

**K**inesiology, also known as human

kinetics, is the scientific study of human movements. Kinesiology addresses physiological, mechanical and psychological mechanisms. Applications of kinesiology to human health are seen in biomechanics, orthopedics, and rehabilitation such as physical and occupational therapy.

Biomechanical experimental data indicate that car accidents with no vehicular damage are unlikely to cause injury to the occupants. A rear end collision is most likely to injure the neck, since the thoracic and lumbar spine are protected by the seat and restraints. Unless a headrest is positioned correctly, hyperextension is prevented only by facet joints, ligaments, and to a lesser extent, muscles and other soft tissues. In front end collisions, the neck suffers less injury because flexion is limited by the chin hitting the chest, and muscles and ligaments are further from the pivot point at the back of the head.

Disk herniation in the cervical spine is always preceded by degeneration of a disc (due to the aging process). Disk herniations are uncommon in front and side impact automobile accidents even those severe enough to cause other serious spinal injuries. Only a combination of lateral bending, hyperflexion and severe compression can result in disk herniation. This combination of movements can occur during heaving lifting, but rarely occurs in the spine during vehicular accidents.

Although an automobile accident is unlikely to cause disc herniation, it could cause herniation of a previously degenerative disk. Comparison of pre-injury and post-injury MRIs can objectively

determine what abnormality is due to the injury.

For a given occupant, the likelihood of injury is greater as the speed of the impacting vehicle increases. Likelihood of injury to the occupant is also affected by various internal and external factors. Internal factors include the occupant's sex, weight, height, age and musculature, as well as any preexisting arthritis. External factors include the relative mass and velocity of the vehicles, as well as the type of bumper, restraint system, headrest and seat.

A legal nurse consultant can be beneficial to any attorney with a focus in person injury. My LNC services in personal injury litigation include:

1. Conversion of medical record data into a user friendly case summary or chronology
2. Defining the severity, residual effects, long-term outcomes and costs or losses associated with injury
3. Determining the reasonableness of alleged mechanisms of injury, residual deficits and medical expenses
4. Investigation of nontraumatic etiologies of the alleged injury and residuals
5. Drafting the medical portion of the settlement brochure
6. Summarizing medical literature or research
7. Attending the DME and report findings
8. Summarizing depositions and correlating statements to facts in the medical records
9. Locating experts