Εξειδικευμένα οδοντιατρικά θέματα αθλητών

Χρήστος Ραχιώτης

Καθηγητής Οδοντιατρικής Σχολής ΕΚΠΑ, Πρόεδρος ΕΕΑΘΛΟ, Head of Scientific and Education Committee of European Association of Sports Dentistry (EA4SD)


Η αθλητική οδοντιατρική είναι ο κλάδ
της οδοντιατρικής που ασχολείται με
την πρόληψη και τη θεραπεία των
παθολογιών και τραυματισμών της
στοματικής κοιλότητας και του
στοματογναθικού συστήματος που
σχετίζονται με την αθλητική πρακτικ
FDI statement

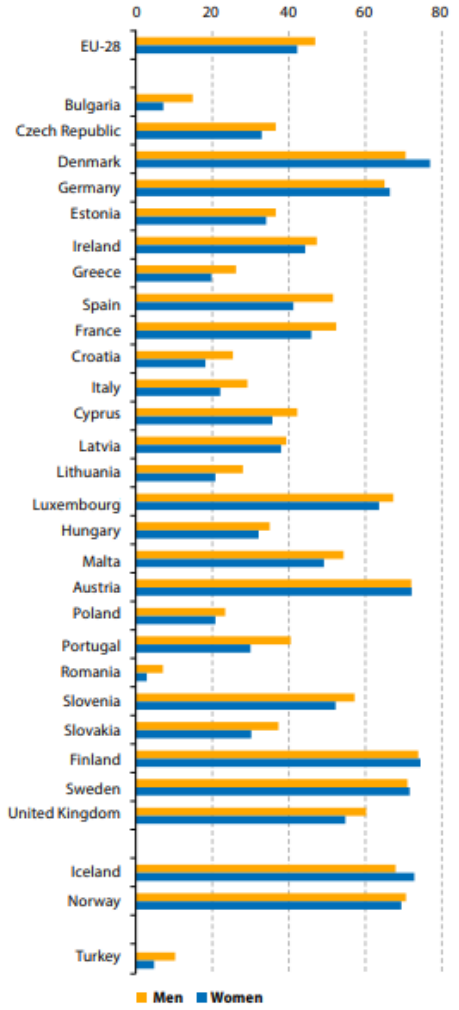
1% του παγκόσμιου πληθυσμού είναι αμιγώς επαγγελματίες αθλητές

5% του παγκόσμιου πληθυσμού έχει επαγγελματική σχέση με τον αθλητισμό

Στην Ευρώπη υπολογίζεται στα 1,3 εκατομμύρια αμιγώς επαγγελματίες αθλητές (2018, EU statistics)

Figure 5: Practising sport, fitness or recreational (leisure) physical activities at least once a week, by sex, 2014

(% of population aged 15 and more)



Note: Estimated data for EU-28 (no data for Belgium and the Netherlands)

- Οι αθλητές χιονοδρομίας αντοχής και διάθλου εμφάνισαν ↑ συχνότητα περιοδοντικής φλεγμονής και κρανιογναθικές διαταραχές σε σύγκριση με μη αθλητές παρόμοιων χαρακτηριστικών.
- Παρά το υψηλό επίπεδο φυσικής κατάστασης και την έντονη ενασχόληση με την υγεία του σώματος, οι αθλητές ήταν ↓ ενημερωμένοι σχετικά με την πρόληψη των στοματικών νοσημάτων. .

Res Sports Med. 2022 Jun 27;1-15. doi: 10.1080/15438627.2022.2090251. Online ahead of print.

Clinical findings and self-reported oral health status of biathletes and cross-country skiers in the preseason – a cohort study with a control group

Cordula Leonie Merle [1 2], Theresa Rott [1], Nadia Challakh [1], Gerhard Schmalz [1], Tanja Kottmann [3], Tom Kastner [4 5], Katharina Blume [4], Bernd Wolfarth [4 5 6], Rainer Haak [1], Dirk Ziebolz [1], Jan Wüstenfeld [4 5]

Affiliations + expand

PMID: 35762035 DOI: 10.1080/15438627.2022.2090251

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Abstract

This cross-sectional study aimed to compare clinical oral conditions as well as the self-reported oral health status of biathletes and cross-country skiers (A) to age- and gender-matched non-athletic controls (C). Thirty-one A and 68 C were examined in 2020 regarding caries experience (DMF-T), partially erupted wisdom teeth, non-carious tooth wear (erosion), dental plaque biofilm, gingival inflammation, periodontal screening (PSI), salivary active matrix-metalloproteinase-8 (aMMP-8) test and screening for temporomandibular disorders (TMD). Questionnaires recorded periodontal symptoms, TMD symptoms and oral health behaviour. Group A had a lower prevalence of carious teeth and positive aMMP-8 tests, but more of them had severe gingivitis and signs of periodontitis. Both groups reported similar oral health behaviour. Only in group C, associations between aMMP-8 and periodontal findings as well as clinical findings and self-reported symptoms of TMD were identified. Group A showed a high prevalence of oral inflammation and seemed to be less aware of oral symptoms. Clinical examination seems to be necessary for periodontal/TMD screening of athletes.

Keywords: aMMP-8; athletes; oral health; oral health-related quality of life; oral hygiene; prevention; sports dentistry

- Από τους 6.680 αθλητές, 76 προσήλθαν ως επείγοντα οδοντιατρικά περιστατικά
- Η πλειονότητα των περιστατικών δεν αφορούσε αθλητικό τραυματισμό, αλλά προϋπάρχουσες στοματικές παθήσεις.
- Τα συχνότερα προβλήματα ήταν η περιοδοντική νόσος και η τερηδόνα, γεγονός που δείχνει ότι η πρόληψη πρέπει να ξεκινά πριν από τους αγώνες.

Oral health problems in high-performance athletes at 2019 Pan American Games in Lima: a descriptive study

Catalina Opazo-García[1], Jeel Moya-Salazar[2,4], Karina Chicoma-Flores[3] and Hans Contreras-Pulache[2,3]

INTRODUCTION: Dental care is provided for high-performance athletes at national and international sports events. Elite athletes may seek care for sports-related injuries and pre-existing oral diseases. Previous studies indicate an association between oral health problems and negative performance impacts in elite athletes.
OBJECTIVES: To determine the prevalence of the most common oral pathologies in high-performance athletes during the emergency dental care performed at the Lima 2019 Pan American Games (JPL-19).
METHODOLOGY: All reports of athletes (≥18 years old, of both sexes, from 41 countries) who received emergency dental care at Pan American Villas during the JPL-19 were included. Injuries and types of oral diseases were classified according to the Injury and Disease Surveillance System proposed by the International Olympic Committee.
RESULTS: Of the 6680 participating athletes, 76 (1.14%) presented as dental emergencies, 90.8% (69/76) of the athletes seen presented pre-existing oral pathological conditions, the most frequent were periodontal diseases (34%, 26/76) and dental caries (29%, 22/76). Among the sports with the most cases, there were 22 (29%) in athletics, 6 (8%) in soccer, and 6 (8%) in taekwondo. The most frequent dental emergencies came from Peru, Puerto Rico, Bahamas, Grenada, and Venezuela.
CONCLUSIONS: Pre-existing oral diseases were more frequent than sports-related accidents. The most prevalent diseases were periodontal disease and dental caries disease. It is necessary to implement new care strategies for athletes, based on prevention, before and during sports competitions.

