

Potential wrist ligament injury in rescuers performing CPR

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Potential wrist ligament injury in rescuers performing CPR given the nature of EMS work, it is not surprising that musculoskeletal injuries are the leading cause of reported morbidity. Occupationally induced musculoskeletal injuries are an inherent hazard of the EMS profession. Cardiopulmonary resuscitation for treatment of persons in cardiac arrest involves the administration of external chest compressions. Compressions are administered by placing the heel of one hand in the middle of the victim's chest, then placing the other hand on top of the first, interlacing the fingers. The rescuer must compress the chest of an adult about 1-1/2 to 2 inches (4-5 cm), with recent studies indicating that compressions of greater than two inches increased survival.

Wrist pain in rescuers performing chest compressions as part of cardiopulmonary resuscitation has been reported anecdotally and recently in the literature. Studies have indicated that rescuers apply as much as 644 N of force to the victim's chest with each compression, while standards require one hundred compressions per minute.

Recent research suggests that forces transmitted through the rescuers' wrists of less than 10% of those seen during the performance of chest compressions significantly strains the scapholunate ligament.

The combination of this evidence suggests that chest compressions as performed during CPR may cause damage to the scapholunate ligament of the rescuers' wrist.

Biomechanical research should be performed to further evaluate this possible correlation.

Biography

Robert Curran earned his Doctor of Chiropractic from the University of Bridgeport College of Chiropractic and BA in The History and Philosophy of Science from the University of Pittsburgh. He has over twenty years of experience in emergency medical services, has authored ten peer reviewed articles and presented research on CPR at conferences including the American College of Sports Medicine and EMS Today.

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