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Towards a Protocol for Evaluating Unrestrained Torso Neck Braces

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The study proposes a methodology for the evaluation of prophylactic unrestrained torso neck braces, such as those used by motorcycle riders. The methodology is the first step towards the first international test protocol for these neck braces. The methodology is intended to reliably determine the efficacy of neck braces. The methodology recreates various neck injury mechanisms through experimental testing and computational methods, and identifies applicable neck measures, criteria, and injury risks to evaluate. A case study evaluation of the methodology showed that it can gauge neck brace performance in terms of industry-standard injury measures and applicable biomechanical considerations.