BDJ Open (2021)7:21 ; https://doi.org/10.1038/s41405-021-00078-1

- Οι μη τερηδονικές αυχενικές βλάβες στους ποδοσφαιριστές είχαν αξιοσημείωτη συχνότητα, περίπου 39,5%.
- Ο καθημερινός χρόνος προπόνησης αναδείχθηκε ως σημαντικός παράγοντας κινδύνου

Medeiros *et al. BMC Oral Health* (2020) 20:215
https://doi.org/10.1186/s12903-020-01200-9

BMC Oral Health

RESEARCH ARTICLE Open Access

Prevalence and risk indicators of non-carious cervical lesions in male footballers

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Abstract

Background: Non-carious cervical lesions (NCCLs) have shown a significant incidence and prevalence and have been increasingly associated with people's lifestyles and youths. This cross-sectional study aimed to determine the prevalence of NCCLs in footballers and to address potential risk indicators.

Methods: Fourty-three male semi-professional footballers with an average of 27 years old completed a questionnaire and were subjected to intraoral examination in terms of cervical tooth wear, morphological characteristics of NCCLs, tooth sensitivity, occlusal/incisal wear, and malocclusion classification. Also, laboratory assays were performed to determine salivary parameters: flow rate, pH, buffer capacity, level of Ca (calcium), Na (sodium), and K (potassium) ions, and level of cortisol. The data obtained from the questionnaire and intraoral examinations were subjected to Chi-square and Poisson regression models while the data obtained from the laboratory assays were analyzed by using analysis of variance ($p < 0.05$).

Results: The prevalence of NCCLs was 39.5%. The participants presented predominantly initial lesions with signs of mechanical stress. The daily training time was found as a significant risk indicator ($p = 0.028$). The multivariate analysis showed a significant difference in the variables daily training time ($p = 0.023$), lemon water intake while fasting ($p = 0.002$), toothpaste type ($p = 0.004$), tooth sensitivity ($p = 0.006$); previous orthodontic treatment ($p = 0.003$), and occlusion type ($p = 0.008$). All participants presented normal salivary parameters and levels of cortisol.

Conclusion: The prevalence of NCCLs among footballers was remarkable. The premolars were the most affected teeth and presented symptoms/signs of initial lesions. The daily training time was a dominant risk indicator of NCCLs development. Footballers presented adequate salivary parameters and cortisol levels.

Keywords: Non-carious cervical lesions, Athlete, Saliva, Dentin

- Σε αθλητές ολυμπιακού επιπέδου, η στοματική υγεία δεν ήταν ιδανική
- Το 43% των κλινικών ευρημάτων χρειαζόταν άμεση παραπομπή σε γενικό οδοντίατρο.
- Η στοματική υγεία πρέπει να ενσωματώνεται στον προληπτικό ιατρικό έλεγχο των elite αθλητών πριν από μεγάλες διοργανώσεις.

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CLINICAL FEATURE
ORIGINAL RESEARCH

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Oral health among Dutch elite athletes prior to Rio 2016

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ABSTRACT

Objectives: Elite athletes are at high risk for poor oral health. A screening program to assess oral health and create dental awareness can improve oral health among elite athletes but has not been performed in the Netherlands before. We summarize the first results from such a screening conducted in Dutch elite athletes of the Nederlands Olympisch Committee*Nederlandse Sport Federatie (NOC*NSF, Dutch Olympic Committee).

Methods: In this cross-sectional study, 800 Dutch athletes eligible for the Olympic and Paralympic Games in Rio de Janeiro 2016 were invited to a costless and voluntary oral examination. The decayed, missing, and filled teeth-index (DMFT), the basic erosive wear examination (BEWE) and the Dutch Periodontal Screening-index (DPSI) were used to evaluate athlete's oral health. Information on socio-demographic variables and sport performance were collected in questionnaires.

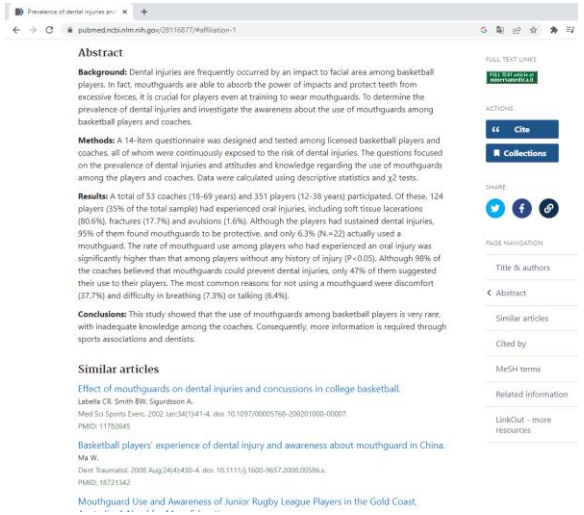
Results: In total, 116 Dutch elite athletes were included in the study. The median (90%-range) DMFT-score was 3.0 (0.0–16.0), the median BEWE-score was 2.0 (0.0–10.0), and the mean± SD DPSI-score was 2.0 ± 0.73. Oral health-related quality of life was generally high, although only 28.2% of the athletes reported never having problems with their dentition or mouth. In 43% of the athlete's clinical findings were reported which needed a direct referral to the general dentist.

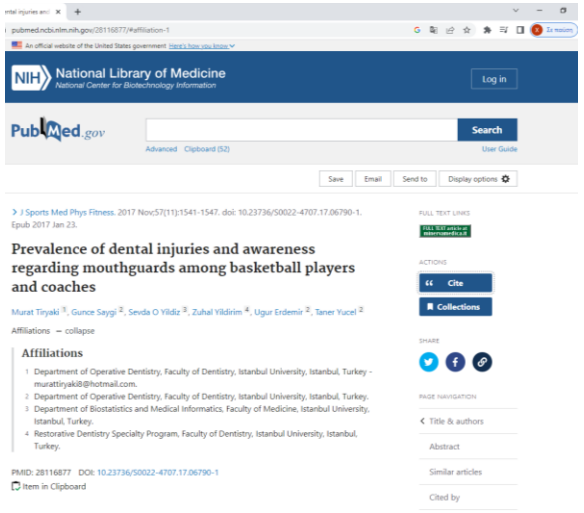
Conclusion: Oral health in this subsample of Dutch elite athletes was surprisingly affected as almost half of them needed dental treatment. Further research is needed to allow conclusions about oral health in Dutch elite athletes more broadly. However, regular screening of oral health incorporated into the general preventive health care of elite athletes is necessary to ensure athletes are fully healthy during competitions like the Olympic and Paralympic Games.

