



Holladay Physical Medicine

4211 Holladay Blvd. – Holladay, UT 84124 – (801) 272-8471
Bruce Gundersen, D.C., DIANM.
www.holladayphysicalmedicine.com

CERVICAL SPINE INJURIES

Common causes of Whiplash, Resulting Injuries, Complications What to do if you have a whiplash injury

This Information is about this condition in general. Every individual has a unique presentation. Once you understand this information, consult the doctor on any specific questions about your condition.

WHAT IS A WHIPLASH NECK INJURY?

A whiplash neck injury is the involuntary thrust of the head and neck in any direction, and the resulting elastic recoil of the head and neck in the opposite direction, with injury to the surrounding and supporting tissues. Although the proper term for this type of injury is a cervical sprain or strain, the term whiplash will be used in this brochure as it has become so familiar.



1. COMMON CAUSES OF WHIPLASH

Common causes are automobile collision, a sudden jerk on one or both arms, a violent blow to the head or chin, a reflex jerking of the head due to fright or sudden noise, and any kind of fall that causes sudden forceful movement of the head and neck.

2. THE INJURY

The force causing the whiplash may result in concussion, confusion or lacerations to the soft tissues and may produce sprains, strains, subluxations and dislocations. Joint injuries and fractures to the bones are common.

Whiplash injuries may involve the nerves, arteries, spinal discs, spinal cord, ligaments, muscles, tendons, cartilages, sympathetic nerves, parasympathetic nerves, nerve ganglia, nerve plexes, and the brain.

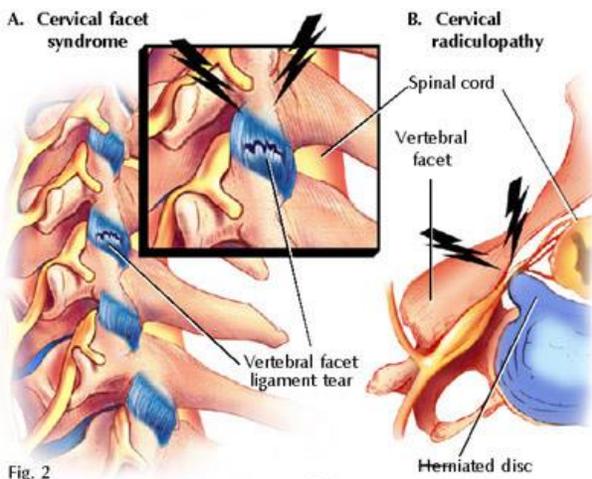


Fig. 2

3. DEGREE OF INJURY

The degree of injury depends mostly on the forces and direction involved. For example- a car weighing 3000 pounds traveling only 25 miles per hour creates a force equal to 3,450 pounds. This means that several tons of force is exerted on the victim's neck at the moment of impact.

The research crash council of the USAF demonstrated that the normal neck can withstand a forward snapping acceleration of 50 times the force of gravity before producing major injury, whereas a backward snapping acceleration of only 5 times the force of gravity can be tolerated.

Other factors affecting the degree of injury and disability are the length of the neck, weight of the head, age, gender, congenital anomalies and pathology.

NECK – The longer the neck the greater the possibility of injury.

HEAD – The heavier the head the more likelihood of injury.

AGE – The elasticity of the neck structures decreases with advancing age. The same injury tends to be more serious in the adult patient than in the spine of children or teenagers. In general – the older the victim the more likelihood of injury and disability.

GENDER – The gender of the victim is important since the female autonomic nervous system (supply to glands, blood vessels and internal organs) is more complex and sensitive than in the male.

ANOMALIES – A congenital anomaly (abnormal formation) usually results in a weak back. Naturally a whiplash superimposed upon a weak back causes more disability than the same injury on a normal back. Examples of abnormal formation existing from birth (anomalies) are congenital fusion of the vertebra (grown together), an incompletely developed vertebra exposing the spinal cord (spina bifida), cervical ribs, and extra ribs.

