Whiplash

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$2.00
Nothing in this book is intended to constitute medical advice or treatment. Do not attempt to diagnose or treat your condition with any of the information presented here. Before utilizing or recommending any of the procedures outlined in this booklet, it is advised that you consult with your Doctor of Chiropractic. If you do not have a personal Chiropractor, please consult your local chiropractic association for a referral to one who has specialized training in human biomechanics and rehabilitation.

A special thanks to Brett Stokes, a very talented artist, for once again beautifully illustrating various concepts throughout this book. My excellent front office staff and Drs. Olinger and Archuleta deserve my deepest gratitude for their assistance in the tedious job of proofreading this book. As always, my wife, Jill, was constantly there with her support and suggestions:
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WHIPLASH BASICS

I see whiplash injuries virtually everyday in my practice. For me, this type of injury remains one of the more complex and serious of conditions that I treat. For those afflicted with this condition, “whiplash” remains a term that may be forever associated with pain and suffering.

To understand why whiplash can be such a devastating affliction, one needs to better understand what a whiplash really involves.

Whiplash results from a sudden change in movement of the head and neck relative to the rest of the body. Normally this movement is described in terms of acceleration (a speeding up) and/or deceleration (a slowing down). If these movements occur in a relatively gradual manner, then the head and neck do not move with a whip-like motion. However, if the speeding up and/or slowing down process is too rapid for a person to adapt to, then a whipping motion of the head and neck occurs. If this whipping occurs beyond the normal range of motion of a joint, then injury can happen.

This whipping motion, or whiplash, can occur from auto accidents, slip and falls, sports injuries, and almost any endeavor that involves a sudden jarring to the body. A whiplash, though typically occurring in a backward to forward plane of motion, can actually occur from many different angles. This whipping can occur even when the intensity of the jarring is relatively low.
A whiplash can do substantial damage to the body. This damage comes in two forms. The first is bone damage, such as fractures. The second involves soft tissue damage, which covers every other type of tissue in the body.

Most commonly injured by the whiplash is the supporting soft tissues of the head, neck, shoulders, back and jaw. These tissues include the muscles and tendons (tissues that provide movement), ligaments (tissues that prevent excessive motion), cartilage (tissues that act as cushions and allow smooth motion in a joint), the blood vessels (conduits for nutrients to the area), and the nerves (message transmitters to and from the brain). All of this will be explained in greater detail in the next chapter.
A CLOSER LOOK

The soft tissues of the cervical spine (neck) are the most commonly injured tissues in whiplash trauma. The muscles, tendons, ligaments, and cartilage that surround the neck region can be over-stretched and torn to a variety of degrees. To fully understand this point, it is necessary to understand what a normal—uninjured neck—is like.

Above is a drawing of a normal neck. Note the smooth, uninterrupted C-shaped curve formed by the seven cervical vertebrae (bones of the spine). The alignment of these bones is critical to the function of the cervical spine and the health of the entire body. The discs are the tissues between each vertebrae that act as shock absorbers and allow motion between segments. When uninjured, the discs of the human body will usually last a lifetime. Note how the spinal nerves exit from pathways between the vertebrae and come in close proximity to the discs. These nerves carry messages to and from the body and the brain. Thus, any problem with vertebral alignment or disc function can have a dramatic effect on the nerves, affecting the body and mind.
Holding these structures together are the ligaments, muscles, tendons, and other connective tissues. Ligaments are the prime stabilizers of this region, and prevent excessive motion between the vertebrae. Since ligaments have a poor blood supply they heal poorly when injured. The muscles, by contrast, have an excellent blood supply, and heal more rapidly than ligaments. However, the muscles of the neck and upper back, when whiplashed, often heal with a type of scar tissue that causes many secondary problems, prolonging recovery. This scar tissue is explained in greater depth on page 12.

Above is a drawing of a neck recently injured in a whiplash. Not all necks are injured to such an extent but this drawing shows many of the common effects of a whiplash injury. Note that the gentle C-shaped curve of the normal neck has been dramatically altered. The upper half of the curve is now straightened due to muscle spasm. In the lower neck, the ligaments and muscles have been over-stretched allowing one vertebrae to slide over the one below. The vertebrae are no longer moving in a proper manner and have taken on a position that irritates the spinal nerves. A disc has been torn by the whipping motion. The beautiful balance of the entire region has been permanently changed. How this occurs is shown on the next page.
Below are drawings showing how the previously mentioned injuries can occur.

