

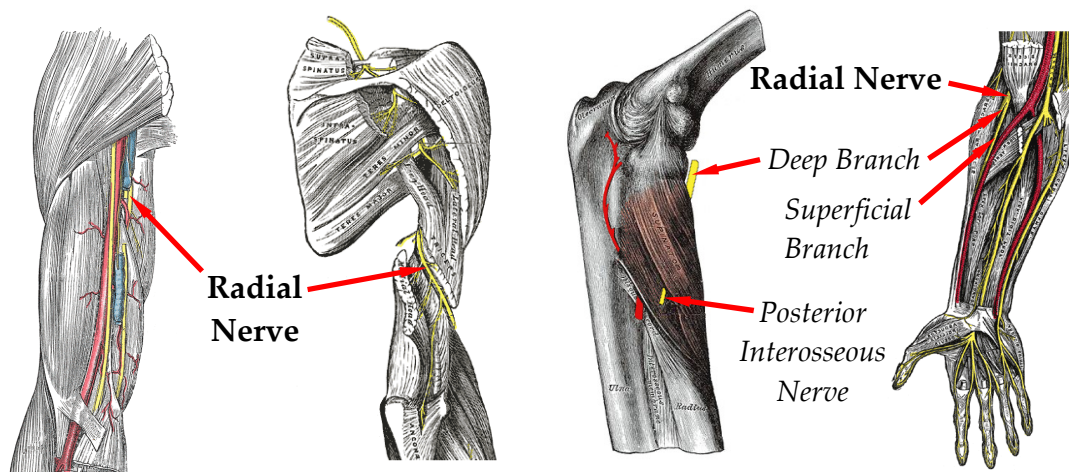
Radial Nerve Impinged by Extensor Carpi Radialis Brevis

The radial nerve of the arm has become trapped and compressed by a muscle in the forearm called *extensor carpi radialis brevis*. See Figure 3 overleaf.

(a) Anatomy

The radial nerve is the most frequently injured nerve of the upper extremity (arm). You can see its passage, including the passage of its branches (the deep and superficial branches and the posterior interosseous nerve) down the arm in Figure 1 below.

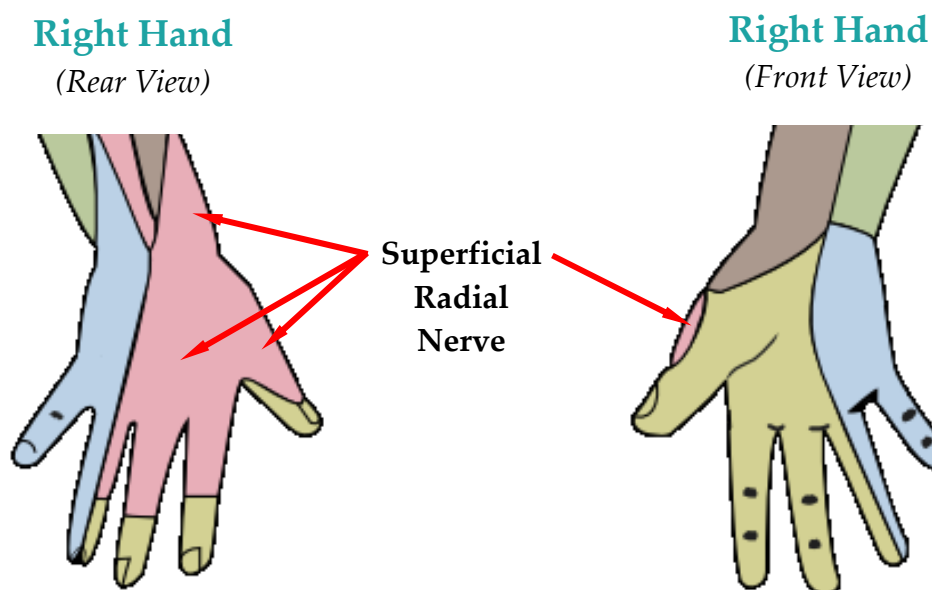
Figure 1: Radial Nerve in the Arm and Hand (Right Arm & Hand)



(b) Innervation by the Radial Nerve

The radial nerve supplies motor innervation to a number of muscles including the *elbow extensors* (parts of *triceps*) and *wrist extensors* (various). It also provides sensory perception from much of the back of the hand according to Figure 2 below.

Figure 2: Cutaneous Distribution of the Superficial Radial Nerve



(c) Impingement by Extensor Carpi Radialis Brevis

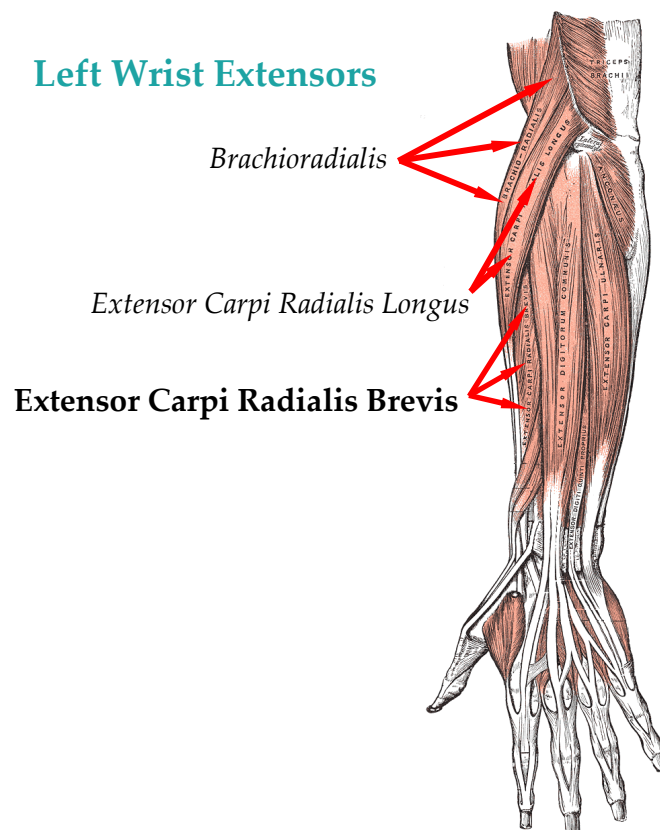
Extensor carpi radialis brevis may impinge the *deep branch of the radial nerve* (DBRN) or the *superficial branch of the radial nerve* (SRN) or *both*.

(d) Symptoms

Symptoms may include:

1. If the DBRN is involved you will have weakness in the wrist and finger extensors. That means you'll have some trouble bending the hand upwards on the wrist when the palm is down. However a muscle called *extensor carpi radialis longus* is not weakened as it is innervated by a sliver of the radial nerve arising at a point *above* the elbow. So when you do lift your hand up at the wrist when the palm is down, there will be *radial deviation* in the movement. That is, the hand will automatically move towards the thumb side.
2. There will be no weakness in the *brachioradialis* muscle because the motor innervation to brachioradialis arises *prior* to the forearm, above the elbow. That means you will have no trouble bending your elbow up when your hand is *halfway* between pronation and supination (hand forming a blade like in a karate chop).
3. You will however have numbness & tingling or pins & needles (paraesthesia) in the back of the hand according to the cutaneous distribution of the superficial radial nerve. See Figure 2 on the previous page.

Figure 3: Location of Extensor Carpi Radialis Brevis



(e) Treatment

Your practitioner will release the pressure on the nerve by loosening the extensor carpi radialis brevis muscle.