ARTICLE HISTORY
Received 13 August 2018
Accepted 6 November 2018

KEYWORDS
Oral health; screening; elite athletes; Olympics; prevention

- Το 35% των παικτών καλαθοσφαίρισης είχε ιστορικό στοματικού τραυματισμού.
- Παρότι το 95% των παικτών θεωρούσε ότι οι νάρθηκες προστατεύουν, μόνο το 6,3% τους χρησιμοποιούσε.
- Υπάρχει μεγάλο χάσμα ανάμεσα στη γνώση και στην πράξη, ενώ ακόμη και οι προπονητές δεν προτείνουν συστηματικά τη χρήση ναρθήκων.





- Σε επαγγελματίες ποδοσφαιριστές του Ηνωμένου Βασιλείου καταγράφηκε φτωχή στοματική υγεία, με 37% ενεργή τερηδόνα και 53% οδοντική διάβρωση.
- Το 45% των παικτών δήλωσε ότι ενοχλείται από τη στοματική του υγεία.
- Το 20% ανέφερε επίδραση στην ποιότητα ζωής και 7% επίδραση στην προπόνηση ή την απόδοση, στοιχείο ιδιαίτερα σημαντικό για επαγγελματικό αθλητισμό.

› Br J Sports Med. 2016 Jan;50(1):41-4. doi: 10.1136/bjsports-2015-094953. Epub 2015 Nov 2.

Poor oral health including active caries in 187 UK professional male football players: clinical dental examination performed by dentists

Ian Needleman [1], Paul Ashley [2], Lyndon Meehan [3], Aviva Petrie [4], Richard Weiler [5], Steve McNally [6], Chris Ayer [7], Rob Hanna [8], Ian Hunt [9], Steven Kell [10], Paul Ridgewell [11], Russell Taylor [12]

Affiliations + expand

PMID: 26527674 DOI: 10.1136/bjsports-2015-094953

Abstract

Background: The few studies that have assessed oral health in professional/elite football suggest poor oral health with minimal data on impact on performance. The aim of this research was to determine oral health in a representative sample of professional footballers in the UK and investigate possible determinants of oral health and self-reported impact on well-being, training and performance.

Methods: Clinical oral health examination of senior squad players using standard methods and outcomes carried out at club training facilities. Questionnaire data were also collected. 8 teams were included, 5 Premier League, 2 Championship and 1 League One.

Results: 6 dentists examined 187 players who represented >90% of each senior squad. Oral health was poor: 37% players had active dental caries, 53% dental erosion and 5% moderate-severe irreversible periodontal disease. 45% were bothered by their oral health, 20% reported an impact on their quality of life and 7% on training or performance. Despite attendance for dental check-ups, oral health deteriorated with age.

Conclusions: This is the first large, representative sample study in professional football. Oral health of professional footballers is poor, and this impacts on well-being and performance. Successful strategies to promote oral health within professional football are urgently needed, and research should investigate models based on best evidence for behaviour change and implementation science. Furthermore, this study provides strong evidence to support oral health screening within professional football.

- Οι επαγγελματίες ποδοσφαιριστές παρουσίασαν ↑ ποσοστά τερηδόνας και ουλίτιδας,
- Οι Έλληνες ποδοσφαιριστές εμφάνισαν ↑τερηδονισμένα δόντια σε σχέση με τους Γάλλους αθλητές, ενώ οι Γάλλοι εμφάνισαν μεγαλύτερη ανάγκη για εξαγωγές δοντιών.
- Η ουλίτιδα ήταν ιδιαίτερα συχνή και στις δύο χώρες (45% στην Ελλάδα και 42% στη Γαλλία
- Οι αθλητές με υψηλή κατανάλωση ζαχαρούχων και αθλητικών ποτών εμφάνισαν σημαντικά περισσότερες τερηδονικές βλάβες, επιβεβαιώνοντας τον κρίσιμο ρόλο της διατροφής στη στοματική υγεία των αθλητών.
- Η μελέτη αναδεικνύει την ανάγκη ενσωμάτωσης οργανωμένων προγραμμάτων πρόληψης, τακτικών οδοντιατρικών ελέγχων και εκπαίδευσης στη στοματική υγεία μέσα στα επαγγελματικά ποδοσφαιρικά σωματεία.

RESEARCH IN SPORTS MEDICINE
2026, VOL. 34, NO. 1, 80–90
https://doi.org/10.1080/15438627.2025.2567355

Oral health-related status in elite soccer players in France and in Greece

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ABSTRACT

This study examines the clinical oral health status of professional football players in Greece and France. Oral health is crucial to athletes' well-being, as poor oral hygiene and related conditions, such as carious teeth and gingivitis, can lead to pain, infections, and a decline in athletic performance. This study focused on professional football players, examining key oral health indicators, including carious teeth, gingivitis, and teeth needing extraction. Age groups and gender comparisons were made, especially within the French cohort. The results show statistically significant differences between French and Greek players, particularly in terms of carious teeth and tooth extractions. Gingivitis was prevalent in both populations, with no significant differences. These findings underscore the importance of targeted dental interventions for professional athletes to maintain optimal oral health.

ARTICLE HISTORY
Received 9 May 2025
Accepted 23 September 2025

KEYWORDS
Sports dentistry; oral health; soccer players

- Στους Ολυμπιακούς Αγώνες του Λονδίνου, οι αθλητές παρουσίασαν υψηλά ποσοστά τερηδόνας, διάβρωσης και περιοδοντικών προβλημάτων.
- ≥40% των αθλητών δήλωσε ότι ενοχλείται από τη στοματική του υγεία.
- Το 28% ανέφερε επίδραση στην ποιότητα ζωής και το 18% στην προπόνηση ή την απόδοση

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

I Needleman,[1] P Ashley,[2] A Petrie,[3] F Fortune,[4] W Turner,[4] J Jones,[4] J Niggli,[4] L Engebretsen,[5,6,7] R Budgett,[7] N Donos,[1] T Clough,[8] S Porter[9]

ABSTRACT

Background Oral health is important both for well-being and successful elite sporting performance. Reports from Olympic Games have found significant treatment needs; however, few studies have examined oral health directly. The aim of this study was to evaluate oral health, the determinants of oral health and the effect of oral health on well-being, training and performance of athletes participating in the London 2012 Games.

Methods Cross-sectional study at the dental clinic within the Polyclinic in the athletes' village. Following informed consent, a standardised history, clinical examination and brief questionnaire were conducted.

Results 302 athletes from 25 sports were recruited with data available for 278. The majority of athletes were from Africa, the Americas and Europe. Overall, the results demonstrated high levels of poor oral health including dental caries (55% athletes), dental erosion (45% athletes) and periodontal disease (gingivitis 76% athletes, periodontitis 15% athletes). More than 40% of athletes were 'bothered' by their oral health with 28% reporting an impact on quality of life and 18% on training and performance. Nearly half of the participants had not undergone a dental examination or hygiene care in the previous year.

Conclusions The oral health of athletes attending the dental clinic of the London 2012 Games was poor with a resulting substantial negative impact on well-being, training and performance. As oral health is an important element of overall health and well-being, health promotion and disease prevention interventions are urgently required to optimise athletic performance.

are few data available that have explored this relationship.

