FDI POLICY STATEMENT

Sports Mouthguards

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CONTEXT

Engagement in sport is universal and new sports are developing regularly. The nature of some sports leads to the potential for trauma to both hard and soft oral tissues (e.g., lips, teeth, masticatory apparatus) resulting in high costs of trauma management.[1,2]

A mouthguard is therefore an essential piece of equipment for people engaging in contact and collision sports where orofacial injury patterns are to be expected.[2]

With the evolution of technology and the development of new materials, the quality of mouthguards has evolved significantly.[1]

SCOPE

A mouthguard is one of the best protection measures against oral trauma in sports. This policy statement outlines the basic principles of mouthguard design and use with a view to optimizing protection.

DEFINITIONS

Mouthguard: a protective device for the mouth that covers the teeth and gums to prevent trauma to the teeth, gums, lips and their associated structures.

Stock or ready-made mouthguard[2-5]: a mouthguard in a pre-formed shape, available in various sizes in sports shops and online sports shops, generally for single or infrequent use but with minimal scope for adjustment to fit the user's mouth.

Mouth adapted or "boil and bite" mouthguard[1,2,5]: a thermoplastic material manufactured in a pre-formed shape in various sizes and generally available in sports shops and online sports shops. These can be adapted to fit more closely to an individual's teeth and gums by the user, customizable once placed in hot or boiling water.[5]

Custom-made mouthguard[1,2,5,6]: a tailor-made mouthguard manufactured after taking impressions or 3D scan of the user's dentition. The dental laboratory or the specialist manufacturer creates a best-fit and comfortable mouth protector. Only available through dentists or other dental professionals working to the instruction of a dentist.

PRINCIPLES

Studies have consistently shown that custom-made mouthguards with adequate labial and occlusal thickness offer significant protection against intraoral injuries by providing a resilient, protective surface to distribute and dissipate impact forces. Moreover, a high-quality mouthguard can allow the optimization of sportive performance.[3]

POLICY

People of all ages are recommended to use a mouthguard while participating in any contact or collision sports or activities especially as soon as a child's permanent upper front teeth have erupted.

National dental associations, with the cooperation of the national sports federations, should promote to the public the benefits of sports mouthguards, including the prevention of orofacial injuries.

Those involved in the oversight of contact or collision sports (sports associations, coaches, teachers, parents/guardians) should be encouraged to check that a mouthguard is properly worn by sports participants.

The dental team should know how to recommend, provide and guide patients in the choice, use and care of mouthguards relevant to the sport or activities practised by their patients.

FDI highlights the importance and the role of mouthguards in:

- protecting the soft tissues (tongue, lips and cheeks) from injury;
- reducing the risk of injury to teeth and other hard tissue structures;
- preventing violent and destructive impact on teeth between the two arches;
- reducing the risk of concussion.

FDI recommends the minimum required properties of the mouthguard to:

- provide good absorption and dispersion of impact forces;
- fit comfortably over the arch with respect to the soft tissues;
- occupy edentulous spaces;
- provide full occlusal coverage in order to avoid undesirable tooth movement;
- be as thin as possible while ensuring maximum effectiveness related to the sport practised;
- be comfortable, odourless, tasteless and biocompatible;
- have good retention;
- not interfere with phonation and breathing.

FDI recommends the use of the custom-made mouthguard when engaging in contact and combat sports or sports that may be considered risky or extreme depending on national classification, even if only participating in the sport occasionally.[5]

- FDI emphasizes the role of the dentist in educating patients about the importance of wearing a mouthguard when participating in contact or combat sports, even

occasionally:

- Only a dentist or a member of the dental team working to a dentist's instruction can provide the custom-made mouthguard. The mouthguard should be assessed periodically and at least once a year by such a person:
- FDI encourages the use of new generation materials and customization. Mouthguards made by injection or additive layering techniques of ethylene vinyl acetate (EVA)7 are highly recommended to be the most effective and resistant3 especially for heavy contact sports:
- The mouthguard should be considered as a dental device and be part of the dentist's and dental team's education and training (indications, fabrication etc.).

KEYWORDS

Mouthguards, Sport, Trauma.

DISCLAIMER

The information in this Policy Statement was based on the best scientific evidence available at the time. It may be interpreted to reflect prevailing cultural sensitivities and socio-economic constraints.

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