

# Zoom<sup>®</sup> Motorized Drive Reduces Spinal Loading while Transporting on Carpet

**Medical**

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**Situation**

The Hospital Consumer Assessment of Healthcare Providers and Systems survey (HCAHPS) has become an increasingly important facet to healthcare facility market share, and also has a significant impact on their level of reimbursement from the Centers for Medicare and Medicaid. Public access to these scores has empowered patients to choose their hospital with more of a consumer-based approach, which has driven hospitals to focus on a positive patient experience. Hospitals invest heavily on hotel-like aesthetics, with single patient rooms, modern decor and often carpeted flooring. Recent research highlights the positive impact of physical environment on both caregiver and patient alike.<sup>1</sup> While carpeted flooring may promote a hotel-like environment, this aesthetic update to hospitals can make transporting patients on a traditional stretcher more difficult for caregivers, contributing to spinal loading. Repetitive spinal loading is of particular concern because it has been shown to influence the potential of lower back injuries.<sup>2</sup>

**Rationale**

Acknowledging an increase in hospital renovations that included carpeted flooring, Stryker designed a mobility solution that would reduce lumbar compression force during patient transports on carpet. Applying advanced engineering practices alongside biomechanical science, Stryker developed the Zoom<sup>®</sup> Motorized Drive System. Zoom is designed to virtually eliminate the strenuous pushing and pulling when transporting heavy patients, even on challenging carpeted flooring.

**Methodology**

With the objective of determining the extent to which mobility design impacts spinal loading on a Healthcare Professional (HCP), independent ergonomic experts compared Stryker's Zoom Motorized Drive System to the standard fifth wheel system. Participants were outfitted with a Lumbar Motion Monitor to record trunk position and were observed pushing each stretcher with a 225 lb. load along a corridor and carpeted eight degree incline.<sup>3</sup>

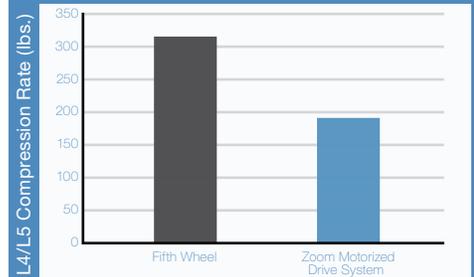
**Results**

Stryker's Zoom Stretcher reduced the mean L4/L5 spinal disc compression force by 42% on incline transition, and an average of 39% throughout the task when compared to the standard fifth wheel.<sup>3</sup>

**Conclusion**

Stretcher design can impact the well-being of HCPs when transporting patients on a carpeted surface. Implementing Stryker's Zoom Motorized Drive System reduces spinal loading and ultimately contributes to the goal of reduced caregiver injury rates.

**L4/L5 Compression Rate While Transporting on Carpet**



**Stryker Zoom Motorized Drive Stretcher**

**References**

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