A recent International Olympic Committee (IOC) Medical Commission report called 'for further studies to assess more accurately the oral health of the athlete population'.[7] Most of the published studies to date have not investigated oral health directly, but, instead, have reported on the dental care provided during the games as a proxy for oral health status. Therefore, in view of the increasing demand for oral care at Olympic Games and the recognised priority for further research, the aim of this study was to evaluate the oral health of elite athletes participating in the London 2012 games and the impact of oral health on well-being, training and performance.

METHODS

Study design

This was a cross-sectional survey.

Eligibility criteria and setting

All athletes participating in the London 2012 Games and able to understand the consent process (or attending with a translator) were eligible. Recruitment took place in the dental clinic of the polyclinic. Athletes attended the dental clinic for a variety of reasons including periodic dental examination and hygiene care, dental problems and provision of mouthguards. Recruitment started 10 days prior to the opening ceremony and finished 1 day following the closing ceremony.

Data collection

ΑΘΛΗΤΕΣ ΚΑΙ ΣΤΟΜΑΤΙΚΗ ΥΓΕΙΑ

- 15-75% Οδοντική τερηδόνα
- 35-85% Διάβρωση
- 0-15% Περιοδοντική νόσος
- 14-47% Οδοντικός τραυματισμός

Ashley et al, 2015

Γιατί είναι σημαντική η στοματική υγεία των αθλητών?

- 5-60% αναφέρουν ότι επηρεάστηκε η ποιότητα υγείας, προπόνηση και αθλητική απόδοση
- 33-66 % αρνητική επίδραση στην ποιότητα ζωής μετά από τραυματισμό
- 18-40% αρνητική επίδραση στην ποιότητα ζωής μετά από τις άλλες παθήσεις
- 5-18% αναφέρουν κακή απόδοση
- Δεν υπάρχουν καταγεγραμμένα δεδομένα για την επίδραση της στοματικής υγείας στην απώλεια ωρών προπόνησης και της απόδοσης κατά τη διάρκεια των αγώνων

Γιατί είναι σημαντική η στοματική υγεία των αθλητών?

- Η κακή στοματική υγεία συσχετίστηκε σημαντικά με αυξημένο κίνδυνο επανατραυματισμών σε elite ποδοσφαιριστές
- Οι αθλητές με ↑ προβλήματα στοματικής υγείας εμφάνιζαν ↑ πιθανότητα μυϊκών τραυματισμών και πολλαπλών επεισοδίων τραυματισμού
- .Η μελέτη υποστηρίζει ότι η στοματική υγεία δεν επηρεάζει μόνο την ποιότητα ζωής αλλά πιθανόν και τη μυϊκή λειτουργία, την αποκατάσταση και τη συνολική αθλητική διαθεσιμότητα.
- Τα ευρήματα ενισχύουν την ανάγκη ενσωμάτωσης οδοντιατρικού ελέγχου και πρόληψης στα ιατρικά πρωτόκολλα των επαγγελματικών ποδοσφαιρικών ομάδων.

Solleveld *et al. BMC Sports Science, Medicine, and Rehabilitation* (2015) 7:11
DOI 10.1186/s13102-015-0004-y

BMC
Sports Science, Medicine & Rehabilitation

RESEARCH ARTICLE Open Access

Associations between poor oral health and reinjuries in male elite soccer players: a cross-sectional self-report study

Henny Solleveld[1], Arnold Goedhart[1*] and Luc Vanden Bossche[2]

Abstract

Background: Although it is well known that oral pathogens can enter the systemic circulation and cause disease, it is largely unknown if poor oral health increases the risk of sports injuries. The purpose of this study is to investigate the association between poor oral health and reinjuries in male elite soccer players, adjusted for psychosocial problems and player characteristics.

Methods: 184 Players in premier league soccer clubs and 31 elite, junior soccer players in the Netherlands, Belgium and England, were enrolled in a retrospective cross-sectional study. The Sports Injury Risk Indicator, a self assessed questionnaire, was used to obtain information on reinjuries, age and player position, oral health and psychosocial problems. The number of different types of oral health problems was used as an indicator of poor oral health. (SumDental, range 0–2: 0 = no oral health problems, 1 = one type of oral health problem and 2 = two or more types of oral health problems). Multivariable logistic regression was used to investigate whether SumDental was associated with reinjuries, after adjustment for psychosocial problems and player characteristics.

Results: 37% of the players reported no oral health problems, 43% reported one type of oral health problem and 20% reported two or more types of oral health problems. After full adjustment for age, player position and psychosocial problems (i.e. injury anxiety, psychophysical stress, unhealthy eating habits and dissatisfaction with trainer/team), poor oral health (SumDental) was positively associated with all kind of reinjuries whether analyzed as a continuous variable or as a categorical variable. The fully adjusted odds ratios for SumDental analyzed as a continuous variable were: in relation to repeated exercise-associated muscle cramps: 1.82 (95% confidence interval (CI): 1.07, 3.12), in relation to muscle or tendon reinjury 1.57 (95% CI: 1.01, 2.45) and in relation to multiple types of reinjury 1.88 (95% CI: 1.19, 2.97).

Conclusion: The results from this study justify a thorough examination of the effects of oral health problems on the injury risk of playing elite soccer.

Keywords: Sports injuries, Soccer, Oral health, Gingival diseases, Dental caries, Dental plaque, Psychosocial factors

Διάβρωση-Τερηδόνα

- Διατροφή
- Αφυδάτωση
- Συμπεριφορά και στάση για την στοματική υγεία

Πηγές οξέων στο στοματικό περιβάλλον του αθλητή

- Δίαιτα (ενεργειακά-αθλητικά ποτά, υδατάνθρακες)
- Ξηροστομία
- Άλλοι παράγοντες (π.χ συχνοί εμετοί κτλ

Δίαιτα

Αθλητικά ποτά (sport drinks)

- ↑ H_2O/C, μεταλλικά στοιχεία και ηλεκτρολύτες

Ενεργειακά ποτά (energy drinks)

- Καφεΐνη, ταυρίνη, βιταμίνες

Μορφή

- Η μορφή και ο τρόπος λήψης καθορίζει και τη διάρκεια επαφής του οξέος με την επιφάνεια του δοντιού.

Επιδημιολογικά στοιχεία

Ο επιπολασμός της διάβρωσης σε αθλητές κυμαίνεται από 36-85% (*Ashley P, et al. Br J Sports Med 2015;49:14–19*)

Η συχνότητα λήψης ενεργειακών και αθλητικών ποτών κυμαίνεται από 55.3–91.3% (*Mathew et al., 2002; Sirimaharaj et al., 2002; Bryant et al., 2011*).

