



Oral Health for Athletes

For everyone, including elite and endurance athletes, the best protection against tooth decay is a combined regimen of effective home care, regular professional care, and a healthy diet that is low in refined sugar, simple carbohydrates, and concentrated forms of acid. Exercise is also an important part of an overall healthy lifestyle, but there are certain forms of exercise and levels of physical training that can increase an individual's overall risk factors for tooth decay. These factors are often not fully controlled with something as simple as swapping one sports drink for another.

The good news is that most of these factors can be controlled with some simple adjustments to your basic fueling and home-care routine. However, as more and more people strive to increase their overall health and fitness levels by training for and completing a marathon, triathlon, century, or Ironman competition on an amateur level, there is an increasing gap of information about how to care properly for your teeth while you train and compete.

What you put in your mouth before, during, and after a strenuous workout or endurance race can certainly have a significant effect on the health of your teeth over time, but the changes that occur in the mouth during high-impact or endurance exercise create an environment where cavity-causing bacteria can thrive and reproduce at accelerated rates when acid and sugar are present. Understanding these basic biological changes that happen in the mouth when you engage in endurance or elite levels of exercise is key in helping you make the best choices possible in fueling your athletic performance and protecting the health of your teeth.



Why Saliva Matters

When we talk about the accelerated risks of tooth decay in performance athletes and amateur enthusiasts in comparison to the general population, the biggest distinguishing factor lies not so much in the sports drinks, gels, and bars consumed during training, but in the saliva itself. As the duration and intensity of exercise increases, the rate of breathing increases as well. These increased rates of respiration tend to dry out the mouth. The longer the exercise lasts, the more difficulty the mouth has in maintaining adequate saliva flow. Many endurance athletes describe this feeling as ‘cotton mouth’ and it is extremely common in runners, cyclists, swimmers, speed skaters, and many other athletes who maintain high levels of cardiovascular activity for extended periods of time.

This lack of saliva in the mouth isn’t just uncomfortable for the athlete; it is also the primary accelerant for dental decay. The saliva contains protective, neutralizing enzymes that help control the growth of cavity-causing bacteria. If a sugar, simple carbohydrate, or highly acidic food or beverage is introduced into the mouth when the saliva flow is low like this, those bacteria are able to grow and reproduce at a virtually uninhibited rate. Swimmers, unlike cyclists and runners, almost never fuel while they are swimming, but they can also be at risk of accelerated dental decay when this same dry mouth is exposed to chlorinated water that has not been properly pH adjusted.

The biggest problem for most endurance athletes here is that simple carbohydrates like sugar form the foundation of proper fueling through an event or long training session. When you are running, swimming, or cycling for hours at a time, the body simply cannot wait for you to digest a more complex form of fuel. Which means that your mouth will be exposed to food and beverages that leave you more vulnerable to developing decay at a time when your mouth has very few defenses against it.



Dental Disease Affects Athletic Performance

Sometimes a passionate pursuit like professional athletics can come with sacrifices. Many professional athletes suffer injuries and joint degeneration due to overuse. But tooth decay is not the same as a functional overuse injury. Tooth decay is a disease and the body treats it as such. When dental decay develops enough, the entire immune system engages to try and keep the bacteria from entering the bloodstream and creating infection elsewhere in the body. The pain of a toothache is at the very least a distraction during exercise, but asking your body to fight an internal infection and run a marathon at the same time will most certainly affect your overall performance.

A very interesting study to this effect was performed at the 2012 Olympic Games in London. 302 athletes from 25 different sports were examined and interviewed during their time in the Olympic Village. The results demonstrated extremely high levels of poor oral health, including dental decay in 55% of the athletes, and gingivitis in 76% of the athletes. More than 40% of those athletes reported being bothered by their oral health, and 18% were conscious of their oral health having a negative impact on their training and performance.



What You Can Do

The good news is that many of the risk factors for tooth decay associated with athletic performance can be reduced with some simple changes to how and when you fuel, and how you care for your mouth when you aren't exercising.

Here are some guidelines to consider:

- **Choose workout fuels that are as low in acid and refined sugar as you can.**
- **When consuming gels, sports drinks, or bars during exercise, rinse your mouth with plain water afterwards** to reduce the amount of acid or simple carbohydrates lingering in your mouth and feeding bacteria.
- **Use xylitol-containing mints or chewing gum between workouts** to help fight cavity causing bacteria and increase salivary output.
- **When you are not training or racing, eliminate as many forms of refined sugar, simple carbohydrates, and acid from your diet as you can** in order to help reduce your overall risk of decay.
- **Brush and floss your teeth correctly at least twice a day and always within an hour of starting *and* completing a workout or event.** Brushing and flossing before exercise helps reduce the bacterial numbers already in your mouth, and doing so again afterwards helps to remove the bacteria that may have fed and reproduced during your workout.
- **See your dentist regularly** and follow any additional advice for home care or in-office treatment necessary to help control your risk-factors for dental decay while you are training or racing.



References:

International Journal of Sports Medicine: *Elite athletes and oral health*

British Journal of Sports Medicine: *Oral health and impact on performance athletes participating in the London 2012 Olympic Games: a cross-sectional study*

Journal of Biological Regulators and Homeostatic Agents: *The effect of swimming on oral ecological factors*

Journal of Prosthetic Dentistry: *Severe and rapid erosion of dental enamel from swimming: a clinical report*

Journal of the California Dental Association: *Sports drinks and dental erosion*