Mouth protection in sport in Scotland — a review

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The oral health strategy for Scotland, which was published in 1995, recommends that dentists promote the use of mouth protection in sport to reduce the risk of injury.[1] There is compulsory mouthguard use in some sports including ice-hockey, fencing, boxing, lacrosse and some forms of auto-cycling. In cricket, face protection appears to be compulsory for batsmen only. The use of mouth protection in the martial arts is compulsory at international level but, in the UK, the rule does not seem to be always enforced at club level. Players of contact sports, such as rugby and hockey, are considered to be more at risk of dentoalveolar injury and the governing bodies of these sports recommend that players at all levels wear mouth protection but have not made it mandatory.

It is difficult to ascertain the number of dentoalveolar injuries sustained as a result of a sporting injury, but some people are more at risk. In the 1960s it was estimated that participants in contact sports had a 10% chance of oral injury each season[2] with a 33-56% chance of oral injury at some point in their playing lifetime.[3] A more recent study of 14 to 15- year-old Sheffield school children showed that 26% of oral injuries were a result of participation in sport.[4]

In some sports, such as cycling, horseriding and skateboarding, the younger age group are most at risk of dental injury because they are learning, but in team sports the highest risk is in young adults aged 20-30 because they play more frequently. The risk of injury also increases with higher levels of competition when players are more committed and probably have more exposure. The risk in cricket is highest in 40-49-year-olds, which is a reflection of the age at which people play cricket and, perhaps, on the slowing of reactions in older players.[5]

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There does not appear to be much awareness of or much interest in the need for mouth protection among sports players in Scotland. The author carried out an unpublished postal survey of 33 governing bodies of sports in Scotland. There was no response from 18 of them. Those responsible for motor sport, tennis, baton twirling and volleyball did not consider mouth protection to be relevant to their sports. The governing bodies of women's football, football, hockey, rugby, roller hockey, basketball and horseriding said that they were interested in learning more about mouth protection but did not respond to an offer of a presentation on the topic. There is more interest in mouth protection among players of rugby and hockey, where mouthguards are worn by professional players, who may be see as role models.

In brief

- Although mouthguards are compulsory in some sports and are often worn by rugby and hockey players, people participating in sport are not generally aware of the need for mouth protection.
- Custom made mouthguards offer better protection than the 'boil to bite' type but many people do not have them because they are expensive and necessitate a visit to the dentist.
- The oral health strategy for Scotland recommends that dentists promote the use of mouth protection in sport but there is no NHS fee for making a mouthguard and so children and exempt groups have to pay a private fee. This does not encourage the use of mouthguards.
- Any oral health promotion project to promote the use of mouth protection should be targeted at governing bodies, coaches and schools as well as players but should also include funding for custom made mouthguards to be provided under the NHS. This might also encourage dentists to provide mouthguards for patients who participate in any sport.

Which mouthguard?

There is much evidence to suggest that professionally fitted custom made mouthguards are the best type.[6-8] 'Boil and bite' mouthguards can be bought in sports shops and self fitted by placing in hot water and biting into the softened lining. Studies published in the dental and the sporting literature have found that 'boil and bite' mouthguards provide inadequate protection and some authors have gone as far as recommending that this type of mouthguard be banned from use in sport.[9-11] 'Boil and bite' mouthguards can be bought for £2-3, but custom made mouthguards involve at least one, and possibly two, visits to a dentist and cost anything from £20 upwards. In addition, the recommendations of several studies are that sports players should have a new mouthguard annually or every two years, depending on use, and that children should renew their mouthguards annually because of growth changes in the mouth and jaws.[12-16] The cost implications of these recommendations are not inconsiderable. There is no NHS fee for a dentist to make a mouthguard for patients who are exempt from NHS charges. The parents of sports playing children have to pay a private fee for custom made mouthguards, even if their dentist treats them under the NHS. This is also true for people who are on state benefits. These people are more likely to use a £2 'boil and bite' mouthguard, if they use any mouth protection at all. People may think that they should be registered with a

dentist before they can ask to have a mouthguard made. The community dental service will provide free custom-made mouthguards for their own patients in some Health Board areas and, in other areas, GDPs can refer children to the CDS to have a mouthguard made free of charge. For most children and adults in Scotland who play sport the choice remains: either they wear no mouth protection, or they buy a cheap mouthguard from a sports shop which provides inadequate protection and might be dangerous, or they visit a dentist (and this may be problematic) to be provided with a custom-made mouthguard for which they have to pay.

Barriers to use

Apart from cost, other barriers to mouthguard use include problems with retention, speech, nausea, dryness and difficulty in breathing,[17] although there is better compliance for custom-made mouthguards than the 'boil and bite' variety.[15] Previous orofacial injury sustained while playing rugby does not appear to be a major factor in the decision to wear mouth protection among rugby players.[16] Girls and lower social groups appear to be less likely to wear mouth protection.[4] Australian amateur football players reported that the primary reasons for not wearing a mouthguard were 'too much hassle' and 'never thought of it'.[6] Student athletes revealed that they preferred custom-made mouthguards to self adapted types but the cost and the inconvenience of having to make a dental appointment to obtain a custom-made one was a major drawback.[17]

The two dental schools in Scotland do not train undergraduates to provide sport specific mouth protection and this topic has never been covered by any postgraduate training in Scotland. Anecdotal evidence has revealed that dentists do not, on the whole, know which type of mouth protection is most suitable for each sport and what oral structures should be included in impressions for a mouthguard. Dental technicians appear to be more knowledgeable. This is probably because mouthguards are covered by the personal protective equipment legislation of 1995 and themanufacturer must comply with the legislation.[18]

Clubs should be encouraged to appoint an honorary dentist whose job would be to ensure that all members have adequate and suitable mouth protection for their level of play.

Future action

If the recommendations of the oral health strategy for Scotland are to be taken forward, a health promotion programme is necessary. Members of the dental team should be encouraged never to let pass an opportunity for promoting mouth protection in sport. This should include raising awareness about the need for mouth protection for participants in sports where mouthguard use is not traditional. Scotland's favourite sport of football is an obvious example. Advocacy for mouthguard use should also focus on coaches, coaches' organisations and governing bodies. For those sports where mouth protection is more usual, players should be encouraged to wear custom-made mouthguards and renew them at least every two years. Coaches and teachers should be encouraged to insist on players wearing mouthguards for training as well as matches. Mouthguard use by children should be encouraged for all sports in schools and clubs. There should be a NHS fee for dentists in general dental practice to provide mouth protection for children and exempt groups. Dentists may need training in order to fulfil this role. The use of mouthguards by professional sports people, particularly footballers, would set an example. Despite the best efforts of the author to encourage Scottish footballers to wear a mouth guard none has so far proved willing to do so.

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