



Standard Guide for Characteristics for Cervical Spine Immobilization Collar(s) (CSIC)¹

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INTRODUCTION

The objective of this guide is to begin to address the recognized need to support and immobilize the components of the spine or spinal cord. Although this guide does not quantitatively address performance standards for this device, it does address the characteristics of the device(s) used to provide support and immobilization of the components of the central nervous system for the patient suspected of receiving trauma to that body system.

1. Scope

1.1 This guide establishes minimum standards for devices, designated here as cervical spine immobilization collar(s) (CSIC), commonly referred to as cervical collars. The CSIC is used as the initial device for immobilization of the cervical spine, of a patient by emergency medical service personnel.

1.2 This guide does not identify specific degrees of limitation of motion achieved by placement of a CSIC on a patient. Definitive requirements for immobilization of the spine, and, in particular, the degree of limitation associated with the use of a CSIC, have not been established in the medical literature.

1.3 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 ASTM Standards:

F 1177 Terminology Relating to Emergency Medical Services²

2.2 Centers for Disease Control Standard:

Guidelines for Prevention of Transmission of HIV and HBV to Healthcare and Public Safety Workers³

2.3 OSHA Standard:

29 CFR 1910.1030 Occupational Exposure to Bloodborne Pathogens; Final Rule⁴

3. Terminology

3.1 Definitions:

3.1.1 *retention system*—a retention system is an adjunct to or an integral part of the primary platform that allows the patient to be securely attached to that platform used in whatever configuration and size necessary to accomplish the goal, while still allowing reasonable and necessary access to the patient.

3.1.2 *spinal immobilization*—spinal immobilization shall refer to immobilization of the spine and its contiguous structures, the pelvis, and skull.

3.1.3 *spine*—the spine shall include the cervical, thoracic, lumbar, and sacral vertebrae.

3.2 Definitions of Terms Specific to This Standard:

3.2.1 *cervical spine immobilization collar*—a device that can be applied and secured to a patient to support and immobilize the cervical spine during immobilization and transportation.

3.2.2 *directions of movement*—directions include flexion, extension, rotation, distraction, lateral motion, and axial compression motion.

3.2.3 *immobilization*—limitation of motion.

3.3 For definitions of other terms used in this guide, refer to Terminology F 1177.

¹ This guide is under the jurisdiction of ASTM Committee F30 on Emergency Medical Services and is the direct responsibility of Subcommittee F30.01 on EMS Equipment.

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² *Annual Book of ASTM Standards*, Vol 13.02.

³ Available from Centers for Disease Control and Prevention (CDC), 1600 Clifton Rd., Atlanta, GA 30333.

⁴ Available from Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.

4. Significance and Use

4.1 The intent of this guide is to identify characteristics that a CSIC shall possess.

4.2 It is not expected that the CSIC will be used alone to provide the entire scope of required immobilization. Clinical situations may require differing combinations of devices for adequate total spinal immobilization. A CSIC may be one of the devices.

4.3 Various configurations or sizes, or both, may be required to accommodate variation amongst individuals.

4.4 The CSIC shall be able to be used by the practitioner in an ergonomically sound manner.

4.5 The CSIC is intended to provide stabilization, not traction, and shall not be used to apply traction.

5. Characteristics

5.1 It shall allow X-ray to be taken through it and be MRI compatible.

5.2 It shall have a rapid, accurate, and easily usable method for size selection.

5.3 Placement of the CSIC shall not require or cause movement of the head or neck, or both.

5.4 A CSIC shall provide support in all directions of motion mentioned in 3.2.1.

5.5 It shall be compatible with other devices used in the complete immobilization of the cervical spine.

5.6 It shall be capable of being applied with the patient in a prone, sitting, or supine position, without movement of the cervical spine.

5.7 Because during rapid extrication there may only be time to apply the CSIC, it shall provide a high degree of immobilization.

5.8 It shall not cause vascular compression or airway compromise.

5.9 It shall provide access to secure an airway established by a needle cricothyroidotomy.

5.10 It shall provide for continued evaluation of cervical soft tissue or jugular vein distention or tracheal deviation, or combination thereof.

5.11 It shall provide for the performance of normally accepted techniques of airway management/maintenance.

6. Durability

6.1 The CSIC shall maintain stated characteristics throughout its lifetime as indicated by manufacturer's recommendations.

7. Maintenance

7.1 The CSIC shall be disposable or easily cleaned consistent with CDC decontamination procedures, without deterioration of the product or the retention of cleaning agents that may be harmful to the patient.

7.2 The cleaning/decontamination procedure shall be explained in the manufacturer's product information.

8. Capability

8.1 This guide does not presently quantify the limitation of motion expected to be imposed upon a patient as a result of the application of a spine device. This capability has not been omitted due to a lack of need, but as a result of the fact that such quantitative requirements have not been identified in the medical literature. It is hoped that such requirements can be developed, and included in this guide at its next review.

9. Keywords

9.1 cervical spine immobilization collar; spinal cord; spine

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