XCOLLAR THE CERVICAL SPLINT & NeXSplint

Overview of "A Comparison of Three Cervical Immobilization Devices"

The University of Pittsburgh
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The study was conducted in 2008 by the Emergency Responder Human Performance Laboratory (DH), Department of Emergency Medicine, at The University of Pittsburgh, Pittsburgh, Pennsylvania.

The efficacy of three cervical devices was compared: The XCollar, Ambu Perfit Ace (one-piece c-collar) and the Jerome Nec Loc (two-piece c-collar). Twenty-five subjects with diverse morphometrics were used. Various range of motion measurements were taken using goniometric techniques. The subjects were examined in the seated position, supine on a backboard with no head restraints, and supine on a backboard with head restraints.

Multiple c-spine studies were cited that indicate immobilization with a cervical collar alone is not sufficient, therefore concluding that manual stabilization should be applied until the patient is secured to a backboard.

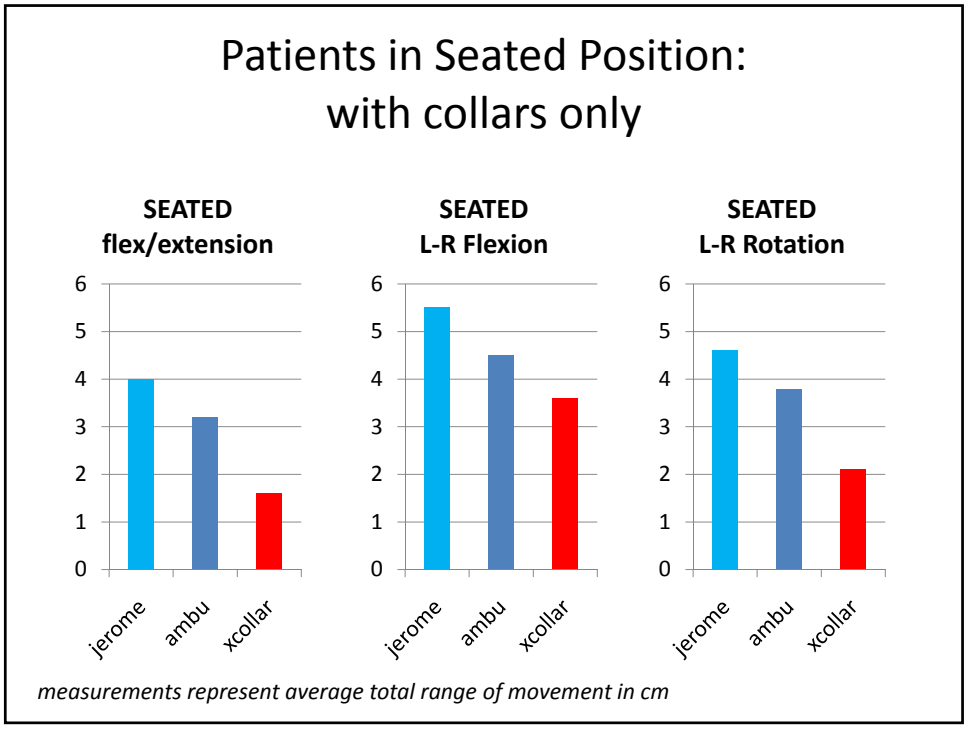
The results show significant reduction in head and cervical movement for patients fitted with XCollar as compared to the other two collars, noting an average of greater than 50% reduction in movement in both the seated and supine positions.

FURTHER ANALYSIS based on raw data collected during the above study:

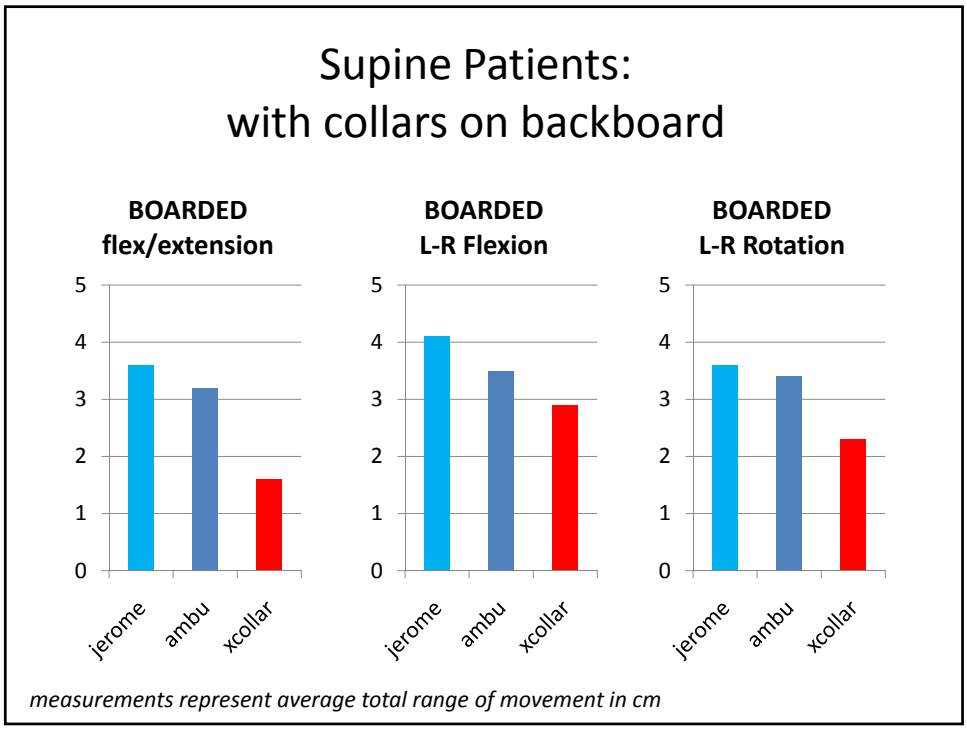
Beyond the conclusions of the study, further analysis of the raw data collected at the University of Pittsburg validates EmeGear's claim that the use of our cervical splinting technology will allow rescuers to:

- Provide better patient care,
- To more patients,
- Faster,
- Using less equipment,
- and requiring fewer personnel

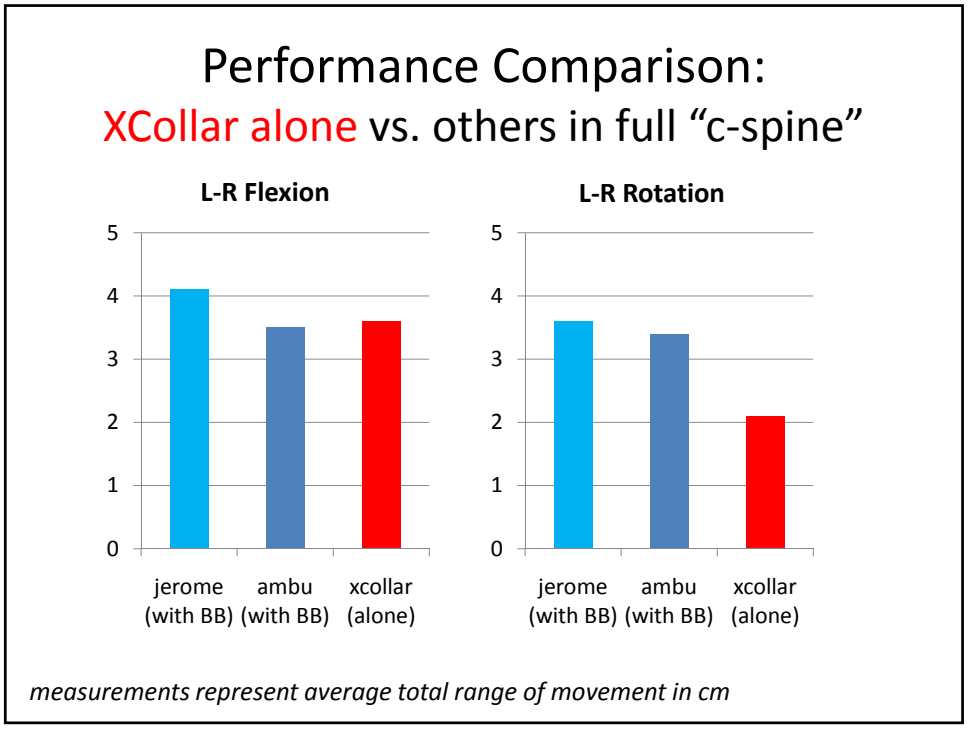
By comparing measurements illustrated in the following graphs, we can conclude that the XCollar Cervical Splinting System (one device) performs better than the combination of commonly used equipment and methods (c-collar, backboard, head restraints).



Graph 1: In all planes of movement, XCollar performed better than the other collars, averaging a 50% reduction in range of motion.



Graph 2: Maximal stabilization was achieved when the patient was in an XCollar on a backboard.



Graph 3: Notice that in the Left-Right Rotation and Flexion Planes the average range of motion measured for patients in the XCollar alone was less than and approximately equal to (within 0.10cm) the average range of motion measured for patients in the other collars with backboards and head restraints. (Measurements for the Flexion/Extension Plane of Motion were not collected when head restraints were utilized.)

The XCollar, when used alone, offers better immobilization when treating a single patient. The benefits of this technology therefore increase exponentially during multiple casualty incidents. In these cases, the XCollar/NeXsplint cervical immobilization system can effectively liberate a first responder from the obligation of holding manual cervical immobilization. This allows a single rescuer to initiate cervical immobilization to multiple patients in a much shorter time and without compromising patient safety.