PATHOLOGY – Disease and aging processes affect the degree of injury. For instance, a whiplash type of injury is a pre-existent arthritis in the neck would tend to be more serious than the same injury imposed on a normal neck.

4. THE GOLDEN PERIOD

The first three weeks after the injury is called “The Golden Period of Treatment”. If the treating physician does not fully understand the whiplash type of injury, serious consequences may follow.

Unfortunately, ordinary doctors seldom understand the special threat that whiplash holds for the victim. Too often he/she only treats the victim for muscle spasm.

Whiplash is the type of injury that requires special knowledge and experience, and requires more of a doctor’s time than other types of injuries. Without proper care and understanding, severe and permanent injury may result.

However, recent developments in manipulative practice show that uncared for cases may still obtain a great deal of benefit even years after the injury.

TREATMENT

The careful management of this combination of conditions has proven to be very effective in restoring normal function to the injured areas. Consistent and complete compliance is the key. Treatment is in three phases: 1) the inflammatory phase during which a variety of symptoms come and go and which usually lasts about 3-6 weeks when treated properly. Treatment frequency during this period can be daily for 4-12 days and then three times a week for 3-12 weeks or more depending on complicating conditions or aggravations. 2) the restorative phase during which the relative positioning of the bones is accomplished and the ligamentous and other soft tissues are allowed to heal. Scar tissue may be minimized if this phase is treated properly. This may last for another 3-6 months and may overlap phase three. 3) The rehabilitation phase during which time the muscular coordination and compensatory mechanisms of the spine are restored to normal function. Treatment here is largely comprised of structured exercises and periodic spinal correction.

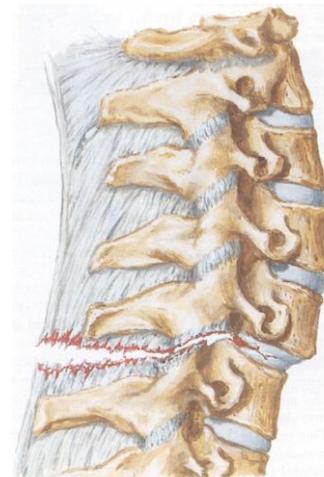
Treatment frequency is usually daily for 3-7 days and then three times a week for 3-6 weeks. After that, realignment of the vertebra must be performed to prevent eventual return of this condition. It can be accomplished in 30-60 days of reduced frequency management. Often once a week treatment is sufficient at that point to restore alignment. Thereafter, this condition can be reasonably avoided with monthly correction of spinal alignment.

After the first few days of treatment, you will be given a sheet of stretching exercises to do at home. This is to help reduce the treatment time and speed healing. It is very important for you to do these daily as prescribed. If you have any questions about them or difficulty or pain on performing them, please tell the doctor right away.

Several days following the initiation of treatment, more aggressive exercise routines will be proscribed for you. You will be taken to the rehabilitation center and instructed on how to use the computer monitored exercise routines specifically designed for this condition. The routines are monitored for completion and graduated in difficulty after certain numbers of routines have been completed. You will be expected to perform these routines after treatment during the initial part of the restorative phase and throughout the rehabilitative phase of your treatment. Our goal is to help you get well and stay well. We know from experience that most mechanical conditions return gradually over a period of months and become more advanced each time. The only way this can be prevented is with exercise. We expect you to be successful.

We offer treatment of these conditions at various levels for all patients. We expect you will follow this treatment plan through to its logical conclusion of restoration of complete function and rehabilitation. Our management system is designed to help remember all of your appointments and to be fully compliant with all of our recommendations. At any time, should you decide to discontinue the process, please us know so that we don’t become a bother.

COMPLICATIONS



that
you
just let

5. STRAINS, SPRAINS & FRACTURES

Ligaments are both flexible and elastic... allowing freedom of movement. However, if stretched beyond their elastic limits injury occurs. If the muscles only are involved, the condition is a strain. If the ligaments itself does not tear but the bone to which it is attached tears, an avulsion fracture occurs. These conditions are very different and require different methods of treatment. The healing time for each condition varies accordingly.

