

# ATHLETIC MOUTHGUARDS:

## Indications and Benefits

With the summer holidays round the corner, children are going to step out and play physical games. Dental injuries are the most frequently incurring orofacial injuries due to sports activities. In addition to injuries to teeth that may result in pulpal injury and the need for endodontic treatment or loss of teeth, an impact to the base of the skull via a blow to the chin in a vertical direction may result in concussion. In both types of injuries, use of a mouthguard could have a significant preventive role.

Properly fabricated, custom-fitted mouthguards reduce the incidence of concussion as well as dental and mandibular jaw injuries. Mouthguards relieve the stress concentrated on the anterior teeth in a frontal collision by absorbing and dispersing some of the shock energy, quickly stopping the vibration of the maxillary teeth.

### Functions of Mouthguards

- Mouthguards prevent laceration and bruising during impact by acting as a buffer between the soft tissues of the lips and cheeks and the teeth.
- Mouthguards prevent tooth fractures or dislocations by cushioning the teeth from direct frontal blows while redistributing the forces of impact.
- Opposing teeth are protected from seismic contact with each other.
- The mandible is afforded elastic, recuperative support that can prevent fracture or damage to the unsupported angle of the lower jaw.
- Mouthguards help reduce neurologic injury by acting as shock absorbers between the upper and lower jaws.
- Mouthguards can provide positive reinforcement in the prevention of neck injuries.
- Mouthguards provide a psychological benefit as athletes

feel more confident and aggressive when they have the proper protection.



The most serious and life-threatening consequence of orofacial sports trauma is a Concussion. During contact sports, blows of varying degrees are repeatedly delivered to the jaw and chin. The concussive vibration from these blows is conducted to the temporal bone of the skull, which contains cranial nerve trunks that exit the base of the brain and affect hearing, balance, and blood supply to the brain. The brain

“floats” in cerebrospinal fluid and is protected by the skull. Unfortunately, the skull cannot protect or prevent the brain from incurring forces from a violent impact. The result is the chance of the brain rotating within the skull, causing a concussion. Custom mouthguards help protect the teeth while at the same time aid in diffusing the impact to the jaws by separating the mandible from the maxilla.

The ADA recommends wearing custom mouthguards for the following sports: acrobatics, basketball, boxing, field hockey, football, gymnastics, ice hockey, martial arts, racquetball, shot-putting, skiing, skydiving, soccer, squash, surfing, volleyball, weight lifting, wrestling rollerblading, mountain biking and skateboarding.

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