



# SPORTS DENTISTRY

Guidelines for  
dentists and  
sports medicine  
physicians

Sports dentistry is the branch of sports medicine dealing with the prevention and treatment of dental injuries and oral diseases associated with sports and exercise. Some dental problems, such as non-carious cervical lesions or caries, may come from over-training, an unfavourable diet, a parafunctional load, or a lack of oral hygiene education. Swimmers are particularly exposed to dental erosion risk, due to the acidic environment in most chlorinated swimming pools. Due to their acidic ingredients and high free sugars content, sports beverages and related food supplements can also cause complications in the mouth, including damage to dental hard tissues and dental materials. In addition, amateur and elite athletes face a greater risk of oral injuries than non-athletes because they may not receive enough guidance and/or training in proper mouth

protection. Finally, it is important to increase awareness of the potential, indirect doping effects of dental prescriptions, such as opioid drugs, as certain drugs widely indicated in dentistry may be transformed in the body into substances prohibited by anti-doping authorities.

Oral and general health are connected. The mouth is often considered as a mirror of the body: only a healthy mouth will allow an athlete to perform in the most efficient way. Conversely, an unhealthy mouth can affect athletic performance. Collaboration between dentists and sports medicine physicians is key when managing an athlete's health to foster optimal athletic performance. This guideline provides a quick reference guide for both dentists and sports medicine physicians.

## STOMATOGNATHIC SYSTEM



**Bacterial factors have an impact on points 1, 2 and 3, and functional factors affect points 3,4,5,6,7. Consequences include an increased risk of injury and lower performance.**

# How sports impact oral health

## Caries, periodontal disease, dental erosion, and abrasion

- An athlete's diet is a continuous and necessary source of energy. When an athlete consumes energy foods and drinks for sport, the pH level in the oral cavity drops, which is one of the main causes of caries and is also a risk factor for periodontal disease and erosion.
- The stress level in sports is an additional risk factor for caries, periodontal disease, tooth erosion, abrasion and bruxism.
- The low pH value in chlorinated swimming pools may cause tooth erosion. Athletes should rinse their mouths with water and avoid brushing immediately after swimming.

**As soon as a patient starts practicing sports, FDI recommends that dentists and physicians reinforce their daily oral hygiene routines with a focus on prevention.**

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## Xerostomia

- Xerostomia is mainly caused by dehydration, stress, sweating and mouth breathing.

**FDI recommends that athletes drink or rinse with small amounts of water before, during, and/or after practicing sports and to replace lost fluids and re-hydrate after exercise by drinking water.**

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## Traumatology

- Physical contacts and shocks are very frequent in sports and can result in tooth, bone, soft tissue and TMJ injuries.

**FDI recommends customized mouthguards when practicing contact sports. For certain sports, mouthguards are mandatory, e.g. boxing, taekwondo, ice hockey and American football. For other sports their use is strongly recommended, e.g. martial arts, handball, water polo and wrestling.** For children and adolescents whose mouths are still developing, it may be appropriate for them to use standard mouthguards that the dentist can then adapt.





# How oral health impacts athletic performance

## Microbial Factors

- The oral cavity can cause and maintain inflammations and infections in other systems, e.g. the cardiovascular system and musculoskeletal system, through the dissemination of pathologic bacteria and toxins into blood circulation.

**FDI recommends developing an oral prevention programme adapted to the patient's risk and, when needed, carrying-out a dental treatment plan addressing both hard and soft tissues.**

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## Functional Factors

- Defective dental occlusion and TMD (Temporomandibular disorders) affect posture and gait. Issues with posture and gait can influence performance, increase risk of injury, and delay rehabilitation in sports.

**FDI recommends re-establishing the proper function of the stomatognathic system by replacing missing teeth, achieving occlusal stability and/or considering orthodontic treatment.**



## The psychological factor: the motivation to play sports

Good oral health improves self-confidence, quality of life and well-being, which are all necessary elements for a strong athletic performance.

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### Medication Use

- Certain drugs widely prescribed in dentistry may be transformed in the body into prohibited substances. For example, codeine-containing drugs are not prohibited by the World Anti-Doping Agency (WADA). However, when they enter the body, such medications are transformed into morphine, which is prohibited.

**FDI recommends checking that the medications prescribed for dental treatment are compatible with physical exercise and anti-doping policies.**





# Advice to dentists and physicians: Prevent, screen and treat

## PREVENT

Dentists and sports medicine physicians should always give advice on prevention. Sports medicine physicians should include oral health as part of the athlete's general health check-up and ensure that they seek appropriate dental care. Specific advice for athletes should include:



### ➤ Oral hygiene

Brush teeth and gums at least twice a day for two minutes (30 minutes after eating), using a toothbrush, fluoride toothpaste and flosses/interdental brushes. Rinse with water or chew sugar-free gum after meals and snacks when brushing is not possible. The dentist will apply fluoride varnish if needed.

### ➤ Regular check-ups

Attend regular dentist appointments, at least once a year for amateur athletes and twice a year for elite athletes.

### ➤ Nutrition

Maintain a healthy diet, with limited snacking on foods and drinks high in sugars and careful consumption of energy drinks and food that contain a lot of acids and sugars.

### ➤ Smoking

Avoid smoking and smokeless tobacco.

### ➤ Protection

Wear a mouthguard when engaging in contact sports, preferably custom-made.



## ➤ SCREEN AND TREAT

Dental screening for athletes should include assessment of teeth (DMFT index and erosion), periodontal condition (PPD, PI, GI index), dental occlusion, TMJ (Temporomandibular joint), saliva, facial muscles, third molars, nutritional habits, inflammation and medical history. Whenever indicated, FDI recommends further investigations, including radiologic examinations (intra-oral x-ray, panorama x-ray, CT scan).

Objective measurements can be used to assess the oral health status of an athlete more accurately and to guide follow-up actions according to the categories below:

	HEALTHY	NEEDS DENTAL TREATMENT	NEEDS EMERGENCY DENTAL TREATMENT
<b>Screen</b>	No pathological and/or functional findings	Presence of at least one pathological or functional finding	Multiple, severe pathological and/or functional findings
<b>Treat</b>	Recommend next check-up in 6 months (elite athletes) or 12 months (amateurs)	Set up a prevention and dental treatment plan, or conduct further dental examination as soon as possible	Set up a prevention plan and provide immediate dental treatment

## Further reading

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## Other references

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