

## Notice of Independent Review Decision

### **DATE OF REVIEW:**

06/16/2008

### **IRO CASE #:**

### **DESCRIPTION OF THE SERVICE OR SERVICES IN DISPUTE**

Carpal Tunnel Release 26989/354.0

### **A DESCRIPTION OF THE QUALIFICATIONS FOR EACH PHYSICIAN OR OTHER HEALTH CARE PROVIDER WHO REVIEWED THE DECISION**

Board Certified Orthopaedic Surgeon

### **REVIEW OUTCOME**

Upon independent review the reviewer finds that the previous adverse determination/adverse determinations should be: **Upheld**

Provide a description of the review outcome that clearly states whether or not medical necessity exists for each of the health care services in dispute.

**The request for bilateral Carpal Tunnel Release 26989/354.0 is not medically necessary.**

### **PATIENT CLINICAL HISTORY [SUMMARY]:**

The claimant is a female with no specific mechanism of injury, but a date of injury is xx/xx/xx. She is initially evaluated by M.D. on 04/14/08. His office note reported a five month history of bilateral numbness/tingling of her hands as well as a questionable mass of the left wrist. The five months of symptoms do not correlate with her date of injury or her history of problems for a longer period of time. He reported that she had been previously diagnosed with carpal tunnel syndrome (CTS). There is no objective documentation of treatment other than he notes NSAID's and splinting. She is reportedly obese. Electrodiagnostic studies revealed bilateral CTS right greater than left. Dr. performed a steroid injection on 05/21/08. He reported on 05/28/08 that she had not responded to the injection. The claimant authored a letter of explanation on 04/24/08. She reported knots on her wrists which were so sensitive that they caused her to cry with light touch. She had uncontrollable shaking/jerking which she associated with her carpal tunnel syndrome. She reports an inability to wear her splints (noncompliance).

### **ANALYSIS AND EXPLANATION OF THE DECISION INCLUDE CLINICAL BASIS, FINDINGS AND CONCLUSIONS USED TO SUPPORT THE DECISION.**

The claimant is a female who reported a date of injury of xx/xx/xx for her hands. There is not a specific described mechanism of injury, but it assumed to be repetitive overuse. There is no information regarding the ergonomics of her work position or her daily work routine. Several recent evidence-based studies have questioned the etiology of CTS in relationship to overuse phenomena. In fact, the claimant has had symptoms for at least five months prior to her visit to Dr. . She was reported to have significant abnormalities on electromyogram/nerve conduction velocity (EMG/NCV) which suggest a longer term ongoing process. The bilateral symptoms suggest a possible constitutional basis. There is no specific information or workup regarding obesity or metabolic disorders (hypothyroidism, diabetes mellitus).

The evidence-based **Medical Disability Advisor:**

**Risk:** Causation of carpal tunnel syndrome is controversial. At least 60 conditions have been associated with the condition in the medical literature. Carpal tunnel syndrome is accepted as potentially caused by work



activity in 49 of the 50 US states, and some Canadian provinces, but not by most other developed nations. No single ergonomic risk factor is sufficient to explain the low level statistical associations between certain work activities and this condition. Probably multiple simultaneous ergonomic risk factors must be present for work or recreational activity to contribute to the causation of carpal tunnel syndrome. Proposed ergonomic risk factors include any type of activity that involves highly repetitive wrist motion, holding the wrist in awkward positions for sustained periods of time, forceful pinching or gripping, and work-task stresses. Examples might include working for long periods of time with vibrating power tools or heavy assembly line work. Excessive typing or computer work had been suspected by clinicians to have contributed to the risk of CTS; however, scientific evidence has failed to verify or falsify this theory. Other conditions that may help cause or contribute to CTS include [rheumatoid arthritis](#), [renal failure](#), [diabetes mellitus](#), acromegaly, [multiple myeloma](#), amyloidosis, [obesity](#), recent [tuberculosis](#), and bacterial or fungal [infection](#) spread into the carpal tunnel.