The Extension Phase

The Flexion Phase
BREAKING THE RULES

A whiplash is unlike any other injury. For example, with a sprained ankle, you can usually expect the following scenario, even with a moderate injury:

1. The onset of pain and stiffness within 24 hours.
2. Progressive improvement after the first week.
3. Very limited number of symptoms.
4. Near-total resolution of symptoms within 6-8 weeks.

None of the above rules apply in the case of a typical whiplash. Instead, we have the following guidelines:

1. Pain and stiffness may not develop for weeks.
2. Recovery is highly variable, and its course is difficult to predict for even a day in the future.
3. Wide variety of symptoms are possible.
4. 45% of whiplash victims have significant symptoms several years after the injury.

In short, whiplash breaks all the standard rules.

But one rule stands. It is extremely important to get checked out as soon as possible after an injury. Failure to do so can significantly impede a person's recovery and may allow irrevocable pathology to occur. Do not settle for a cursory five minute exam. A thorough exam is needed to check out the wide range of injuries that can occur from a whiplash. Remember, a Doctor of Chiropractic is the soft tissue injury specialist.
ARE YOU MORE AT RISK?

Visualize six ordinary people, all sitting in the same vehicle. Now imagine that this vehicle is struck squarely from the rear by another auto. While it may seem odd, it is highly probable that each of the vehicle’s occupants will be injured to quite different extents. Some may receive no injuries at all. Others may be severely injured. If a whiplash was purely a matter of "heads in acceleration," then such differences in injuries would be difficult to explain. The natural question is to ask "Why so many different responses to the same forces?" A big part of the answer to this inquiry lies in the fact that certain people are more at risk than others.

There are a variety of factors that may make a person more at risk from the effects of a whiplash injury. The following list is but a brief outline of some of the more common reasons that generally increase one's likelihood of being injured. After reviewing these factors, it will be quite clear why it is often said that "no two whiplashes are ever really identical."

1. Being a female (generally have a weaker neck).
2. Having a long neck (it can whip more than a short one).
3. Having weak muscles in the neck (less support to prevent excessive whipping).
4. Having a stiff neck (the less pliable, the easier the tissues tear).
5. Having prior neck injuries (already weakened).
6. Having the neck turned at the moment of impact (generally results in asymmetrical injuries causing most of the force to hit one side).
7. Not having a functional head restraint in your vehicle (the head can then whip further back with the motion, thus doing more damage).
8. Having multiple impacts to your vehicle (multiple opportunities for injury).
9. Striking something within your vehicle (more opportunity for multiple injuries).
10. Not getting early treatment (secondary problems often develop that complicate the recovery).
SYMPTOMS

As stated, a whiplash injury can cause many symptoms. Some of these symptoms seem very obvious, while others are much more difficult to explain. The patient must keep the treating doctor aware of these symptoms so that appropriate diagnostic studies and treatment can be performed in a timely manner. The general rule is this: When it comes to whiplash trauma, many symptoms are possible and no symptom is too strange to discuss with your Doctor of Chiropractic.

The Modern Pandora's Box
HISTORY AND EXAM

Because a whiplash can cause so many different types and degrees of injuries, a thorough history and examination of each case must be performed. Even if one experiences a relatively mild jarring, or there are few, if any, symptoms, it is still important to get checked out by a Doctor of Chiropractic.

The history portion has nothing to do with famous characters or dates in a school history book. A history of the whiplash injury involves a complete detailing of many factors. The answers to certain critical questions will help dictate not only the extent of the exam, but also help direct the most appropriate type of treatment. In an auto accident, for instance, litigation may become a factor, thus creating an even greater need for a complete history. Here's just a brief listing of some of the questions asked in a typical auto case case:

1. When did the injury occur?
2. From what direction did the impact occur?
3. What was the speed of vehicles involved?
4. Were you wearing a seat belt?
5. Was there a head restraint in your vehicle?
6. How was your head positioned at the time of impact?
7. Did you anticipate the impact?
8. Did you strike anything inside the vehicle?
9. Did you black out at the moment of impact?
10. Did you receive any emergency treatment?
11. Have your symptoms increased or decreased?
12. Have you experienced any numbness or tingling?

And the above questions pertain just to the immediate history. There is a much more extensive list of questions regarding the past medical history. Obtaining the past history of a patient is vital to understanding the effects of a whiplash, since the new injury may be superimposed upon a previously weakened body.

