Auto Damage and Passenger Injury

Experience affirms that automobile insurance company claim adjusters, defense attorneys, and defense medical/chiropractic examiners maintain that an individual within a vehicle involved in a collision cannot be injured if their vehicle sustains only minimum structural damage. Yet there is no doubt that individuals involved in minimum structural damage collisions develop symptomatology consistent with whiplash type neck distortion soft tissue injuries. Practicing health care providers, who examine "whiplash" patients, document findings that are consistent with occult soft tissue trauma. Alterations of segmental motion, alterations of joint end play, abnormal regional posture, alterations of normal tissue textures, abnormal sensitivity to local pressure, etc… are some of those findings.

Despite adamant claims by patients that their symptoms are genuine and by doctors that their findings are real, the insurance company perspective is that the patient's prime objective is secondary gain and that of the doctor's is greed. The mathematical principles of collision physics are complex and unique for each accident. Yet they can be simplified, as many of the forces involved are so small that for practical purposes they are negligible. Importantly, these principles often support the position of the patient and their doctor.

1998 Yoganandan et al. Cervical Spine Vertebral and Facet joint kinematics under whiplash. Journal of Biomechanical Engineering 120:305-307.
Yoganandan et al applied reflective targets to adjacent facet joints to track motion during whiplash using high speed video. They commented that, "Neck injuries secondary to whiplash during rear end vehicular crashes have become a national and international problem. They often result in no discernable radiographic trauma. In contrast, soft tissue damage such as excessive deformation is an expected outcome of these loading sequelae," and proposed that compression and sliding motions of the facet joints might lead to joint fiber excitation which could be productive of pain, while the head lag portion would allow head translations producing soft tissue injuries result in occipital headaches.

1955 Severity et al. Controlled automobile rear-end collisions—an investigation of related engineering and medical phenomena. Medical Aspects of Traffic Accidents, Proceedings of the Montreal Conference pp 152-184.
1955 Severity et al. Controlled automobile rear-end collisions—an investigation of related engineering and medical phenomena. Canadian Services Medical journal 11:727-758.
1958 Severity et al. Automobile barrier and rear-end collision performance. Presented at the Society of Automobile Engineers summer meeting, Atlantic City, NJ, June 8-13.
Severity's group were the first to show that the acceleration of the human head in low speed rear impact collisions could be up to 2-3 times or more higher than the occupant's vehicle. This is due to the unique and complex occupant-vehicle coupling of this type of crash.