Injured joint ligaments heal with scar tissue, in which the elasticity is lost, resulting in loosened spinal joint. This loose joint becomes unstable and may result in traumatic arthritis.

Immediate disability follows injury to ligaments. Healing from the functional viewpoint is seldom perfect.

6. TRAUMATIC ARTHRITIS

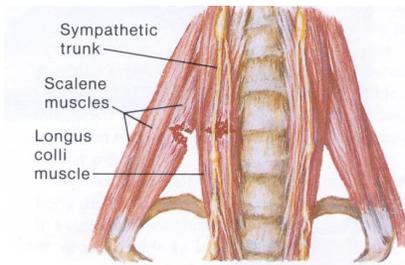
Any injury that stretches into a joint usually threatens the joint with traumatic arthritis.

The cartilage the touching surface of the joints may be torn by any violent twisting motion or impact. The cartilaginous surfaces may become devitalized, disappear, or become incongruous as a result of the severe backward and forward snapping movements of the whiplash.

The incongruity or loss of apposition of a neck joint is very painful and is known as traumatic arthritis. Thus, a sprain or strain of surrounding soft tissue of the joints can cause a relaxed or loose joint, resulting in degenerative (arthritic) changes at a later date.

7. MUSCLE SPASM

Muscles can be bruised or torn or over-stretched by a whiplash. This results in muscle spasm, loss of normal neck curve, and limitation of motion. Hemorrhages within the muscle may occur, and usually dissolve spontaneously.



Muscle injury should improve within several weeks. If it continues beyond a normal period then myofascitis sets in, which is an inflammation of the muscle and the adjacent covering (called fascia, which is an inelastic binding tissue). This causes a thickening of the fascia and additional limitation of movement.

The injured muscle and surrounding ligaments may be replaced by scar tissue – a condition that is called myofibrosis.

The inter-relationship of injuries should be realized. When muscle damage occurs such as hemorrhage, swelling, sprain, or strain, almost always the nerve supply is affected. Likewise, if there is a

compression of the spinal nerve root as it emerges from between the vertebrae there may be interference either with the motor or sensory function of the muscle.

So you can see that muscle injury may cause nerve damage... and nerve injury may cause muscle damage.

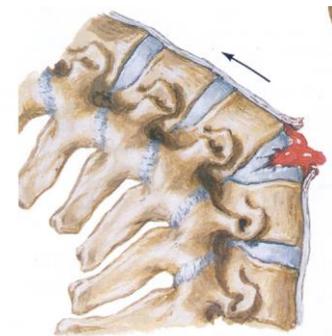
8. RUPTURED DISC

The violent movements of a whiplash may result in a ruptured disc.

Conservative health care should be pursued extensively before the victim undergoes surgery for a ruptured disc in the neck. The reason being that the closer one approaches the brain, the more dangerous the operation. Approximately 70 to 80 percent of ruptured disc cases respond to chiropractic care. Twelve to 18 months is the average disability.

9. NERVE ROOT COMPRESSION

Impingement or compression of the nerve root is one of the most common complications in whiplash. Nerve root pain is different from other types of pain. It is felt in the entire area that is serviced by the particular spinal nerve. known a “radiculitis” or radiating pain. Almost all whiplash cases involve nerve root compression. Nerve root irritation may also be caused by arthritic spurs digging into the nerves when the neck vertebrae are misaligned from whiplash, and the resulting muscle spasms. Other factors causing nerve root compression are fractures, swelling of the capsular structures and misalignment of the vertebral arteries.



It is

10. NERVE INJURIES

There are two types of nerve stretching injuries that result from whiplash. The first is that of an overstretching which does not interrupt the pathway of the nerve, but may cause interruption of the nerve impulses. This type of injury will recover quickly.

