

# The Relationship between Athletes' Oral Health and Overall well-being

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## Abstract

### Background:

This review article aims to emphasize the importance of oral and dental health, which is often overlooked but an indispensable element of overall health, and the striking effect of oral health on athletic performance, which has emerged in recent research in the field of sports medicine and dentistry.

### Materials and Methods:

In the search for scientific literature for this review, data from the US National Library of Medicine (PubMed), MEDLINE, and SportDiscus were used, and the terms "oral health", "sports injuries", "sportive performance", "dental health". "athletes' health" were used. The relevant literature has also taken its source from the research of relevant articles from reference lists derived from data searches

### Results:

It is widely acknowledged that optimal oral health plays an important role in overall well-being. It is also recognized that athletes face unique challenges due to the demands of intense training programs. It is worth noting that maintaining good oral and dental health has implications that extend beyond a bright smile. There is growing evidence that it can also have a significant impact on an individual's physical performance and overall health. It is worth noting that athletes may be particularly vulnerable to a range of oral health concerns that could potentially impact their performance and overall well-being.

### Conclusion:

Athletes may sometimes experience common oral health issues such as tooth decay and periodontal diseases, which could be due to several factors. These may include an increased intake of sugar from sports drinks, dehydration during training which can lead to dry mouth, and potential trauma from contact sports. It is worth noting that these issues can have a significant impact on an athlete's performance, beyond mere discomfort. They can affect nutrition intake, sleep quality, and even systemic inflammation levels.

**Key words:** dental health; sports injuries; sportive performance; oral health; athletes' health

## Introduction

It is widely accepted that maintaining optimal oral and dental health is of great importance for overall health and well-being (Needleman et al., 2015). In light of the complex relationship between oral and dental health,

athletic performance, and overall health and well-being, it is undoubtedly of great importance that sports physicians and scientists carefully consider the potential effects of oral health on athletes (Ashley et al., 2015). It would be beneficial to investigate this topic more thoroughly to better

understand the relationship between oral health, athletic performance, and overall health outcomes (Stamos et al., 2013).

It is widely acknowledged that maintaining optimal oral and dental health is of great importance for overall health. It would be remiss of us not to mention the importance of this in the field of sport and athletic performance. It would be beneficial to synthesize the available evidence and raise awareness about the critical relationships between athlete oral and dental health, athletic performance, and athlete health. Recent research in sports medicine and dentistry has highlighted the potential influence of oral health on athletes' athletic performance and long-term health (Needleman et al., 2021; Needleman et al., 2013).

Recent researches in sports medicine and dentistry have highlighted the potential influence of oral health on athletic performance. It is not uncommon for athletes to experience tooth decay and periodontal diseases, which can have a notable impact on their oral health and, in turn, their athletic performance and overall well-being (Merle et al., 2022). Furthermore, the consequences of poor oral health may extend beyond the immediate sporting activities in which an athlete is engaged, with the potential to affect their long-term health and career longevity. It would be beneficial to consider oral and dental health as a priority to help mitigate any potential adverse effects on athletes' health and career prospects (Gallagher et al., 2018).

It would be beneficial to consider preventive measures, which might include regular dental examinations, comprehensive oral hygiene education, and the provision of customized mouth guards to protect against dental trauma. In addition to these practices, it may be beneficial to consider interventional measures such as timely treatment of oral health problems and integrating oral health assessments into routine sports medicine evaluations. These could potentially play a role in maintaining the overall health of athletes and preventing athlete injuries (Needleman et al., 2021; Sousa et al., 2021).

### Discussion:

It is worth noting that there is a growing body of evidence suggesting a potential link between poor oral health and an increased risk of certain systemic diseases, such as cardiovascular disease, diabetes, and respiratory infections. These conditions can have a detrimental impact on athletic performance and overall health (Chapple et al., 2017). It might be suggested that athletes, who often engage in intense physical activity and training regimens, could be particularly susceptible to the negative consequences of poor oral health, due to the increased physiological demands placed on their bodies (Ashley et al., 2015; D'ercole et al., 2016).

Numerous studies have established a correlation between poor oral health and an elevated risk of cardiovascular disease (CVD) (Bale et al., 2017; Tonetti et al., 2017). Specifically, periodontal disease, a chronic inflammatory condition affecting the gums and supporting structures of the teeth, has been linked to an increased risk of atherosclerosis, myocardial infarction, and stroke (Dietrich et al., 2013). The proposed mechanisms involve the introduction of oral bacteria and their byproducts into the bloodstream, leading to an inflammatory response that contributes to the development and progression of CVD (Carrizales-Sepúlveda et al., 2018; Lockhart et al., 2012).

Furthermore, oral health has been implicated in the onset and exacerbation of respiratory conditions, such as pneumonia and chronic obstructive pulmonary disease (COPD) (Dong et al., 2022; Scannapieco & Shay, 2014). Poor oral hygiene and the presence of periodontal disease can result in the aspiration of oral pathogens into the lungs, leading to respiratory infections and inflammation (Azarpazhooh & Leake, 2006). Individuals with COPD often exhibit a higher prevalence of oral diseases, further compromising their respiratory function (Gomes-Filho et al., 2010; Shen et al., 2015).

A meta-analysis by Humphrey et al. (2018) indicated that individuals with periodontal disease may be at a slightly elevated risk of developing cardiovascular disease compared to those without periodontal disease. The authors proposed that the chronic inflammation associated with periodontal disease may potentially contribute to the development and progression of atherosclerosis,

In light of the intricate relationship between oral and dental health, athletic performance, and general health, it would be greatly beneficial for athletes if sports physicians, dentists, and scientists could work together to explore the potential impact of oral health on athletes (Needleman et al., 2021). It would be valuable to increase awareness of the importance of implementing appropriate preventive and interventional measures to optimize the health and performance of athletes in various disciplines and to maintain the overall health of the athlete (Sousa et al., 2021)

### Conclusion:

It would be beneficial to consider the impact of oral and dental health, which is frequently overlooked, on public health and athlete health. It would be remiss of us not to highlight the crucial role that oral and dental health plays in the overall health and performance of athletes. It would be remiss of us not to consider the potential negative health consequences and increased risk of injury that can be caused if intensive training programs are carried out without appropriate health precautions. With this in mind, it seems prudent to suggest that routine oral and dental health checks should not be overlooked in terms of athlete health.

Recent research in the field of sports medicine and dentistry has indicated the possibility of a relationship between oral health and athletic performance. It is worth noting that the most common oral health problems in athletes are tooth decay and periodontal diseases. It is possible that these adverse health conditions could lead to the deterioration of the athlete's oral health, which might have far-reaching negative consequences in terms of both the athlete's overall health and the athlete's athletic performance. It would be beneficial to consider prioritizing oral and dental health to help avoid any potential negative effects on athlete health and career longevity, given that the effects of impaired oral health can extend beyond athletic performance and potentially impact an athlete's long-term health and career longevity.

In view of the complex relationship between oral and dental health, athletic performance, and general health status, it would undoubtedly be beneficial for sports physicians and sports scientists to consider raising awareness among athletes about the potential effects of oral health on athletic performance. It might be helpful for athletes in different sports to think about ways they could improve their health and performance by taking appropriate steps to prevent problems and treat them when they arise. It is thought that paying closer attention to oral health could potentially contribute to positive health outcomes for athletes themselves and for public health in general.

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**Author contributions:**

All the authors read and approved the final version of the manuscript.

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