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# Radial Nerve Entrapment Syndromes

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DELLON INSTITUTES FOR PERIPHERAL NERVE SURGERY®

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### YOUR COMPLAINTS ARE

Numbness and tingling in the back of your hand, on the side with the thumb, index and middle fingers (pale blue color).

The hand does not wake you up at night.

The hand may go to sleep while you are working.

The little and ring finger are not part of the problem, if they are, you may also have Cubital Tunnel Syndrome. (See the *Cubital Tunnel Syndrome* brochure.)

The front of the thumb, index, and middle finger are not part of the problem. If they are, you might also have Carpal Tunnel Syndrome. (See the *Carpal Tunnel Syndrome* Brochure.)

### WHAT CAUSES YOUR COMPLAINTS?

A nerve goes through a tight region in the forearm as it travels from deep to the muscles to reach the skin.

This nerve is called the *Radial Sensory nerve*.

When the forearm turns so the palm moves from facing up (supinates) to downwards (pronates), the radial sensory nerve gets pressed.

When the nerve gets pressed, blood flow to the nerve slows, blood flow decreases, and the nerve sends a message of numbness and tingling.

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### TREATMENT WITHOUT SURGERY

Alter your activities so you do not pronate your forearm so much (keep the palm of your hand facing upwards).

Do not sleep with your elbow bent and your head resting on your forearm.

Be sure your wrist watch or jewelry is not too tight.

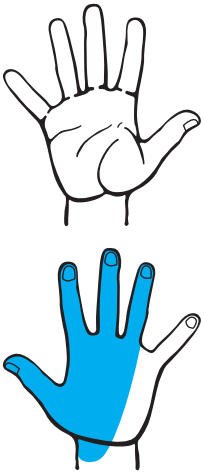
### WHEN SHOULD I HAVE SURGERY?

When the back of your hand is numb most of the day.

When you feel weakness begin in your hand.

When your job requires you to have the forearm motion of twisting so often that your symptoms occur, or you must spend a long time each day performing computer data entry.

When neurosensory testing with the Pressure-Specified Sensory Device™ (see the *Neurosensory Testing* brochure for more information) shows the radial sensory nerve fibers are degenerating.



Right hand with area of radial sensory nerve symptoms noted in blue.

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#### WHAT IS THE SURGERY LIKE?

The surgery takes about one hour.

The surgery is performed as an outpatient.

The surgery is performed with general anesthesia.

An incision is made about two inches long on the forearm.

The radial sensory nerve is identified emerging from the deep tissues, between two muscles. This is the site of entrapment of this nerve.

The connective tissue that forms the roof of this tunnel, and which compresses the radial sensory nerve, is divided.

Now, when the forearm is turned so the palm is either up or down, there is no more pressure upon this nerve.

Local anesthesia is placed into the skin, so the top of your hand may be numb for a few hours, but there will be little pain after the surgery.

You can use your hand and fingers immediately after the surgery for your normal activities of daily living.

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#### WHAT IS RADIAL TUNNEL SYNDROME?

The radial tunnel is where the radial nerve crosses the elbow.

In this region, the radial nerve has a motor nerve branch that controls lifting the wrist and lifting the fingers.

Entrapment of the radial nerve in this location can cause aching in the elbow and the wrist, and weakness of grip.

Severe entrapment of the motor branch causes “wrist drop,” a form of paralysis, called posterior interosseous nerve palsy.

The brace worn to treat “Tennis Elbow” can cause entrapment of the radial nerve at the elbow, and can coexist with radial sensory nerve entrapment. The position of the wrist and forearm of the tennis player to the right shows the forearm pronated in the position that compresses the radial sensory nerve.



#### LEFT

A “Tennis Elbow” brace can cause radial nerve entrapment.

#### RIGHT

Wrist is pronated and can cause radial sensory nerve entrapment.

**WHAT ARE THE RISKS OF SURGERY?**

The published outcomes of the Dellon-approach to the treatment of radial nerve entrapment offer the best chance of success for relief of your symptoms. There are risks associated with every surgical procedure, such as the risk of anesthesia, bleeding and infection. Complications unique to decompression of the radial nerve are:

Unpredictable nature of the healing process (scar formation).

Painful scar due to entrapment of a nerve to the skin.

Remaining numbness over the back of the hand/thumb.

Remaining weakness in the wrist, and in grip strength.

Nerve regeneration can be painful.

It may take up to one year to achieve maximum relief.

**WHO SHOULD DO THIS SURGERY?**

Surgeons from the *Dellon Institutes for Peripheral Nerve Surgery*® have the most advanced training and experience doing this surgery, which offers you the best chance for success.

**BEING ACADEMIC IN PRIVATE PRACTICE** <sup>SM</sup>

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