The second type of nerve injury is where the actual nerve fibers are overstretching to the point of tearing. This may require as long as a year to heal, and the nerve seldom recovers completely.

11. BRAIN and SPINAL CORD INJURY

Whiplash may cause concussion, confusion or laceration of the brain, and brain injury should be suspected in all cases where the victim is unconscious following the accident. Damage to the spinal cord within the spinal canal results in

injury to the body only below the point of damage. Concussion to the cord causes a transitory disturbance to the spinal cord function, with no permanent or local signs. The spinal cord may be injured by a contusion – in this instance residual signs remain, ranging from slight motor signs to complete loss of brain function.

12. INSURANCE

Conservative care is recognized as the treatment of choice for whiplash by more than 500 insurance companies. These include automobile liability, medical pay, and on the job injuries by workman’s compensation.

WHAT TO DO

If you are a victim of a whiplash injury consult a conservative health care practitioner as quickly as possible. He/she is a specialist in structural and spinal disorders. He/she will advise you frankly, sincerely, and honestly. Follow his/her directions to obtain maximum results at the lowest cost.

Should your case require radical care, you chiropractic physician will so inform you and arrange for consultation with specialists as needed.

SYMPTOMS OF WHIPLASH

CHIROPRACTIC and MEDICAL RESEARCH now link symptoms as listed below with whiplash type injuries. One or more of these symptoms often occur immediately. However, others may not develop until hours, weeks or sometimes even years following the injury.

Many patients having these symptoms are unaware or have forgotten about their accident.

Headache (One Or Both Sides)	Neck & Shoulders Feel Tired	Light Headedness	Irritability
Head And Neck Pains	Light Blindness	Shortness Of Breath	Poor Memory
Tension	Loss Of Balance	Low Back Pains	Inability To Concentrate
Muscle Spasms	Equilibrium Problems	Pain Between The Shoulders	Periods Of Depression
Stiff Neck	Loss Of Hearing	Cold Hands Or Feet	Fractures
Restriction Of Neck Motion	Linched Nerves	Excessive Sweating	Dislocations
Blackouts	Slipped Discs	Numbness Of Arms, Hands, Shoulders, Feet	Palpitation
Fatigue (Tiredness)	Muscle Tearing	Or Legs	Eye Strain
Extreme Nervousness	Neuralgia (Nerve Pain)	Loss Of Normal Spine	Tremors
Mental Dullness	Neuritis	Contours	Pallor
Muscle Swelling	Ringling Of The Ears	Increased Reaction To	Insomnia (Can’t Sleep)
Heaviness Of Head	Nausea	Drugs	Muscle Atrophy
	Gastro-Intestinal Symptoms	Anxiety	Rapid Heart Beating

Expectations

We understand that you have come here for help. We have spent many years learning the best ways to solve the problems of mechanical back and neck pain. We expect you to comply with our recommendations and follow our treatment schedule completely regardless of the treatment plan you have. We expect you to set all of the recommended appointments at times convenient for you and we expect you to keep all of them. We expect you to respond favorably and know that your 100% compliance is the determining factor. We also expect you to attend our next class on Absolute Spinal Health. The staff can give you a schedule of the next class.

USE OF PRESCRIPTION DRUGS

We do not prescribe drugs nor recommend their use if harmful side-effects are associated with your complaints. We also do not, in any case, recommend changes in the use of prescription drugs that a licensed physician has given you. If you believe alterations in those prescriptions are in the best interest of your health, always consult with the prescribing physician before making any changes.

NUTRITION AND SUPPLEMENTATION:

The ideal situation for nutrition in any injury or disease is first to eat whole foods, and to avoid processed foods, fast foods preservatives, refined carbohydrates and sugar. We have much information

on our web page under Absolute Health Clinic. The physical medicine modalities we will provide you will help reduce the symptoms in the time we have projected. If you want to heal, this step is something you will need to take.