A thorough examination is always required in whiplash trauma. An exam typically involves many aspects. There is inspection, palpation, percussion, instrumentation, and range of motion studies, as well as orthopedic, vascular, strength, and neurologic testing. An examination of areas outside the region
of chief complaints is also quite common, since whiplash trauma is notorious for widespread effects.

What is depicted below are some of the examination techniques commonly employed by a Doctor of Chiropractic.

EXAMINATION DETERMINES THE CAUSE

PALPATION

NEUROLOGIC

INSPECTION

INSTRUMENTATION

ORTHOPEDIC

PERCUSSION

RANGE OF MOTION
SPECIAL TESTING

It is not unusual for a whiplash victim to require specialized diagnostic testing. This is especially true when the Doctor of Chiropractic suspects significant injuries to bones or nerve tissue. Fortunately, we live in an era of sophisticated electronics in which we can measure things inside the body without the need for invasive surgery.

MRI (Magnetic Resonance Imaging) and CT (Computerized Tomography) provide a picture of the inner body with far greater detail than is possible with a standard X-ray. The soft tissue, the main site of injury for most whiplash trauma, is well visualized with these methods. A radiologist typically interprets the findings of these specialized studies in a report to the Doctor of Chiropractic.

When nerve tissue may be injured, the source of the irritation or compression can often be localized with specialized electronic devices. Tests with initialized names such as EMG, NCV, EEG, and SSEP, are commonly employed, depending on the exact nature of the suspected injury. The results of this testing are usually interpreted by a neurologist or orthopedist, and then forwarded to the treating doctor.

Occasionally, highly specialized muscle testing, sometimes in conjunction with minimal injections of anesthetizing agents, can localize the cause of a problem. This is especially true when one problem is superimposed upon another. Once again, the results from this testing are summarized and provided to the treating doctor.

When the results are in, the treating Doctor of Chiropractic will clearly explain the findings to the patient. This communication is vital in maintaining a high level of patient rapport. Decisions regarding future testing or referral, if needed, are made in conjunction with the patient's desires. An experienced doctor typically has already established a network of highly qualified professionals who are available to assist in the recovery of the patient. Help with referrals within this network can eliminate much of the difficult guess work in deciding whom to see and what to do next. The patient is not alone in this process.
SCAR TISSUE

As stated, a whiplash involves traumatic forces that can over-stretch and tear the soft tissues of the body. What replaces the injured tissue is far different than the original. This replacement is called scar tissue. It is inferior in many ways.

**More PAIN Sensitive**

The scar tissue that forms after whiplash trauma is not inert. The body's healing process typically creates a scar that is surrounded by many more pain nerves than the original tissue. Initially, this biologically induced hypersensitivity may help a person protect an injured area more easily, but the long-term result is less beneficial. Any tissue that is more sensitive to pain than it needs to be, especially if utilized quite frequently, can literally be a chronic pain in the neck, or head, or shoulders, or anywhere else where the scar may have formed.

**Less Resilient**

The scar is meant to be tough tissue. Unfortunately, it is too tough. It does not give like the original tissue. This lack of resiliency causes stiffness in the muscles. It also causes abnormal contraction patterns in the muscles that may develop into chronic spasms, trigger points, fibrositis, or other complications that are explained in the next chapter.

**Less Adaptable**

The scar just cannot adapt well to the typical activities of daily living. Prolonged fixed postures, repeated motions, cold weather activities, normal chores, and other such minimally demanding endeavors can all lead to flare-ups of symptoms. One must realize that the scar was made to fill a gap between injured tissues, and not made to accommodate one's lifestyle.
COMPLICATIONS

Some whiplashes heal relatively rapidly, sometimes in as little as six to eight weeks. Other whiplashes take many months or even years to reach a level of maximum improvement. What often explains this enormous difference in recovery times is whether or not a complication develops.

A complication, as used here, means a problem that develops later than the other soft tissue problems, but is still the result of the original trauma. It is very difficult to predict with any degree of confidence which complication, if any, a given person may experience. However, it appears that a person suffering a whiplash is more likely to experience complications if he or she does not obtain treatment in a timely fashion.

There are many possible complications from whiplash, but only four are reviewed. Trigger points, fibrositis, neurovascular compression syndromes, and delayed instability problems are all relatively common complications.

The first three complications—trigger points, fibrositis, and neurovascular compression syndromes—are often the result of prolonged muscle spasms in a given region. The spasms prevent health-giving nutrients from getting into an area and cellular waste products from getting out. Thus, the region of chronic spasm is both starved and polluted. This "double whammy" tends to make the muscle even more irritated and even more likely to remain in spasm.