Αφυδάτωση

↑ προπόνηση → αφυδάτωση και απώλεια ηλεκτρολυτών και ↑ stress

↓ ροή σάλιου, μεταβολές στις πρωτεΐνες σάλιου, ↓ ρυθμιστική ικανότητα του σάλιου

↑ προπόνηση →γαλακτικό οξύ→ ↓ pH αίματος→ ↑CO_2 →σάλιο → ↓σιαλικό pH

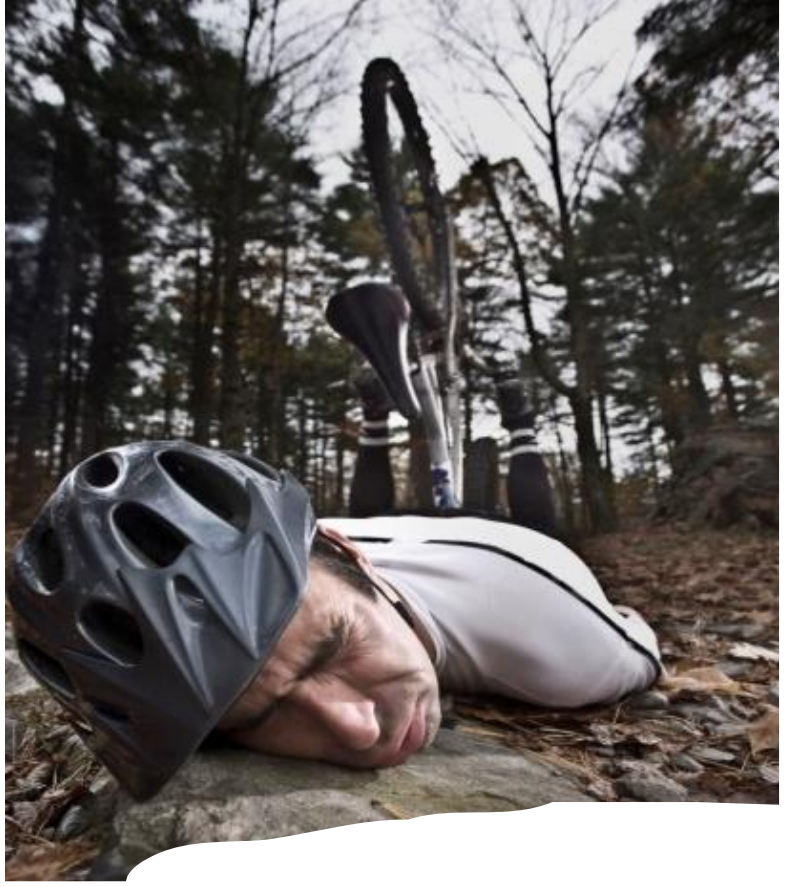
Άλλοι παράγοντες

- Κολυμβητές. Χλωρίωση της πισίνας.

Cl_2 και TCCA (3-χλωρο-ισοκυανουρικό οξύ) → HCl και HOCl → pH 3,0

10-26% επιπολασμός της διάβρωσης

- Δεν υπάρχει διαφορά μεταξύ επαγελματιών και ερασιτεχνών αθλητών (*D'Ercole, J Appl Oral Sci 2016*)
- Συχνή εκδήλωση ΓΟΠ και διατροφικών διαταραχών (αθλητές αντοχής, άρση βαρών κτλ) *Antunes et al, J Oral Sci 2017*



Κίνδυνος τραύματος- Αθλητικές δραστηριότητες

Τραύμα των δοντιών & του προσώπου στην άθληση & στις αθλοπαιδιές

Οι αθλητές αθλημάτων με έντονη σωματική επαφή έχουν **10% πιθανότητα να τραυματισθούν στα δόντια ή στο πρόσωπο** στη **διάρκεια μίας αθλητικής χρονιάς** & **50% στη διάρκεια της σταδιοδρομίας τους.**

Heinz W. Journal of the American Dental Association 1968; 77:632-636. ***Clegg J.*** British Dental Journal 1969; 21:341-343 ***Dorney B.*** FDI World 1998; 7:10-13.

Τραύμα των δοντιών & του προσώπου στην άθληση & στις αθλοπαιδιές

- **3 φορές περισσότεροι είναι οι τραυματισμοί στους αγώνες σε σχέση με τις προπονήσεις.**

Colorado School of Public Health, Program for Injury Prevention. Accessed June 29, 2018.

JID: JORMAS [m5G;November 24, 2022;2:10]

J Stomatol Oral Maxillofac Surg 000 (2022) 1–9

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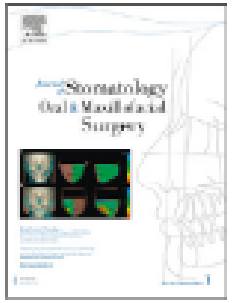
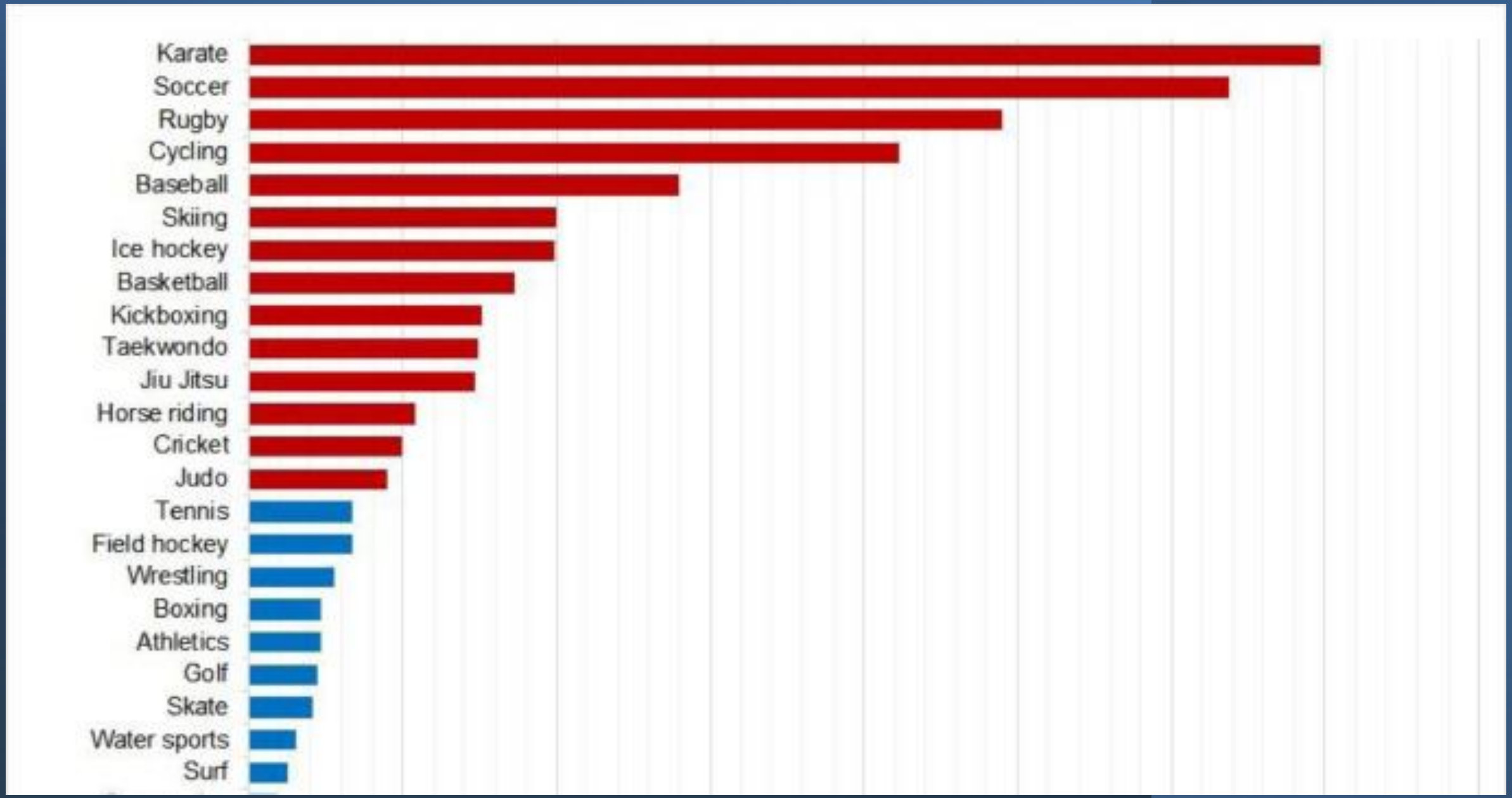


Review

Which sports have a higher risk of maxillofacial injuries?

