

FDI POLICY STATEMENT

Sports Mouthguards

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Stockholm, Sweden

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2 **CONTEXT**

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

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

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

11

12 **SCOPE**

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

16

17 **DEFINITIONS**

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

20 **Stock or ready-made mouthguard²⁻⁵:** a mouthguard in a pre-formed shape,
21 available in various sizes in sports shops and online sports shops, generally for
22 single or infrequent use but with minimal scope for adjustment to fit the user's mouth.

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

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

32 a dentist.

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34 **PRINCIPLES**

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

40

41 **POLICY**

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

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

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

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

54 FDI highlights the importance and the role of mouthguards in:

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

59

60 FDI recommends the minimum required properties of the mouthguard to:

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

70

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

74 occasionally.⁵

- 75 • FDI emphasizes the role of the dentist in educating patients about the importance
76 of wearing a mouthguard when participating in contact or combat sports, even
77 occasionally:
- 78 • Only a dentist or a member of the dental team working to a dentist's instruction
79 can provide the custom-made mouthguard. The mouthguard should be assessed
80 periodically and at least once a year by such a person:
- 81 • FDI encourages the use of new generation materials and customization.
82 Mouthguards made by injection or additive layering techniques of ethylene vinyl
83 acetate (EVA)⁷ are highly recommended to be the most effective and resistant³
84 especially for heavy contact sports:
- 85 • The mouthguard should be considered as a dental device and be part of the
86 dentist's and dental team's education and training (indications, fabrication etc.).

87

88 **KEYWORDS**

89 Mouthguards, Sport, Trauma.

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91 **DISCLAIMER**

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

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