If the focal point of the chronic spasm happens to occur in certain areas of the body, then a "trigger point" may result. This trigger point is not only quite tender to the touch, but it demonstrates a characteristic pattern of pain when pressed upon. In fact, the area of pain is often quite distant from the trigger point itself. This is called "referred pain" and is one of the reasons a Doctor of Chiropractic may treat one area of a patient's body as a means of helping another region.

If a chronic spasm persists, especially in women, then a "nodular area of exquisite tenderness" may develop. In this case, there is typically no referral of pain, only an area of
tightness and soreness that is highly affected by such factors as postural abuse and temperature changes. Here, the muscle fibers have formed small adhesions (spider web-like scar tissue) between muscle fibers and their surrounding tissues. This condition is often called "fibrositis".

Neurovascular compression syndromes is a fancy name for a condition in which the nerve and/or blood flow get compressed, causing part or all of a limb to experience unusual symptoms. There may be numbness, weakness, and/or a feeling of heaviness in the arm. These symptoms may be present only when the arm is in a certain position. When such symptoms were not present prior to a whiplash, but show up after the injury, then muscle spasms are quite often again the problem. These spasms occur as a result of the mechanics of the injury and gradually intensify in certain regions that happen to be in a position where the nerve/vascular flow can be interfered with.

Delayed instability problems cover many types of complications of whiplash trauma. The problems that occur under this classification often show up after the muscle spasms finally let go. Without the spasms for stability, instability can manifest. A bone may slip away from its torn ligament support or a disc problem may be revealed because the area is finally moving in such a way that allows the disc to irritate a nerve.

All of the above complications can cause a significant delay in the recovery of a whiplash injury. Constant vigilance by the treating Doctor of Chiropractor can help detect and treat these complications as soon as they begin to manifest. This vigilance, combined with early treatment, are the best means to the fastest possible recovery.
TMJ SYNDROME

The term TMJ refers to the "temporal mandibular joint". A person actually has a TMJ on each side of his or her jaw, just in front of each ear. This joint complex is unique in that everytime one opens the mouth, each TMJ must work in perfect unison. This synchronous motion can be severely interfered with by a whiplash injury.

With the whipping motion of the head, there is the potential for two methods of TMJ injury. If the head whips forward, the lower teeth can be jammed up into the upper teeth, which may cause TMJ trauma. If the head is whipped backwards, then jaw may remain relatively motionless as the head flies backwards. This action could cause a forced "over-opening" of the jaw, causing major stresses on the TMJ.

Doctors of Chiropractic are trained to investigate the TMJ at the time of the examination. As with so many other symptoms of a whiplash, it is not uncommon for this problem to show up weeks after the original trauma. To help alert the doctor to this delayed onset of TMJ symptoms, it is vitally important for the patient to report any popping, clicking, locking, or abnormal motions of the jaw. Whenever such symptoms occur, a referral to a TMJ specialist may be required.

A TMJ specialist may recommend special x-rays and fashion a bite splint to help relieve pressure on the jaw joint. This splint is utilized for a period of time, often in conjunction with some eating restrictions. If special therapy is required, a Doctor of Chiropractic can usually perform such care.
FUTURE PROBLEMS

As devastating as a whiplash may be in the first weeks or months after an injury, there is often a greater devastation that lurks in the future. The damage done to the soft tissues can cause an insidious process of progressive degeneration to occur. In fact, one prominent study showed that a person injured by whiplash trauma is six and one-half times more likely than the general population to undergo degenerative changes in the first seven years alone. These changes take on many forms and are outlined below.

First, there are chronic subluxations that result from the increasingly abnormal motion of the spinal joints. This causes extra wear-and-tear on the spinal joint surfaces and the surrounding tissues, leading to irreversible breakdown of the tissues.

Second, there are arthritic changes. These can result in erosion of the joint surfaces and bony spurring. Such changes can cause a gradual increase in pain and stiffness, along with interference to the nerve and blood supply to the region.

Third, there is disc pathology. The cushion-like ability of a spinal disc is gradually destroyed, leading to a decrease in height, less motion, and greater nerve interference. As the injured disc dies, the surrounding discs then begin to breakdown.
THE MEDICAL APPROACH

Most people already know enough about chiropractic to realize that it is essentially a nondrug, nonsurgical approach to healing. A Doctor of Chiropractic typically utilizes a variety of conservative means to promote natural healing. Spinal manipulation, physiotherapeutic modalities, nutritional supplements, corrective exercises, stretches, and orthotics are just a few of the means employed. Whatever combination of conservative approaches is used by the Doctor of Chiropractic, the goal remains to treat the cause of the problem, not just the symptoms.