Ricardo Grillo[a,b,*], Yuri Slusarenko da Silva[c], Marconi Gonzaga Tavares[b], Alexandre Meireles Borba[d], Sahand Samieirad[e], Maria da Graça Naclério-Homem[a]

[a] Department of Oral & Maxillofacial Surgery, Traumatology and Prosthesis – Faculty of Dentistry of the University of São Paulo, Brazil
[b] Department of Oral & Maxillofacial Surgery, Faculdade Patos de Minas, Brasília, Brazil
[c] School of Dentistry – UniFG University Center, (Faculty of Guanambi), Bahia, Brazil
[d] Department of Oral and Maxillofacial Surgery, General Hospital of Cuiaba, Cuiaba, Mato Grosso, Brazil
[e] Department of Oral & Maxillofacial surgery, Mashhad dental school, Mashhad University of Medical Sciences, Mashhad, Iran

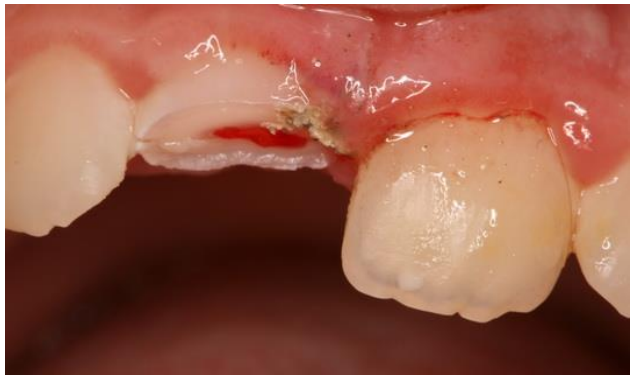

Karate
Soccer
Rugby
Cycling
Baseball
Skiing
Ice hockey
Basketball
Kickboxing
Taekwondo
Jiu Jitsu
Horse riding
Cricket
Judo
Tennis
Field hockey
Wrestling
Boxing
Athletics
Golf
Skate
Water sports
Surf

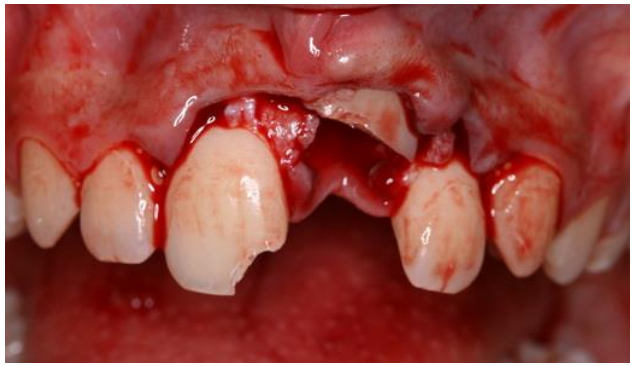
Ποδόσφαιρο

Συνέβη στον καλύτερο ποδοσφαιριστή!

Τελικός κυπέλλου ΠΑΟΚ-ΑΕΚ 15/05/2016

Οδοντικοί τραυματισμοί





Αντιμετώπιση

Α. Ολοκλήρωση της προσπάθειας

- Εξάλειψη πόνου
- Διατήρηση δοντιών/ιστών
- Αποκατάσταση τραυματικής σύγκλεισης
- Ταχεία επούλωση
- Βελτίωση εικόνας ???

Β. Κατά δεύτερο σκοπό στο ιατρείο

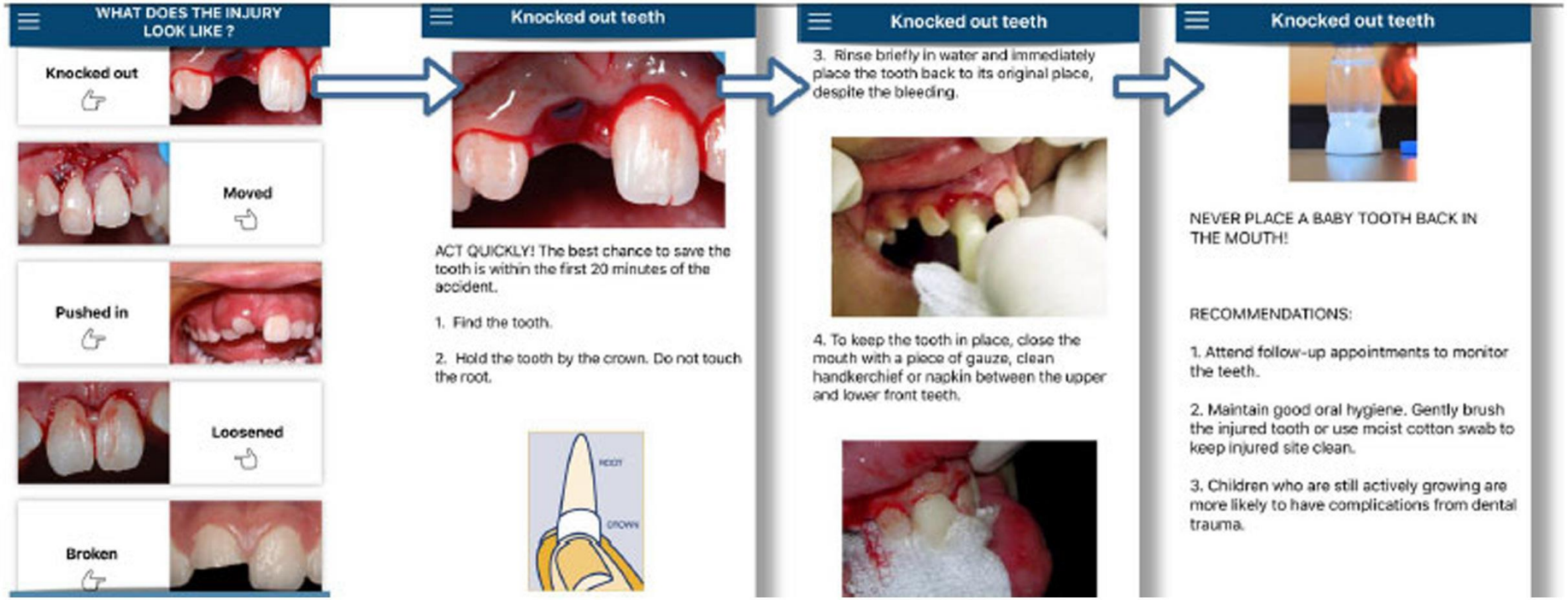
Received: 1 January 2024 | Accepted: 5 January 2024
DOI: 10.1111/edt.12928

