

## Problem Solvers 20 Dental Mouthguards

Synonyms: sports mouthguards

Sporting injuries have been reported to cause up to one third of all dental traumas. One in six sports injuries happen to the craniofacial area-head and face. This report will discuss the importance of mouthguards and help a person choose the correct mouthguard for a given sport.

Mouthguards are an important piece of equipment for all sports that can result in facial trauma. The effects of a broken or lost tooth can be devastating emotionally and can be extremely expensive both short and long term for victims of oral trauma.

Sports that are at high risk for facial trauma like Boxing, Mixed Martial Arts, Karate are not the only sports that people need to be concerned about for facial trauma. Sports such as, bicycling, skating, basketball, football, baseball and soccer may seem like they have limited injuries to the mouth but in fact, have been reported as some of the greatest causes of oral injury.

What are the main types of sports mouthguards?

### Types of Mouthguards

There are several types of mouthguards and they fall within these categories:

- Pre-formed or stock
- Boil and bite
- Vacuum-formed in the dental office or lab
- Custom Made: Bilaminated or tri-laminated with inserts.

Pre-formed or stock mouthguards are made in a few sizes and must be held in the mouth by squeezing the teeth together. They are loose and may interfere with speech or breathing during sports. They are of limited use and will not offer protection to the alveolus (bone) or the underlying soft tissue.

Boil and Bite are thermoplastic mouthguards that are customized by placing in boiling water and sucking to adapt the softened material to the teeth. They are thin, very flexible and are trimmed by the patient. The nature of this material is that they are typically less protective but have better retention than the stock materials. These mouthguards may be over-thinned (during forming) by 70-90 percent in critical areas and may not provide optimum protection.

Custom Made Mouthguards: These mouthguards are the most expensive option and are fabricated by a dentist through their dental lab. They are made out of a more durable material than the other mouthguards and are

made with specific thickness based upon the dental prescription. These can be made for one arch or for both arches. The advantage of these mouthguards is that they also are fabricated to cover the gums and alveolus or bone, which may help prevent further trauma. The use of a polycarbonate insert into the mouthguard is designed to dissipate concussive trauma.

Some mouthguards that advertise as being “jaw protectors” have preformed shells with a polycarbonate insert and are made to posture the mandible or lower jaw forward. There have not been conclusive studies that these are as effective as custom made tri-laminated mouthguards. The issue of posturing the mandible forward for the mouthguard fabrication may cause stretching of the posterior attachment that hold the jaw meniscus and more study is needed to evaluate the safety of these devices.

My child plays baseball should I have a mouthguard made?

During baseball, the batting helmets may or may not have cages to protect a batters face. The possibility of getting a ball in the teeth is very real and can occur in any baseball game. Mouthguards are highly recommended for all sports where contact between a ball, racket, paddle, head, fist, foot or knee can contact a person’s teeth or mouth. While this may be a bit over protective, it has been shown that adding professional mouthguards can save a person from facial deformity, pain and the ongoing expense of tooth replacement.

My child won’t wear a mouthguard for tennis because it is embarrassing. Should I make them??

While tennis has incidental contact with balls, the decision as to which sports should have mouthguards can always be discussed with your dentist.

In a study done of NCAA athletes it was found that athletes with mouthguards suffered 1 incident per 1000 athletic exposures versus 3 incidents per 1000 athletic exposures for athletes without any mouth protection.

If I lost a tooth how much would it cost me to replace it?

If you lose a tooth the cost could be a few thousand dollars to \$10,000 if extensive hard and soft tissue grafting and an implant is required. The mouthguard is a great investment!

How do I know when my child needs a new mouthguard?

When the mouthguard falls out on its own or has loosened it should be replaced. As well, when the mouthguard has tears, holes or appears worn, it should be retired in favor of a new one.

How do I take care of my mouthguard?

Gently brush it with toothpaste and a toothbrush. It should be kept in a dish with a wet towel over the top to provide moisture without leaving it in water. Should I use denture tablets with my mouthguard?

You can but it should only be in contact with this cleaner for a short time. Do not store it in this water as it may bleach out the mouthguard and cause it to wear out prematurely.

Do mouthguards prevent concussion?

In a study from 1967 by Hickey, it was found that in cadavers the amplitude of force to the skull can be reduced by 50% with a mouthguard in place. This is a controversial topic and requires more study.

It is known that the shock absorbing qualities of a mouthguard together with the separation of the jaw from the skull that a mouthguard provides can cushion the skull from trauma.

Another theory is that by clenching against the well made mouthguard, the other muscles of the head and neck are activated and help the skeletal system protect the brain from concussion.

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