

# STEVEN CHUDIK MD

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## SHOULDER, KNEE & SPORTS MEDICINE

### Valgus Extension Overload Syndrome (VEOS)

Valgus extension overload syndrome (VEOS) is a constellation of problems and pains within the elbow due to overuse and repetitive throwing forces. The ulnar collateral ligament (UCL) on the inner side of the elbow is a structure that helps keep the normal relationship of the humerus (arm bone) and the ulna (one of the forearm bones). This ligament may be stretched over time with repeated hard throwing. The stretching of the ligament results in gapping of the inner side of the elbow. This stretches the ulnar nerve on the inner elbow, causing symptoms in the hand or particularly the ring and little fingers. The outer part of the elbow and the back of the elbow develop increased pressure from the loose UCL, resulting in cartilage injury, bone spurs, and eventually loose pieces of bone floating within the elbow joint.

#### Frequent Signs and Symptoms

- Pain and tenderness around the elbow especially when trying to throw or straightening the elbow
- Occasionally, locking or catching of the elbow
- Swelling of the elbow
- Inability to throw at full speed; loss of ball control
- Elbow stiffness; inability to straighten the elbow
- Numbness or tingling in the ring and little fingers
- Clumsiness and weak hand grip



#### Etiology (Causes)

Force that exceeds the strength of the ligament results in stretching of the ulnar collateral ligament of the elbow. This injury usually is the result of throwing repetitively or particularly hard, which produces stretching of the ulnar nerve and increased pressure of the cartilage on the outer portion of the elbow, as well as the back of the elbow. This causes bone spurs and loose bodies within the elbow joint.

#### Risk Factors

- Sports in which the arm is used to throw or straighten forcefully (baseball, javelin, hockey slap shot, tennis serve, volleyball)
- Poor physical conditioning (strength and flexibility)
- Improper throwing mechanics
- Sports in which there is a valgus force on an extended elbow (gymnastics) or hyperextension of the elbow (boxing, weightlifting)



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### Prevention

- Appropriately warm up and stretch before practice and competition.
- Maintain appropriate conditioning:
  - Arm, forearm, and wrist flexibility
  - Muscle strength and endurance
- Use proper technique when throwing, serving, and hitting a puck.
- Braces may be effective in preventing injury, especially re-injury, by reducing forceful straightening of the elbow.

### Outcomes

Sometimes, this condition can be managed non-operatively, although surgery may be required to alleviate symptoms. Persons with VEOS are prone to recurrence after a prolonged period if the sport is continued.

### Potential Complications

- Frequent recurrence of symptoms and repeated injury, resulting in a chronic problem, such as inability to throw at full speed or distance, pain with throwing, and loss of ball control, especially if activity is resumed too soon after injury; appropriately addressing the problem the first time decreases frequency of recurrence and optimizes healing time
- Prolonged healing time if activities are resumed too soon
- Injury to other structures of the elbow, including medial epicondylitis, and strain of the muscle-tendon of the muscles that bend the wrist
- Arthritis of the elbow
- Elbow stiffness (loss of elbow motion)
- Locking of the elbow
- Prolonged disability
- Inability to return to the same level of sports
- Tear of the ulnar collateral ligament
- Risks of surgery, including infection, bleeding, injury to nerves, persistent pain, increased pain, catching or locking, tearing, and need for further surgery



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### Treatment Considerations

Initial treatment consists of medication and ice to relieve the pain and modification of the activity that initially caused the problem. Elbow range-of-motion, strength, and endurance exercises are performed and proper throwing mechanics are incorporated. These may be carried out at home, although usually referral to a physical therapist or athletic trainer is recommended, eventually. A gradual return to throwing is attempted. If symptoms persist or if there is locking and catching, which may be due to loose bodies within the joint, arthroscopic surgery is recommended. Surgery is performed to remove bone spurs, bone fragments, and loose cartilage. Return to sports after surgery may take 3 months. UCL reconstruction may be needed to address laxity of the UCL.

### Possible Medications

- Nonsteroidal anti-inflammatory medications, such as aspirin and ibuprofen (do not take within 7 days before surgery), or other minor pain relievers, such as acetaminophen, are often recommended. Take these as directed by your physician. Contact your physician immediately if any bleeding, stomach upset, or signs of an allergic reaction occur.
- Your physician may prescribe stronger pain relievers as necessary. Use only as directed.

### Modalities (Cold Therapy)

Cold is used to relieve pain and reduce inflammation. Cold should be applied for 15 to 20 minutes every 2 to 3 hours for inflammation and pain and immediately after any activity that aggravates your symptoms. Use ice packs or an ice massage.

## Notify My Office If Symptoms Worsen



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