By contrast, the medical approach emphasizes the control of symptoms through the use of drugs and surgery. In the case of whiplash injuries, the standard medical approach is to rest, immobilize, and provide symptom suppressive medication. This type of care is not supported by recent research. In fact, this standard medical approach may represent one of the least effective means of treating whiplash injuries. For instance, in one study, 45% of patients treated by the typical medical means still had significant symptoms long after settlement of their whiplash case. Early manipulation of the cervical spine is far more effective.

Don't be confused. For almost all soft tissue injuries, a well trained Doctor of Chiropractic is your best choice.
Many Doctors of Chiropractic elect to use various therapies to assist in their treatment of the injured patient. Such therapies are often helpful in reducing symptoms and speeding the healing process. When used properly, these therapies—in conjunction with spinal manipulation—can often completely eliminate the need for any medications and make the recovery process more complete.

The precise type of therapy the Doctor of Chiropractic elects to use will depend on the nature of a patient's injuries and how he or she, as an individual, responds.
SPINAL MANIPULATION

Unique to chiropractic is the art of spinal manipulation. Spinal manipulation is the process of relieving nerve interference by restoring normal motion to dysfunctional joints. It is a skill developed over many years of college training and clinical practice. By comparison to medical procedures, it is extremely safe. Its effectiveness in treating joint dysfunction caused by whiplash has been well documented in many studies. Furthermore, this process is repeatedly verified everyday in thousands of chiropractic offices throughout the world.

In order to understand why spinal manipulation is so useful in the treatment of whiplash trauma, one must understand a little about how our spinal joints survive. As you may be aware, all living tissues require a steady supply of nutrients to prevent premature decay and death. The bones and soft tissues that comprise the joints of one's spine are no different in this regard. Nutrients are generally delivered via the network of blood vessels pervading one's body. Unfortunately, the adult spinal column has a vascular system that is unable—on its own—to keep up with the demands of this region. Help is needed.

This help comes from movement of one's spine. As one bends, twists, and stretches his or her spine, a life-giving process occurs. The act of movement helps to "pump" surrounding nutrients directly into the cells. Without such a process, these spinal cells would die. Furthermore, without such a process, cellular waste products would build up and cause premature degeneration. But it is not enough to just move the spine to help prevent this degeneration. Certain motions are more proper than others for the spine. If one area is moving too little (hypomobile) or too much (hypermobile), there exists a problem. The detection and treatment of such conditions is best done by a Doctor of Chiropractic.

Hypomobile joints are best treated by gentle spinal manipulation. By "freeing up" joint fixations, an injured joint is in a position to heal more properly and to minimize future degenerative changes. One treatment with such therapy is rarely the total answer in whiplash trauma. Many treatments are often needed, especially when there are complicating factors involved.
REHAB

Rehabilitation, or rehab as it is typically abbreviated, is a vital aspect of a successful recovery process. An effective rehab program makes it possible for the injured person to return to near-normal functioning as soon as possible. If performed regularly, it also helps minimize future degenerative changes. Rehab falls into at least three basic categories.

The first is RANGE OF MOTION rehab. Here, the goal is to obtain normal, painfree motion for each injured joint. Generally, the injured muscles are tight, especially after a whiplash, and certain motions may be painful and/or significantly limited. Doctors of Chiropractic, as spinal specialists, know that proper motion is absolutely essential to the health of spine. Along with spinal manipulation, special motion exercises and stretches are utilized to save the whiplash affected regions by restoring proper motion.

The second is PROGRESSIVE STRENGTHENING rehab. Here, the goal is to build up the supporting tissues, mainly the muscles and ligaments, that have been overstretched or even torn by the whiplash. This strengthening must be done in a slow and highly specific manner so as to build the proper muscles in the proper way. Without such precise rehab, reinjury is likely and joints may become weak, loose, and break down over time.

The third is POSTURE CORRECTION rehab. Here, the posture of the patient is improved so as to place less stress on the injured regions. The procedures used to accomplish these postural alterations are typically quite simple. All static and dynamic postures must first be reviewed. Then the right posture correction program can be designed.