Individuals who have suffered [trauma](#) or injury such as a [wrist fracture](#) that decreases the size of the carpal tunnel or swelling of the synovial lining membranes surrounding the tendons in the carpal tunnel ([tenosynovitis](#)) are at higher risk of CTS. It may also occur in some individuals with degenerative neck conditions ([cervical spondylosis](#)). There is an increased frequency of CTS in [alcoholics](#), and smokers may experience worse symptoms and a longer recovery time from CTS than nonsmokers.

Women are three times more likely to develop the syndrome than men. The risk is higher with advancing age. For women, the peak time for developing CTS is between ages 45 to 54. Women who are [pregnant](#), taking oral contraceptives, or going through [menopause](#) are more prone to developing the condition, possibly due to fluid retention ("Carpal Tunnel Syndrome").

**Incidence and Prevalence:** An estimated 5% of the US population is affected by carpal tunnel syndrome (Fuller).

The claimant has other symptoms to include a questionable mass, excessive tenderness, uncontrollable shaking/jerking that does not correlate with the diagnosis.

**Official Disability Guidelines:**



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Carpal tunnel release surgery  
(CTR)

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Recommended after an accurate diagnosis of moderate or severe CTS. Surgery is not generally initially indicated for mild CTS, unless symptoms persist after conservative treatment. See [Severity definitions](#). Carpal tunnel release is well supported, both open and endoscopic (with proper surgeon training), assuming the diagnosis of CTS is correct. **(Unfortunately, many CTR surgeries are performed on patients without a correct diagnosis of CTS, and these surgeries do not have successful outcomes.)** Outcomes in workers' comp cases may not be as good as outcomes overall, but studies still support the benefits from surgery. Carpal tunnel syndrome may be treated initially with education, activity modification, medications and night splints before injection is considered, except in the case of severe CTS (thenar muscle atrophy and constant paresthesias in the median innervated digits), but outcomes from carpal tunnel surgery justify prompt referral for surgery in moderate to severe cases. Nevertheless, surgery should not be performed until the diagnosis of CTS is made by history, physical examination and possible electrodiagnostic studies. Symptomatic relief from a cortisone/anesthetic injection will facilitate the diagnosis, however the benefit from these injections although good is short-lived. Surgical decompression of the median nerve usually has a high rate of long-term success in relieving symptoms, with many studies showing success in over 90% of patients where the diagnosis of CTS has been confirmed by electrodiagnostic testing. (Patients with the mildest symptoms display the poorest post-surgery results, but in patients with moderate or severe CTS, the outcomes from surgery are better than splinting.) Carpal tunnel syndrome should be confirmed by positive findings on clinical examination and may be supported by nerve conduction tests before surgery is undertaken. Mild CTS

