

Consider Pressure Laminated Mouthguards For Your Athlete Patients

Dr. Timothy Kosinski

It has been discussed in the literature that any patient engaging in an athletic activity that may involve physical contact or trauma should be using a dentist prescribed mouthguard. One of the newest and arguably most effective type of mouthguard are those that are pressure laminated.



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The National Youth Sports Foundation for the Prevention of Athletic Injuries reports that dental injuries are the most common type of injury sustained during participation sports. Victims of total tooth avulsions who do

not have teeth properly preserved or replanted may face lifetime dental costs of \$10,000-\$15,000 per tooth, hours in the dental chair, and the possible development of other dental problems. It is estimated by the ADA that mouthguards prevent approximately 200,000 injuries each year in high school and collegiate football alone. Presently, over 90% of the mouthguards worn are of the variety bought at sporting good stores. The other 10% are of the custom made variety diagnosed and designed by a health professional such as a dentist or athletic trainer. (1)

Our athletic trainer at Detroit Catholic Central high school approached me several years ago with the hope of providing proper mouthguards to the athletes at the school. A good friend of mine called me from a sporting goods store asking what type of mouthguard he should purchase for his wrestler son. They had just been at a match where one of the opposing wrestlers had his front tooth completely knocked out. I was concerned and asked that I be allowed to fabricate a custom one in my office. This was the beginning of a long relationship with several of the teams at the school, including football and hockey, as well as wrestling. Mr. Robert Ogar arranged to work with a dental laboratory in Pennsylvania. Bobbie Quinn, the founder, can be reached at www.customguards.com. The lab provides us pre measured putty material and trays of various sizes. The impressions are easy to make and stable. The lab takes over from there and creates wonderful, customized mouthguards for our teams. Maybe that is why CC is so dominant in many sports today.

Pressure laminated guards are of the highest level of dental fit. These guards are layered under pressure to give outstanding protection and fit. The users are able to talk, breathe and concentrate on the sport without worry of the mouthguard falling out easily. This type of mouthguard will fit tighter and last longer than regular vacuum formed

ones.

The design of the mouthguard has shown to have virtually no negative effect on breathing. For years vacuum formed mouthguards made by the dentist were considered state of the art. These are certainly adequate for single layer designs. However, it is being shown in the dental literature that multiple layer mouthguards, which are laboratory pressure laminated, may be preferable. Vacuum formed guards are superior to store bought stock or boiled ones because they have a better fit, since a mould of the mouth is used. With pressure lamination, two or three layers of EVA material are used to achieve the necessary thickness. Lamination is defined as the layering of mouthguard material to achieve a defined end result and thickness under a high heat and pressure environment. The layers become chemically fused. (2)

The pressure laminated mouthguards I have been making for the Detroit Catholic Central football, hockey and wrestling teams are of the highest quality. Each layer is shaped separately over a customized mold of the athlete's teeth. Thickness is controlled where it is needed most to provide proper protection.

Another big plus with the system is that the mouthguards are easily personalized with the team colors, logo and even the athlete's name.

When considering these laboratory fabricated pressure laminated mouthguards there are often some objections to their use. Cost is sometimes a factor. At "CC" the



athlete's are charged a nominal laboratory fee of \$40 for each mouthguard. The laboratory will keep the mould on hand and if the appliance needs to be replaced there is only a slight fee. The cost is well worth it, considering the eventual cost of tooth replacement or repairing

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damaged teeth with cosmetic procedures. What are the true protection properties of the store bought, ill fitting uncomfortable plastic guards out there? As the expert health care professional in your community you will be providing a proper dental prosthesis, and not relying on sporting good store hype.

The time spent in making over 100 mouthguards at a time may seem overwhelming to the dentist. We have devised a time effective method. We meet the athletes at the school prior to the practices and simply make easy putty impressions. It is important to achieve a complete impression through the 1st molar area at least. Vestibular borders should be achieved. Using pre-measured polysiloxane putty materials proves to be ideal, with it only taking 3 minutes or so to achieve each impression. More information on this process and tremendous benefits to the athlete can be achieved by visiting www.sportsdentistry.com

It has been reported that protective thickness is important because as the thickness of the mouthguard material increases logarithmically, the transmitted impact force decreases. The mouthguard absorbs the impact energy. It is suggested that the labial thickness be 3mm, the palatal thickness 2mm and the occlusal thickness 3mm. (3)

So I would suggest that you get in contact with the athletic trainers at your local schools and offer to volunteer your time to educate the athletes and parents as to the benefits of custom made pressure laminated mouthguards. It can really make a difference in a young person's life. ■

- (1) Padilla, R. IndyDentalSociety.org
- (2) <http://www.smartguards.ca>
- (3) <http://www.informed.es/seod/mouthguard.htm>

