# MD Consulting Services LLC

Physicians Helping Attorneys Helping People™

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# Newsletter

November 2017

## This Month's Question

## Are Whiplash Injuries Suffered at Low Speeds "Real"?

## MD Consulting Services Answer

In a classic article W.H. Castro showed that whiplash injury can occur in collisions at speeds found in common carnival bumper car rides. The limit of harmlessness was between 4.8 mph and 9 mph. Here's why:

When one motor vehicle strikes another from behind, mechanical forces are transmitted from the striking vehicle to the struck vehicle. These forces are then transmitted to the occupant(s) of the struck vehicle. Immediately after impact (about 150 milliseconds), the cervical spine contorts into an S-shaped curve. In this configuration, the cervical spine, rather than simply being curved to the front in a normal C-shape, as it would normally be at rest, takes on an altered shape:

- The lower part of the cervical spine moves into extension (bent backward)
- The upper part of the cervical spine moves into flexion (bent forward)

When whiplash occurs, the lower part of the cervical spine moves well beyond its normal range of motion, causing the potential for injury to the structures in that area. The upper part of the cervical spine also moves beyond its normal range of motion, but to a lesser extent.

There is an inherent stabilization response in the cervical spine that helps protect it from potential whiplash injury:

- The nervous system detects the presence of the impact; and

- The muscles of the cervical spine, under the direction of the nervous system, contract quickly to try to minimize the effects of the impact on the ligaments and discs.

If this stabilization response is working efficiently, there is a greater likelihood of protection against whiplash with less potential for whiplash injury. But if the response is inefficient, whiplash injury is more likely.

There are several factors that affect the efficiency of the stabilization response during whiplash, some of which are within our capacity to control, others of which are not. These include:

1. Posture at impact
2. Overall physical condition
3. Awareness of coming impact
4. Gender

## How posture at impact affects a whiplash injury

The posture in which a person is sitting at the moment of impact helps determine the efficiency of the stabilization response that will affect the severity of the whiplash injury. Sitting in a correct posture promotes an efficient stabilization response. Sitting in a poor posture, particularly a "slumped" type posture, promotes an inefficient stabilization response.

## How overall physical condition affects a whiplash injury

The better conditioned the body is in general, the more efficient the stabilization response will be. This particularly relates to the condition of the nervous system, as a well-functioning nervous system is essential to a proper stabilization response.

## How awareness of coming impact affects a whiplash injury

Perhaps the most important factor that affects the efficacy of the stabilization response in relation to whiplash is awareness of the impending impact.

*Scenario 1:* Aware of impending impact. This person is able to automatically prepare the stabilization system to respond quickly and efficiently.

*Scenario 2:* Unaware of the impending impact. This person cannot prepare the stabilization system, thus slowing the response and decreasing its efficiency. This person is likely to sustain greater whiplash injury than is the person who is aware.

This may help explain the findings of some studies that have shown a passenger in a struck vehicle is likely to sustain greater whiplash injury than the driver. The driver is more likely to see the vehicle coming in the rear view mirror.

## How gender affects a whiplash injury

Women in general are more frequently and more seriously injured by whiplash than men due to the differences in muscular bulk and the female's smaller bony structures. These factors result in less protection of the cervical spine to the abnormal forces such as those that occur in a whiplash-type of injury.

## How other factors affect a whiplash injury

Risk factors influencing prognosis of a whiplash injury

- Symptoms persisting beyond 6 months. (43% failed to recover on average)
- Significant ligament, disc, nerve, or joint capsule injury.
- Delay in initiating treatment
- Need to resume treatment for more than one flare-up of pain.
- Occupant age over 65
- Head restraint more than 2" away from occupant's head.
- Occupant in a small car
- Alcohol intoxication at time of automobile accident
- Pre-existing x-ray evidence of degenerative changes
- Prior whiplash injury
- Prior cervical spine fusion
- Patient having initial radicular (arm pain, numbness, tingling) symptoms
- A cervical collar used for more than 2 weeks

## A common misconception about whiplash injury

A common misconception about whiplash injury is that if the vehicle does not sustain substantial damage in a low speed impact, then whiplash injury to the occupant does not occur. In reality, low impact collisions can produce higher dynamic loading on the

occupants because the lack of crushing metal to absorb the forces results in a greater force applied to occupants within the vehicle.

## Let Us Know How We Can Help You

- On and off site review of case validity and value
- Help with strategies to promote medical theories
- Interpretation of meaning, or lack thereof, of medical reports & records
- Table-side deposition assistance
- Referral to appropriate expert medical witnesses
- Medical  research
- Facilitation of communication with clients, families, professionals and service & governmental agencies
- Case Coordination-New Service**

**We've recently gotten a lot of feedback asking us to help with case coordination in cases valued at $25,000-$50,000.  Typically, these cases require 2-4 hours of our time and we often pick up medical issues not previously recognized that can add value, new theories and "game planning".  We have purposefully kept our fees low to allow you to have us review these cases at the o*utset* of your representation while controlling your expenses.

## Contact Us

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**P.S. ---Please pass this Newsletter along to your colleagues if you found it helpful.**

**P.P.S. ---Think about having us present our free One Hour, One Credit CLE class for your firm.  We can present at your office.**