Dental Traumatology WILEY

The International Association of Dental Traumatology (IADT) and the Academy for Sports Dentistry (ASD) guidelines for prevention of traumatic dental injuries: Part 8: ToothSOS app

Nitesh Tewari[1] | Paul V. Abbott[2] | Anne C. O'Connell[3] | Stephen C. Mills[4] | Hans Stasiuk[5] | Mark Roettger[6] | Liran Levin[7]

[1]Pediatric & Preventive Dentistry, Centre for Dental Education & Research, All India Institute of Medical Sciences, New Delhi, India
[2]UWA Dental School, University of Western Australia, Nedlands, Western Australia, Australia
[3]School of Dental Science, Trinity College Dublin, The University of Dublin, Dublin, Ireland
[4]Private Practice of Pediatric Dentistry and board of directors of the Children's Oral Health Network of Maine, Scarborough, Maine, USA
[5]Private Practice, Portage la Prairie, Manitoba, Canada. and The University of Manitoba Faculty of Dentistry, Winnipeg, Manitoba, Canada
[6]University of Minnesota Medical Center, Minneapolis, Minnesota, USA
[7]Faculty of Medicine and Dentistry, University of Alberta, Edmonton, Alberta, Canada



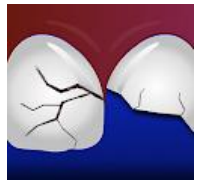
Η ενυδάτωση είναι κρίσιμη

Οποιοδήποτε μέσο είναι αποδεκτό (γάλα, φυσιολογικός ορός, νερό)

ΜΕΤΑΤΟΠΙΣΗ ΔΟΝΤΙΩΝ

1. Πρόκειται για ένα επείγον περιστατικό και χρήζει άμεσης φροντίδας από οδοντίατρο το συντομότερο.
2. Προσπαθήστε να μετακινήσετε τα δόντια με ήπιες κινήσεις πίσω στη φυσική τους θέση.
3. Κλείστε το στόμα με μια μικρή γάζα ή καθαρό μαντήλι ή χαρτοπετσέτα μεταξύ των άνω και κάτω προσθίων δοντιών.
4. Επισκεφτείτε έναν οδοντίατρο ή τα επείγοντα το συντομότερο δυνατό! Οι πρώτες ώρες είναι κρίσιμης σημασίας για την πρόγνωση των δοντιών.

International Association of Dental Traumatology



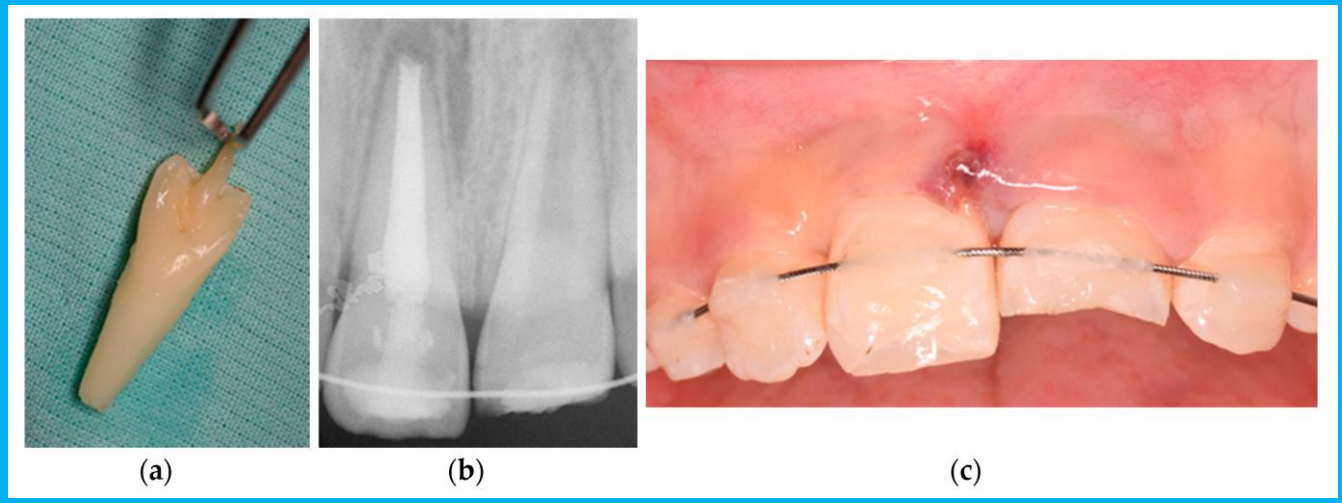
ToothSOS

Εκγόμφωση-πρώτες βοήθειες

- Εάν ένα δόντι αποκολληθεί, βεβαιωθείτε ότι πρόκειται για μόνιμο δόντι (δεν πρέπει να επαναφυτεύονται τα νεογιλά δόντια)
- Βρείτε το δόντι και το πιάνετε από την μύλη.
- Αν δεν είναι καθαρό, ήπιο ξέπλυμα με γάλα, ορό ή το σάλιο του ασθενή και τοποθέτηση του δοντιού στο φατνίο
- Δάγκωμα από τον αθλητή με μια γάζα να διατηρηθεί στη θέση του.
- Αν δεν μπορεί να γίνει άμεση επαναμφύτευση, τότε το διατηρείται σε υγρό περιβάλλον. ΠΟΛΥ ΣΗΜΑΝΤΙΚΟ Η ΑΠΟΦΥΓΗ ΞΗΡΑΝΣΗΣ ΤΗΣ ΡΙΖΑΣ. Τέτοιο υλικό είναι το HBBS, το γάλα, το σάλιο ή ο ορός. Αν και το νερό δεν είναι κατάλληλο, πολύ καλύτερο από το τίποτα.
- Οδοντιατρική αντιμετώπιση άμεσα.
- The poster “Save a Tooth” σε διάφορες γλώσσες: Spanish, English, Portuguese, French, Icelandic, Italian, στο IADT website: https://www.iadt-dentaltrauma.org.
- Η εφαρμογή IADT’s free app ‘ToothSOS’ για κινητά.


Εξωστοματικός _ Ξηρός χρόνος
0’
15’
20’
60’
MIN
επιβίωση κυττάρων PDL

Εκγομφώσεις



a. Άμεση επανατοποθέτηση, 60’ (γάλα, HBSS, σάλιο, αλατούχο νερό)
b. Ακινητοποίηση-Αντιβίωση

International Association of Dental Traumatology

- I HAVE A TOOTH INJURY
- HOW TO PREVENT DENTAL INJURIES

Hank’s balanced salt solution (HBSS) is isotonic solutions used to maintain osmolality and pH in biological applications. HBSS includes glucose and sodium bicarbonate for short-term maintenance of cells outside of growth medium.

