



Let the evidence speak®

injury biomechanics

MEA's Injury Biomechanics group combines specialized knowledge of injury, anatomy and human performance with fundamental engineering mechanics to determine how injuries are caused and prevented.

In order to assess injury causation, we compare the forces applied to the body during an event to the forces required to generate a diagnosed injury. We incorporate modifying factors like age, gender, medical history and occupation to quantify a specific individual's exposure and tolerance. Our goal is to provide clients with solid, science-based answers that stand up in court.

Our engineers have advanced degrees in injury biomechanics and have conducted laboratory tests on biological tissues. This combination of education and hands-on experience allows them to better understand and apply the scientific literature to the real-life events and injuries in our clients' cases.

MEA's Injury Biomechanics group conducts research related to topics that range from head to toe: from studying brain injury, concussion and helmets, to measuring shoe/floor friction during slip and falls. We publish our research in peer-reviewed biomechanical, clinical and safety journals to ensure our work is properly vetted and widely distributed to the relevant scientific communities. Our research puts us at the leading edge of knowledge on a wide range of injury and safety-related topic, and has generated experimental capabilities that can be used to answer specific case-related questions.

The Injury Biomechanics group often collaborates with MEA's other practice groups to build a complete picture of an incident and the resulting injuries.

Motor Vehicle Crashes

Injury causation

Seatbelt effectiveness

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Exposure/risk comparisons

Helmet effectiveness

Occupant kinematics

Driver identification

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Crash survivability

Sport, Recreation & Playgrounds

Bicycle and diving accidents

Sports and safety equipment

Product failure

Amusement park incidents

Exercise equipment

Playground structures and surfaces

Slip, Trip & Fall

Injury mechanics

Stairs, ramps and handrails

Code compliance

Property standards

Obstacle avoidance

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