Common to all three of the rehab categories is the need for persistence in their utilization. Rehab never truly ends.
EXERCISES THAT HELP HEAL

WARNING: Before performing any of the following exercises, it is advised that you consult with a health professional trained in rehabilitation and exercise physiology. One or more of the following exercises may not be appropriate for your condition or problem, and could cause injury. Ask your Doctor of Chiropractic for his/her opinion.

In recommending appropriate rehabilitation exercises, it is important to first accurately assess your needs. Areas that are painful, overly tight, weak, and/or in someway dysfunctional, need a specific exercise regimen to address these problems. As with any exercise program, there are a few basic guidelines:

1. BEGIN SLOWLY-----Remember that you are attempting to rehabilitate relatively delicate soft tissues. These injured tissues are not as strong or as resilient as they were prior to the whiplash.

2. PAIN EQUALS STOP-----If you experience pain or other abnormal sensations, stop the activity and discuss the situation with your Doctor of Chiropractic.

3. REVIEW YOUR FORM-----Regularly monitor the performance of your exercises to make sure they are done correctly. An exercise performed incorrectly may cause problems.

4. MAKE YOUR EXERCISES A HABIT-----Performed on a regular basis, your exercises become part of your daily routine, just like brushing your teeth.

5. STICK WITH IT-----The beneficial effects of exercise are rapidly lost without regular performance of the routine. It is important to continue doing your rehab exercises on a regular basis, even when you are feeling fine. If motivation is a problem, please feel free to use the Dr. Gary Wonder Method. With this system, you obtain maximum motivation because every time you fail to perform as directed, you must send me a check for $20.00. (Just kidding!)
POSTURE CORRECTION
AND
REHABILITATION EXERCISES

PLEASE READ THE PREVIOUS PAGE BEFORE
ATTEMPTING ANY OF THE FOLLOWING EXERCISES.

For the Neck Region

Perform indicated exercises ____ per day, every day/every other day.

1. SHOWER STRETCH:
While standing securely in a shower, let the hot water beat down on your neck and shoulder, while holding your head as shown. Repeat on opposite side. Repeat: ____X, Hold: ______ sec.

2. ISOMETRICS:
In each of the 4 positions shown, use your hand(s) to push against your head while statically resisting with your neck muscles. Repeat: ____X, Hold: ______ sec.

3. BED STRETCH:
Lie flat on your back and hang your head over the edge of the bed as shown. Gradually increase the duration of this stretch, but begin as indicated below. Repeat: ____X, Hold: ______ sec.

4. SPECIAL STRETCH:
Rotate your head to the left/right and then extend your head backwards. The repetitions shown is the number of times it is to be done spaced throughout the day. Repeat: ____X, Hold: ______ sec.
For the Neck Region

Perform indicated exercises _____ per day, every day/every other day.

5. BED EXERCISE #1:
Lie as shown and then slowly raise your head upwards. Then slowly return your head to the starting position.
Repeat: _____X, Hold: ______sec.

6. BED EXERCISE #2:
Lie as shown and slowly raise your head up until your chin is near your chest. Then slowly return your head to the starting position.
Repeat: _____X, Hold: ______sec.

7. BED EXERCISE #3:
Lie as shown and let your head tilt to the side. Then slowly lift your head against the force of gravity as you move in the opposite direction. Slowly return.
Repeat: _____X, Hold: ______sec.

8. WALL LEAN:
Stand as shown, with your head against the wall and your heels 12 inches out. Keep your body straight and do not arch your back or neck.
Repeat: _____X, Hold: ______sec.

9. HEAD RETRACT:
Stand or sit and hold your head in a relaxed position. Then retract the base of your head as far back as is comfortable. Return to the starting position.
Repeat: _____X, Hold: ______sec.
ABOUT THE AUTHOR

This book, "Whiplash," is presented by Dr. John M. Mooney.

The author is a chiropractic orthopedist and a State appointed Qualified Medical Examiner. He frequently lectures on the subjects of biomechanics and soft tissue injuries. Dr. Mooney has also conducted several seminars on the treatment and rehabilitation of injured athletes. He is a former President of the Eldorado County Chiropractic Association and is a current Examining Commissioner for the State of California.

His clinical practice began in 1981 and he presently practices at Premier Healthcare, located in Placerville, California. He specializes in diagnosing and treating soft tissue injuries, especially those resulting from auto accidents. As a respected expert in soft tissue trauma, he is often called upon to provide second opinion evaluations on those individuals injured at work or as a result of automobile accidents.