

**Strain/sprain** – Strain: an overstretching or overexertion of some part of the muscle.

Sprain: An injury to a ligament as a result of abnormal or excessive forces applied to a joint.

There are three grades of strain/sprains. Grade I, II, and III.

|                         |               |
|-------------------------|---------------|
| Grade I strain/sprain   | 1-50% tear    |
| Grade II strain/sprain  | 51-99% tear   |
| Grade III strain/sprain | Complete tear |

**Synonyms:** Muscle/ligament pull, muscle/ligament tear.

**Symptoms** include: localized tenderness at the injured site, changes of sensation around the injured area, pain with motion, loss of function, and possible swelling and/or bruising. A “pop” may be heard or felt at the time of injury with grade II and III strain/sprains.

### How is it diagnosed?

Strains and sprains are some of the most frequent conditions seen at a chiropractic office. There are over 600 muscles and 300 joints in the body. All are subject to injury.

- Muscle strains commonly occur in the lower back, neck, shoulders and hamstrings.
- Joint sprains commonly occur in the back, neck, knee, wrist and thumb.

A thorough history and physical exam is often enough to lead to an accurate diagnosis. X-rays may be used to rule out fracture. MRI may be used to determine the extent of the injury.

Grade I strain/sprains can be confounding for a patient. Often the initial injury is subtle and symptoms may not present immediately, only to feel pain hours or even days later.

### How is it treated?

Treatment depends on the grade of strain/sprain. Grade I and II strain/sprains can be treated with: Rest, Ice, Compression and Elevation (RICE).

**REST** - Do not use the injured area after the injury. The length of time needed to rest depends on the severity of the injury. During the rest period, immobilization may also be needed. A brace may be used to aid in immobilization.

**ICE** - It is important to place ice on the injured area. This may be in the form of crushed ice in a plastic bag or a commercial ice pack. Never place the ice or ice pack directly on the skin. Use a towel wrap. Keep on for about 20 minutes and remove. Repeat 20 minutes on, 20 minutes off, as long as you experience relief.

**COMPRESSION** - Apply pressure to the area with an elastic bandage. Do not wrap tightly enough to restrict circulation. This would not apply to neck injuries.

**ELEVATION** - Keep body part propped up above heart level as much as possible. This would not apply to back injuries.

In office treatment typically consists of manual therapy, massage, ice, and electrical muscle stimulation. Nutritional supplements can speed recovery time. Chiropractic adjustments may be used to reduce pain and prevent fibrous adhesions of the joint if no instability is present.

After R.I.C.E. and in-office treatment have been implemented to reduce pain and restore function, an exercise program should be implemented as soon as possible. Lack of exercise delays recovery, causes the injured tissues to repair poorly, and increases the chances of re-injury.

**Alternative treatments.**

Over the counter NSAIDS, Tylenol, Corticosteroid injections. Surgery may be required with severe strain/sprains.

**Prognosis** is excellent for minor strains/sprains. Grade I and II injuries usually resolve completely and without residual dysfunction. Grade III injuries may take 12 months or longer to heal, with joint dysfunction becoming permanent.

**Duration of care:** The following table indicates approximate healing time and gives treatment visit recommendations. This is only a guideline and is subject to change depending on a multitude of factors.

| Grade                   | Healing time.    | Treatment visits.                |
|-------------------------|------------------|----------------------------------|
| Grade I strain/sprain   | 1 - 4 weeks      | 6-12 visits over 2-4 weeks.      |
| Grade II strain/sprain  | 2 weeks - 1 year | 14-16 visits over 10-12 weeks.   |
| Grade III strain/sprain | 8 weeks - 1 year | Referred for surgical treatment. |