Letter to the Editor

Dear Sir,

As a Division IA NCAA football referee, pediatric dentist, author of several articles on 'Properly Fitted Mouthguards and Concussions', and Fellow of the International Academy for Sports Dentistry, I must offer reflections on two articles in the June 2004 edition of Dental Traumatology.

In the article by Dr John Wisniewski et al. 'Incidence of cerebral concussions associated with type of mouthguard used in college football' (1) there is a flaw in the Materials and Methods that leads the uninformed reader to an unfair assessment of custom mouthguards. The athletic trainers were the principal collectors of the data. For reporting, the questions asked were: '(i) if the injured player was wearing a mouthguard when the concussion occurred? (ii) what type of mouthguard the player was wearing?' In this research there was no quality of standards to judge the condition of the custom mouthguard that the player was wearing at the time of the injury, only that it was deemed to be a custom mouthguard by the reporting trainer.

From my own field observation and being in a number of football training rooms as a referee of Division IA Football, I have found the quality of custom mouthguards is very poor. Most of them would not meet the standards set by the International Academy for Sports Dentistry's position statement of a 'Properly Fitted Mouthguard' (2) and a majority of them are not constructed by a dentists as is a criteria mentioned in the Introduction: 'A custom made mouthguard is made by a dentist.' Many of the teams do not even have an active team dentist! Impressions and models are made by a dentist but sometimes the trainers and student staff, with no formal training, are fabricating and delivering the custom mouthguards to the players. Note the five mouthguards pictured, that I collected just this past year from football fields on game day (Fig. 1). They are all ill fitting and do not have 3-4 mm thickness in the desired areas. These all would be classified as custom mouthguards in this study. What I am suggesting is, at times, there may be a better quality of boil-and-bite mouthguard being worn by players than the custom mouthguards that are being reported as not making a difference in this study.

The authors did not examine the quality of mouthguards of the players who were not injured and did not take into consideration the prior histories with concussions of the injured and noninjured players. Both of these factors and a multitude of others are important to consider before reaching the conclusion:

'In this study, there was no advantage of wearing a custom made mouthguard over a boil-and-bite mouthguard to reduce the risk of cerebral concussion in football players.'

For future concussion studies, the other data and method of collecting the information is interesting and informative, however, for the readers in general and specifically the international readers that do not know the workings of NCAA Division IA Football (that a dentist may not be making and fitting these custom mouthguards, and that little attention maybe given to 'Properly Fitted Mouthguards' as per the position statement of the International Academy for Sports Dentistry) this is not an accurate assessment of the situation and the conclusion is not fair to those of us that are making 'Properly Fitted Custom Mouthguards' and are experiencing a difference in the concussion injury problem when a quality football team mouthguard program is in place.

In the second article by Dr Tomotaka Takeda et al. 'Are all mouthguards the same and safe to use? The influence of occlusal supporting mouthguards in decreasing bone distortion and fractures' (3) the laboratory findings support the notion that occlusal support is an important component in distortion of the mandible. The findings continue: 'The player should have good occlusal contact over a large area when biting lightly. This can only be done if an impression of the apposing arch is made to establish occlusal relationship and incisal guidance.' The word 'only' bothers me. There may be other ways and methods to establish this relationship. Also, the authors are moving from a laboratory finding and making a statement that this is the 'ideal mouthguard and all others should be used only on a temporary basis'. This is a stretch, not confirmed or supported by scientific evidence in the actual arena of the sporting competition.



Fig. 1. Examples of what would be classified as custom mouthguards collected by the author from Division 1A NCAA football fields.

Exciting times are upon us. All allied sports medicine components are beginning to take a closer look at the possible role 'Properly Fitted Mouthguards' might have, on reducing the severity or preventing concussions or mild traumatic brain injuries in contact sports. There must be criteria for standards in judging the quality of the mouthguards. For now, the International Academy for Sports Dentistry's Position Statement on 'Properly Fitted Mouthguards' (2) is a good place to start. As more and more research is coming, it is important that it be supported by good scientific data and the conclusions reached must be rock solid in credibility.

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References

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