

*The following is a letter submitted by several leading medical and research experts to the Journal of Neurosurgery expressing their dismay over a recently published paper by researchers at Cleveland Clinic comparing modern American football helmets with old leather helmets. The National Operating Committee on Standards for Athletic Equipment (NOCSAE) agrees with the sentiments expressed in this letter and is hopeful the journal will publish the letter.*

Nov. 22, 2011

Letter to the Editor of *Journal of Neurosurgery*

Dear Editor,

We biomechanists, researchers and, in the case of Tom Gennarelli and Bob Cantu, neurosurgeons wish to express our dismay with the conclusions of a recent paper by Bartsch, Benzel et al. that leather football helmets performed similar to new or modern football helmets. We believe the journal did a disservice to its readership by publishing this article in its current format for the following reasons.

The paper has many methodological design flaws, not the least of which are:

- A. The effective energies were so low as to elicit low g's averaging around 50g which is about half the level of the 98g the NFL found with concussions and less than half the 105g Virginia Tech found in their study of concussions. A wider spectrum of energies should have been studied.
- B. The VSR4 helmet is the impactor and, with these low energies, is absorbing most (all) of the energy. It would have been a far more valid study if the same model or type of helmet – leather impacting leather or modern impacting the same modern helmet – had been used as the impacting and impacted helmet.
- C. The authors present no hypothesis to be tested, present no data and have no statistical analysis. The conclusions are thus not supported by any statistical data.

We strongly believe it is unfortunate to have published this paper with the above flaws and irresponsible for the authors to publically state it proves leather helmets are similar to modern helmets, a patently false assertion.

Respectfully,

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