Nowadays, even if you do all of those things, you need to realize that our food supply has been gradually depleted. The pure ingredients needed to maintain body function, metabolism and immunity have been drastically reduced. We recommend only whole food supplements. Studies are clear that synthetic vitamins and mineral supplements are not only not helpful to the body in most cases, but can be toxic. Don't expect them to take the place of what we recommend here. They will not help you sufficiently to heal properly. The following list has been prioritized to help you gradually begin to supplement your improved diet and provide your body with the ingredients it needs to restore or improve your immune response and then provide the raw materials in usable form to repair the damaged or diseased tissue. The degree to which you can implement these items will largely determine how fast you recover and more importantly whether or not you have a recurrence or relapse of the symptoms again soon.

These products are all produced by Standard Process. You may obtain them on line from Amazon or other distributors if you like or we can order them for you and save you an average of \$5 per bottle plus you can avoid shipping charges.

GENERAL DAILY SUPPLEMENTS

- Catalyn
- Tuna Omega-3 oil
- Calcium Lactate
- Trace Minerals B12
- Cataplex D
- Prolamine Iodine

SPECIFIC FOR THIS CONDITION

- Biost
- Glucosamine Sulphate
- Ligaplex II
- Calcifood

Specific dosages will be provided by the doctor.

We have many other specific items for a variety of health deficient conditions. Consult our web page or ask the doctor.

HOME REMEDIES AND MEDICINES

After the first 1-3 days when you should be using 5-8 minutes of cold packs, utilize moist heat packs on a daily basis during the first phase of treatment. 15 minutes is the maximum therapeutic dose for heat in this condition. The application may be repeated with at least 15 minutes of non-heat rest in between. This will help relax tight muscle fibers and bring blood to the region. Hot tubs and baths with Epsom salts provide temporary relief.

The use of over-the-counter medications for pain and inflammation may be seen as necessary at first depending on your pain level and tolerance. Understand that we depend on your natural immune response to function well in order to heal this disorder. Some pain relievers and most anti-

inflammatory medications shut of the inflammatory response which is what triggers your body's immune response mechanisms. If you need pain medicines of any kind to continue to function or to be able to do the exercise routines we have recommended, use good judgement in when you use them. We strongly suggest you consider ice packs for 5-10 minutes for pain relief and mechanical positioning of the injured areas to relive pressure and pain. The more you are able to do these procedures and avoid medications, the faster your immune response will be effective and the sooner you will be out of pain and begin healing. The sooner you can stop taking pain medication, the better it will be for your healing.

EXERCISES:

Exercises should be specific, performed at the right time and in a particular order. They should be simple and aimed at pain relief and stabilization at first. Seek advice from your chiropractic physician on when to do these exercises and how often. When performed correctly, rehabilitation exercises can be the key to avoiding multiple episodes of pain and maintaining the function of the muscles and joints.

Our goal here is to have you begin exercises as soon as the joint mobility has been restored sufficiently. Consistent and proper exercise rehabilitation will shorten your treatment time and help reduce recurrence of the same disorder.

We offer a video training featuring exercises specifically designed and proven effective if properly performed for the rehabilitation of this condition. These video files are available on our web page at www.holladayphysicalmedicine.com ---follow that link, then the exercise pulldown menu at the top center of the home page, choose therapeutic and then scroll down to:

Neck,

then also and review

shoulder

and perform them daily as soon as you can work it into your schedule. Along with the physical medicine we have recommended, it is the regular performance of these exercises that will get you well and keep you well.

Other Information

We offer a wide variety of health information at our web site. www.holladayphysicalmedicine.com All patients are welcome to use our information to improve your life and maintain your spinal health.

This information is provided to you as a health service by Dr. Bruce Gundersen, DC, DIANM. He is board certified by the International Academy of Neuromusculoskeletal Medicine and currently serves as chairman of the examination board for the Academy. He is also the President of the Utah College of Chiropractic Orthopedists and clinical director and chief clinician at Holladay Physical Medicine. He has practiced physical and regenerative medicine for over 40 years.