

# Dental Injuries and Athletic Mouthguards



## Did you know...

The overall oral (mouth) injury rate is approximately **2 times** greater when mouthguards are **NOT** worn, compared to when they are used during athletic activity.<sup>1</sup>

Athletes are **60 times** more likely to suffer tooth trauma when **NOT** wearing mouthguards as compared to using them during athletic activity.<sup>2</sup>

This year alone, approximately **5 million** teeth will be knocked out of the mouths of U.S. youth who **DO NOT** wear mouthguards while playing sports.<sup>3</sup>

Mouthguards range in price from **\$5.00-\$250.00**; however, the cost to treat an avulsed permanent tooth, including follow-up care, can cost **\$5,000-\$20,000** (20-80 times the price of the most expensive mouthguard),<sup>3,4</sup> not to mention lost school, athletic, or work hours.<sup>4</sup>

## How do mouthguards prevent dental injuries?

**PROPERLY** fitted mouthguards act as a shock absorber, buffering the impact or blow that can otherwise cause broken teeth, jaw injuries, or cuts to the lips, tongue, or cheeks.<sup>2,5</sup>

**PROPERLY** fitted mouthguards should be used in sports where there is a significant risk of mouth injuries including: football, hockey, lacrosse, basketball, gymnastics, wrestling or skateboarding.<sup>1,2</sup>



*This is your smile while wearing a mouthguard!*



*This is your smile while NOT wearing a mouthguard!*

## What types of mouthguards are available?

Three types of mouthguards are available:

- **Stock mouthguards** are inexpensive, ready to wear devices found at sporting goods stores. Little can be done to adjust their fit. They are big, bulky, make breathing/talking difficult, and provide little or no protection and are the **least likely** to be used or recommended by a Dentist.<sup>5,6</sup>
- **“Boil and bite” mouthguards** are made of thermoplastic material and offer a better fit than stock mouthguards. When placed in hot water they soften in order to form to the teeth.<sup>6</sup> While not as big as stock mouthguards, they are still bulky and ill-fitting, but are commonly used by athletes.<sup>5</sup>
- **Custom-fitted mouthguards** use an impression of an athlete’s teeth and a vacuum or heat-pressure lamination technique.<sup>2,5,6</sup> They are more expensive due to the time required to be molded by a dentist or certified athletic trainer. Because they are more comfortable and provide better protection,<sup>6</sup> athletes are more likely to wear mouthguards that fit properly.<sup>7</sup> Dentists recommend the use of custom-fitted mouthguards.<sup>2</sup>

## What should mouthguards feel like?



You may know what mouthguards looks like, but do you know what they are supposed to feel like?

Wearing an improperly fitted mouthguard is almost as bad as not wearing a mouthguard at all.

A protective mouthguard should be: (1) comfortable, yet tight-fitting, (2) allow normal breathing, swallowing, and speech, (3) prevent gagging, (4) odorless and tasteless, and (5) thick enough to provide protection.<sup>2,5</sup>

## Do mouthguards require certain care?

Like any piece of sports equipment, mouthguards must be cared for properly. Care includes: (1) rinsing/brushing the mouth before/after each use, (2) cleaning the device in cool, soapy water and rinsing thoroughly (do not use hot water, it can alter the shape), (3) patting dry with a towel before storing, (4) storing in a sturdy container with vents to prevent bacteria growth, and (5) avoiding placement directly in the sun.<sup>2</sup> Cleaning agents for dentures can be used as well as a UV light.



## Do mouthguards need to be replaced?

Mouthguards should be replaced before every season. Change mid-season if its: (1) frayed, worn, or warped, (2) has a hole or is bitten-through, or (3) no longer fits properly.<sup>8,9</sup> When left out in the sun a mouthguard may warp, so be sure to store properly to prevent the need for premature replacement.

Contact your dentist or certified athletic trainer to determine whether it needs to be replaced.<sup>2,5</sup>



## What do I do if a tooth is knocked out?

When a permanent tooth has been knocked out, there is a short window of time to keep the tooth alive.

The American Dental Association<sup>10</sup> recommends holding the tooth by the crown and rinsing off the root in water if it is dirty. **NEVER** scrub or remove any attached tissue fragments.

If possible, insert the tooth back into its socket, otherwise, put the tooth in a cup of milk and get to the dentist as quickly as possible.

**Mouthguards Prevent Dental Injuries,  
Athletic Trainers Save Lives!!!**

1. Knapik JJ, Marshall SW, Lee RB, et al. Mouthguards in sport activities: history, physical properties and injury prevention effectiveness. *Sports Medicine*. 2007;37(2):117-144.
2. American Dental Association. Protecting teeth with mouthguards. *JADA*. 2006;137:1772.
3. Colgate. Sports safety: helmets and mouth guards. Web site. <http://www.colgate.com>. Accessed on February 7, 2012.
4. American Academy of Pediatric Dentistry. Policy on prevention of sports-related orofacial injuries. *Oral Health Policies*. 2010;33(6):63-66.
5. Berry DC, Miller MG. Athletic mouthguards and their role in injury prevention. *Athlet Ther Today*. 2001;6(5):53-56.
6. Levin R. The benefits of offering custom mouth guards. *Compend Contin Educ Dent*. 2011;32(5):8-9.
7. Miller MG, Berry DC, Gareepy GS, Tittler JG. Attitudes of Michigan high school ice hockey players toward athletic mouthguard usage. *IJAHP*. 2006;4 (4). Web site: <http://ijahp.nova.edu/articles/vol4num4/toc.htm>. Accessed on February 7, 2012.
8. Rossi GD, Lisman P, Leyte-Vidal MA. A preliminary report of structural changes to mouthguards during 1 season of high school football. *J Athl Train*. 2007;42(1):47-50.
9. U.S. Army Public Health Command. Just the facts- injury prevention with mouthguards. Web Site. <http://chppm-www.apgea.army.mil/dhbw/OralFitnessMain.aspx>. Accessed February 12, 2012.
10. American Dental Association. Dental emergencies. Web site. <http://www.ada.org/370.aspx>. Accessed February 12, 2012.
11. Photo courtesy of Microsoft Office Template.
12. Photo courtesy of University of Wisconsin Eau-Claire Athletic Training Digital Library.
13. Remaining photos are original works by the authors.