

BDA Fact File

Sports and dental health

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This factfile has been produced to help people taking part in sports to look after their dental and oral health. A dental problem can seriously undermine sporting performance. Whatever your sport, look after your mouth and improve your chance of winning.

How can a dentist help me prepare?

If you are taking part in any sort of major sports competition, prepare for it with your dentist. Have a checkup at least six months beforehand so that any problems can be identified well in advance. Make it clear to the dentist that because of your sports activities you cannot afford to have dental problems and need to have proactive preventive treatment. Tell the dentist that you are competing at a high level and that you have competition commitments, so that a decision can be made on whether to treat any conditions early or whether to 'watch and wait'. For many patients, 'watching and waiting' is normal practice where a problem is not serious, and where there is a chance that it will not progress. But if the outcome is sudden toothache just before a competition, this could be disastrous for performance.

The first checkup six months before a major competition will look especially for:

- wisdom teeth or other teeth needing to be extracted. The space they leave in your jaw can weaken it, requiring avoidance of contact sports for a period to prevent a risk of jaw fracture;
- deep decay, which when treated can lead to toothache which may need time to settle down afterwards;
- treatments which may take a long time. Your dentist may be heavily booked so allow time for any treatment to be fitted in and not hurried through.

The dentist may advise you to have another checkup four to eight weeks before the competition to check for problems. Any major work should have been completed well in advance of this, but this is to make sure that no other problems have developed since your last checkup.

What else can I do to prevent dental problems?

The risk of trauma, tooth decay and dental erosion can be minimised by appropriate preventive measures:

1. Using mouthguards

Dental injuries are the commonest type of orofacial injury sustained during participation in sports¹. Anyone engaged in contact sports should use a well made mouthguard to reduce the risk of injury to teeth, bone and lips and also reduce the risk of concussion. There is evidence that in most sports the cost of treatment following dental and maxillofacial injuries is greater than for any other injury². This is because most sports injuries heal completely without residual disability, while injuries to the mouth can often entail further treatment throughout life.

When a mouthguard is made, the dentist takes an impression of the upper and lower teeth. A dental laboratory then makes the mouthguard. The most commonly used material is a mixture of polyvinyl-acetate and polyethylene. A mouthguard is made by moulding the material by vacuum or direct pressure onto a plaster model of the impression. An identification label can be permanently sealed into the mouthguard when it is made, to help in case of loss.

A custom-made mouthguard designed by a dentist will provide a better fit and be more comfortable to wear than the fit-it-yourself mouthguards sold in sports shops, as well as

being more likely to stay in place on impact³. A better fit will also ensure that breathing is not inhibited. 'Boil and bite' mouthguards may show a CE European quality mark but this mark refers only to production consistency of the mouthguard material and says nothing about the effectiveness of the mouthguard's protection against impact.

If you are taking part in a major competition, have your mouthguard made well in advance so that you have time to get used to its feel. A custom-made mouthguard may cost up to £60. Also think about having a spare made at the same time which would be cheaper - adding probably £25-30 to the cost. Mouthguards cannot be provided under the National Health Service - the NHS does not provide motor-cyclists with crash helmets, either.

Mouthguards are normally recommended for contact sports - the British Boxing Board of Control, the Rugby Union and the British Sports Council recommend use of dentist-made mouthguards, for example. But mouthguards may be helpful in any sport where teeth are clenched for long periods, in concentration - weightlifting, for example.

Mouthguards also come in various strengths, according to the level of risk involved in the sport. A light mouthguard can be used for low risk sports such as basketball, while a heavy-pro mouthguard is needed for high risk sports such as boxing.

It is important that a mouthguard is properly looked after. Dentists recommend that:

- soap and water is used to wash the mouthguard immediately after use;
- it is then dried thoroughly and stored in a perforated container;
- it should be rinsed with a mouthrinse or a mild antiseptic (eg. 0.2% chlorhexidine) immediately before being used again;
- it should be inspected regularly to check its fit, particularly for children who are still growing
- it should not be chewed as this damages the mouthguard and shortens its life⁴.

Another tip: loss of a mouthguard can be very bad for confidence so keep mouthguards in your hand luggage when you travel. A mouthguard is essential equipment!

2. Using energy drinks

Dental decay is caused by dental plaque (a thin film of bacteria on the teeth) converting dietary sugars into plaque acids which attack the teeth.

Sports drinks have sugars in them and can contribute to decay.

Dental erosion is a separate problem occurring when acids from the diet or stomach dissolve away tooth substance. Dietary acids are found in citrus fruits or their juices, carbonated beverages, pickled foods and sports drinks. Some sports drinks used to replace body fluids and minerals lost during exercise have also been shown to be acidic and have a potentially erosive effect on teeth, if used regularly and frequently.

When using sports drinks:

- drink them quickly - avoid sipping them slowly;
- don't hold or 'swish' them round your mouth - try to minimise contact with teeth (using a straw will do this);
- try to use them chilled because warmer drinks are more erosive;
- rinse your mouth with water after using these drinks rather than brushing immediately after as this is more likely to wear away the teeth;
- try not to insert a mouthguard immediately after using sports drinks;
- try to avoid other acidic beverages during the day to reduce the risk of erosion, by drinking water, tea, coffee or milk at other times.

Sports drinks underline the need for all people engaged in training and sports to have regular dental checkups. Also, sports players who do not maintain a good standard of plaque control, with frequent use of fluoride toothpaste, are at greater risk of dental decay since the drinks also contain sugars⁵.

3. What do coaches and managers need to do?

Managers and coaches can do a lot to help their sportsmen and women by;

- making competitors aware of the need to include dental planning in their general competition preparations;
- checking the availability and standard of dental emergency facilities at competition venues;
- trying to find a dentist who is prepared to act as 'team dentist';
- talking to your team doctor (if there is one) to make sure that they would be able to help with any dental problems if a dentist is not available;
- having a dental first aid kit for extreme emergencies - see separate BDA factfile;
- remembering that dentists may prescribe drugs for patients, so competitors need to be sure that prescriptions from a dentist do not result in them taking a banned substance, inadvertently. Dentists will not be familiar with the banned substance list so competitors and coaches do need to check this themselves.

Finally

Remember that the best dental care is preventive care. The only person with real control over your oral health is you. But dentists can help and they

can help you more, as a sports competitor, if you explain your training plan and competition programme to them.

References:

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2. Sane J, Dental trauma in contact team sports, *Endodontic Dental Traumatology* 1988; 4:164-169.
3. Turner CH, Mouth Protectors, *British Dental Journal* 1977; 143: 82-86.
4. Scheer B, Prevention of dental and oral injuries, *Textbook and colour atlas of traumatic injuries to the teeth* 1994; 719-735.
5. Milosevic A, Sports drinks hazard to teeth, *British Journal of Sports Medicine* 1997; 31: 28-30.