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The EZ LIFT Rescue System Will Reduce Back Injuries

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Situation: Emergency responders are taught to “lift with their legs, not their back.” While the notion of this is sound, the underlying biomechanics of the responders are not. Fire & EMS responders often sit for long periods of time and they are not able to warm up prior to a call for service. Long periods of sitting and long periods in a flexed posture, essentially how patient care and transportation are accomplished, causes a strange biomechanical phenomenon. Gluteal Amnesia is a neurological phenomenon seen in responders with back pain or in those who will have back pain in the future. When these responders pick up a spine board from the floor, they predominately use only their back and hamstrings, NOT their legs and specifically their gluteal muscles. This causes extreme loading on the lower back and tremendous torque on the lumbar spine leading to everything from disk microfractures, to bony microfractures, tissue strain and even cumulative tissue damage. So even though responders are taught to lift with their legs, they often do not have the ability to do so, they use their backs instead.

The Data: At any given time, over 10% of the EMS and Fire workforce is out of work due to a lower back injury. The average direct cost of a “simple” back strain is over \$9,000. Back injuries are the most common injury among the EMS Workforce at almost 6 times the rate of the next injury category. When responders are anonymously surveyed, 48% state that they have sustained a back injury in the past 6 months and they have not reported it. Departments over a 4 year period will spend an average of \$208,000 dollars on JUST “Overexertion Based Soft Tissue Injury” from lifting in the danger zone. The Federal Emergency Management Association (FEMA) Fire and Emergency Medical Service Ergonomics Handbook states; “One of the best ways to reduce lifting injuries is to avoid lifting heavy objects in the lifting danger zones. The critical danger zone, where most back injuries occur, is lifting from a point below

the knees and more than 5” in front of the body.

Solution: One of the most common lifts – and the most dangerous lift -- that an EMS Responder must do almost every day, is lifting a patient on a spine board. A spine board lift is biomechanically the deepest lift a responder performs and is always in the danger zone. When you add in all the other factors like gluteal amnesia, poor body mechanics, past injuries, fatigue from repeated lifting, and any lapses in training or fitness into the equation, it’s easy to see why so many back injuries occur from this kind of deep lifting.

The EZ LIFT Rescue System is a complete patient lift and transportation system that eliminates lifting in the danger zone. The EZ LIFT Rescue System incorporates handles that can be extended and retracted which allows FIRE / EMS responders to lift just like they do with a traditional spine board when it is required to lift from a safe lifting position at or above the knees. This feature effectively eliminates the dangerous lift from the floor and dramatically reducing torque on the lower back where most injuries occur.

Looking Forward: All front line EMS Responders already know that lifting patients is a dangerous and difficult task. Further, there are neurological and biomechanical hurdles that make a safe deep patient spine board lift even more dangerous. The EZ LIFT Rescue System is a critical component of the personal protective equipment that should be provided to the EMS Workforce because it solves the lift problem from the ground to the gurney and gives departments an additional tool to transport patients safely while drastically reducing load and strain on the responder’s back. It is this reduced load and strain that offers the best Return on Investment for departments while improving career longevity for the field employee.