Dislocations may occur at the joint at the base of the thumb or other fingers or at the middle joints of the fingers. Dislocations usually result when the thumb is bent too far out or the fingers are bent too far back. Symptoms can include pain, swelling, joint instability and decreased strength.

Physical Therapy Treatment

A simple MPJ dislocation (volar or dorsal) needs splinting followed by progressive ROM and strengthening exercises. Following surgery and splinting, a complex MCP dislocation needs progressive ROM and functional training for the hand.

Overuse Injuries

Overuse injuries occur when too much stress is placed on a joint or other tissue, often by overdoing an activity or through repetition.

Carpal Tunnel Syndrome

Carpal tunnel syndrome (CTS) is caused by swelling of the tendons within the carpal tunnel. The carpal tunnel also contains the median nerve, which transmits impulses directly from the brain, or the spinal cord, to the hand. When the tendons swell and put pressure on the median nerve, the result can be numbness, weakness, tingling and burning in the fingers and hands.

Physical Therapy Treatment

Treatment includes extension splinting, full grip strength and activity, as well as surgical scar mobilization, edema and hypersensitivity management.

Cubital Tunnel Syndrome

The cubital tunnel is a bony tunnel in the inside of the elbow which contains the ulnar nerve. Because there is very little room for movement within the cubital tunnel, inflammation of the ulnar nerve can cause tingling or pain radiating from the elbow down to the fingers.

Physical Therapy Treatment

Treatment includes ice, ultrasound, TENS and gentle neuro tissue mobilization. The patient is taught proper biomechanics for sports.

"Trigger Finger"

"Trigger finger" is a form of tendonitis brought on by repeatedly grasping an object. It is an inflammation of the flexor tendon in any of the fingers or thumb. Swelling makes it difficult for the flexor tendon to glide easily through the tendon sheath that surrounds it. There may be a popping or clicking sensation when moving the finger, or it may lock in a curled position.

Physical Therapy Treatment

Treatment includes stretching, deep friction massage, ultrasound and muscle balance of the upper extremities and posture retraining.

DeQuervain's Disease

DeQuervain's disease is an irritation and swelling of the sheath or tunnel that surrounds the thumb tendons as they pass from the wrist to the thumb. As with trigger finger, the tendon swells and is unable to move freely within the sheath located at the wrist near the base of the thumb. The patient may experience twinges of pain at the base of the thumb or the wrist.

Physical Therapy Treatment

Treatment is similar to that for trigger finger.

Tendonitis of the Wrist

Tendonitis of the wrist is an irritation and swelling of the tissue that surrounds the tendons of the thumb. Pain in the front of the wrist is common. Bending and extending the wrist is usually painful; there may be swelling in the wrist.

Physical Therapy Treatment

Treatment includes contrast whirlpool, strength, flexibility and functional mobility training.