with normal electrodiagnostic studies (EDS) exists, but moderate or severe CTS with normal EDS is very rare. Positive EDS in asymptomatic individuals is not CTS. Any contributions to symptoms by cervical radiculopathy (double crush syndrome) will not be relieved by the surgery. ([Various references listed under "Surgical Considerations"](#)) ([Chung, 1998](#)) ([Verdugo, 2002](#)) ([Shin, 2000](#)) ([AHRQ, 2003](#)) ([Lyll, 2002](#)) ([Gerritsen-JAMA, 2002](#)) ([Verdugo-Cochrane, 2003](#)) ([Hui, 2004](#)) ([Hui, 2005](#)) ([Bilic, 2006](#)) ([Atroshi, 2006](#)) ([Ucan, 2006](#)) Being depressed and a workers' compensation claimant predicts being out of work after carpal tunnel release surgery. This highlights the importance of psychosocial management of musculoskeletal disorders. ([Amick, 2004](#)) ([Karjalainen-Cochrane, 2002](#)) ([Crossman, 2001](#)) ([Denniston, 2001](#)) ([Feuerstein, 1999](#)) Older age should not be a contraindication to CTR. ([Weber, 2005](#)) ([Hobby2, 2005](#)) In a sample of patients aged 70 years and older, patient satisfaction was 93 percent after surgical treatment versus 54 percent after nonsurgical treatment. ([Ettema, 2006](#)) Mini palm technique may be as good or better than endoscopic or open release. ([Melhorn, 1994](#)) ([Cellocco, 2005](#)) Steroid injections and wrist splinting may be effective for relief of CTS symptoms but the benefit decreases over time. Symptom duration of less than 3 months and absence of sensory impairment at presentation are predictive of an improved response to conservative treatment. Selected patients presenting with mild to moderate carpal tunnel syndrome (i.e., with no thenar wasting or obvious underlying cause) may receive either a steroid injection or wear a wrist night splint for 3 weeks. This will allow identification of the patients who respond well to conservative therapy and do not need surgery. ([Graham, 2004](#)) ([Ly-Pen, 2005](#)) See [Injections](#). While diabetes is a risk factor for CTS, patients with diabetes have the same probability of positive surgical outcome as patients with idiopathic CTS. ([Mondelli, 2004](#)) Statistical evaluation identified five factors which were important in predicting lack of response to conservative treatment versus surgery: (1) age over 50 years; (2) duration over ten months; (3) constant paresthesia; (4) stenosing flexor tenosynovitis; & (5) a Phalen's test positive in less than 30 seconds. When none of these factors was present, 66% of patients were improved by medical therapy, 40% were improved with one factor, 17% were improved with two factors, and 7% were improved with three

factors, and no patient with four or five factors present was cured by medical management. ([Kaplan, 1990](#)) Operative treatment was undertaken for 31% of new presentations of carpal tunnel syndrome in 2000. ([Latinovic, 2006](#)) In the treatment of carpal tunnel syndrome, decompression surgery produces a better long-term outcome than local corticosteroid injections, according to data presented at the American College of Rheumatology meeting. At 1 year, the results showed that local corticosteroid injection was as effective as decompression surgery; however, at 7 years, the estimated accumulated incidence of therapeutic failure in the corticosteroid group was 41.8% compared with 11.6% in the surgery group, because the effects of corticosteroid injections fade with time. ([Ly-Pen, 2007](#))

#### **ODG Indications for Surgery™ -- Carpal Tunnel Release:**

I. Severe CTS, requiring ALL of the following:

A. Symptoms/findings of severe CTS, requiring ALL of the following:

1. Muscle atrophy, severe weakness of thenar muscles
2. 2-point discrimination test > 6 mm

B. Positive electrodiagnostic testing

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II. Mild/moderate CTS, requiring ALL of the following:

A. Symptoms (pain/numbness/paresthesia/impaired dexterity), requiring TWO of the following:

1. Abnormal Katz hand diagram scores
2. Nocturnal symptoms
3. Flick sign (shaking hand)

B. Findings by physical exam, requiring TWO of the following:

1. Compression test
2. Semmes-Weinstein monofilament test
3. Phalen sign
4. Tinel's sign
5. Decreased 2-point discrimination
6. Mild thenar weakness (thumb abduction)

C. Comorbidities: no current pregnancy

**D. Initial conservative treatment, requiring THREE of the following:**

- 1. Activity modification  $\geq$  1 month**
- 2. Night wrist splint  $\geq$  1 month**
- 3. Nonprescription analgesia (i.e., acetaminophen)**
- 4. Home exercise training (provided by physician, healthcare provider or therapist)**
- 5. Successful initial outcome from corticosteroid injection trial (optional)**

E. Positive electrodiagnostic testing [note that successful outcomes from injection trial or conservative treatment may affect test results] ([Hagebeuk, 2004](#))

The claimant's lack of response to steroid injection is potentially a poor prognostic sign. There is no information of treatment prior to Dr. initial evaluation.

**A DESCRIPTION AND THE SOURCE OF THE SCREENING CRITERIA OR OTHER CLINICAL BASIS USED TO MAKE THE DECISION:**

**ODG- OFFICIAL DISABILITY GUIDELINES & TREATMENT GUIDELINES**