RETURN-TO-PLAY(RTP)

Ο αθλητής ΔΕΝ συνεχίζει(την ίδια μέρα τουλάχιστον) εάν:
Υποπτευμένο κάταγμα γνάθου ή προσώπου
Διάσειση
Εκγόμφωση ή σημαντική μετακίνηση δοντιού
Έντονος πόνος κατά την ομιλία/μάσηση
Διαρκής αιμορραγία στο στόμα
Αλλαγή σύγκλεισης, εμφανής κριγμός

Νάρθηκες

- Προστασία
- άνεση
- ελαστικότητα
- Ουδέτερη γεύση-οσμή
- οικονομικός
- Ευκολία χρήσης

Δεν εμποδίζει την επικοινωνία, την αναπνοή και την αθλητική δραστηριότητα

ADA και ASD

Ποδόσφαιρο (soccer)	Καλαθοσφαίριση (basketball)	Υδατοσφαίριση (water polo)	Αετοσανίδα (Skydiving)
Ποδηλασία	Πετοσφαίριση (Volleyball)	Surfing	Πάλη
Άρση βαρών	Χειροσφαίριση (Handball)	Skateboarding	Πυγμαχία
Αθλήματα στίβου	Ενόργανη Γυμναστική	Πολεμικές Τέχνες	Ιππασία
Rugby	Ακροβατικά αθλήματα	Σκι	Squash
Baseball	Bandy	Inline Skating	Softball
Αμερικάνικο Ποδόσφαιρο	Χόκεϋ (επί χόρτου)	Σφαιροβολία	Racquetball
Lacrosse	Χόκεϋ (επί πάγου)		

Types of Mouth Guards

1

Over the Counter

Rubber or polyvinyl and sold in small, medium or large sizes.

2

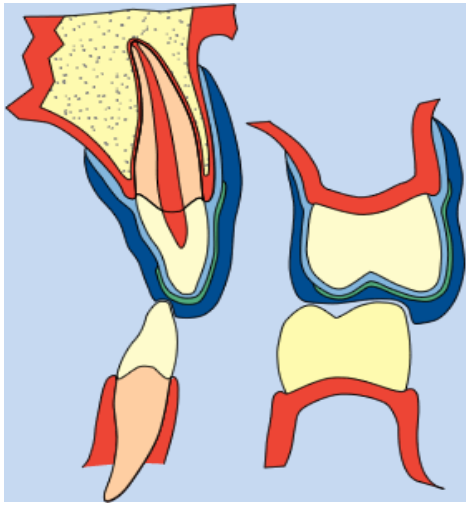
Boil-and-Bite

Boiled in water and formed to the teeth.

3

Custom-Made

Custom made from a full-mouth impression.



- Οδοντιατρείο ή εργαστήριο
- Μεγαλύτερο κόστος
- Άψογη προσαρμογή
- ↑προστασία
- Διευκολύνει τις λειτουργίες
- εξατομίκευση

Οι αθλητικοί νάρθηκες παρέχουν προστασία από τραυματισμούς στην γναθοπροσωπική περιοχή;

Sports Medicine (2019) 49:1217–1232
https://doi.org/10.1007/s40279-019-01121-w

SYSTEMATIC REVIEW

Effectiveness of Mouthguards for the Prevention of Orofacial Injuries and Concussions in Sports: Systematic Review and Meta-Analysis

Joseph J. Knapik[1] · Blake L. Hoedebecke[2] · Georgia G. Rogers[3] · Marilyn A. Sharp[1] · Stephen W. Marshall[4]

Published online: 30 May 2019

Abstract

Background Sport activities can account for up to one-third of all orofacial injuries. Mouthguards (MGs) have been proposed as a way to reduce these injuries.

Objectives To present a systematic review and meta-analysis of the effectiveness of MGs for the prevention of sports-related orofacial injuries and concussions.

Methods Using specific search terms, PubMed, Ovid Embase, and the Cumulative Index to Nursing and Allied Health Literature were searched to find studies that (1) contained original quantitative data on MGs and orofacial injuries and/or concussions, (2) included groups involved in sports or exercise activities, (3) included MG users and non-MG users, and (4) provided either risk ratios (RRs) and 95% confidence intervals (95% CIs) comparing injuries among MG users and non-MG users, or data that could be used to calculate RRs and 95% CIs.

Results Twenty-six studies met the review criteria. Investigations employed a variety of study designs, utilized different types of MGs, used widely varying injury case definitions, and had multiple methodological weaknesses. Despite these limitations, meta-analyses indicated that the use of MGs reduced the overall risk of orofacial injuries in 12 cohort trials (summary RR [nonusers/users] = 2.33, 95% CI 1.59–3.44), and 11 trials involving self-report questionnaires (summary RR [nonusers/users] = 2.32, 95% CI 1.04–5.13). The influence of MGs on concussion incidence in five cohort studies was modest (summary RR [nonusers/users] = 1.25, 95% CI 0.90–1.74).

Conclusion These data indicate that MGs should be used in sports activities where there is significant orofacial injury risk.

What strategies can be used to effectively reduce the risk of concussion in sport? A systematic review

Carolyn A Emery [1], Amanda M Black [1], Ash Kolstad [1], German Martinez [1], Alberto Nettel-Aguirre [1], Lars Engebretsen [2, 3, 4], Karen Johnston [5, 6], James Kissick [7, 8, 9], David Maddocks [10], Charles Tator [11, 12], Mark Aubry [13, 14, 15], Jiří Dvořák [16, 17], Shinji Nagahiro [18], Kathryn Schneider [1]

Correspondence to Dr Carolyn A Emery, Sport Injury Prevention Research Centre, Faculty of Kinesiology and Departments of Pediatrics and Community Health Sciences, Cumming School of Medicine, University of Calgary, 2500 University Dr. NW, Calgary, Alberta T2N1N4, Canada; caemery@ucalgary.ca

Abstract

Aim or objective To examine the effectiveness of concussion prevention strategies in reducing concussion risk in sport.

Design Systematic review according to the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analysis) guidelines.

Data sources Eleven electronic databases searched and hand-search of references from selected studies.

Eligibility criteria for selecting studies The following were the study inclusion criteria: (1) contained original human research data; (2) investigated an outcome of concussion or head impact; (3) evaluated a concussion prevention intervention; (4) included sport participants; (5) analytical study designand (6) peer-reviewed. The following were the exclusion criteria: (1) review articles, case series or case studies and (2) not in English.

Results The studies selected (n=48) provided evidence related to protective gear (helmets, headgear, mouthguards) (n=25), policy and rule changes (n=13) and other interventions (training, education, facilities) (n=10). Meta-analyses demonstrate a combined effect of a 70% reduction (incidence rate ratio (IRR)=0.3 (95% CI: 0.22 to 0.41)) in concussion risk in youth ice hockey leagues where policy disallows body checking, and the point estimate (IRR=0.8 (95% CI: 0.6 to 1.1)) suggests a protective effect of mouthguards in contact and collision sport (basketball, ice hockey, rugby).

Summary/conclusions Highlights include a protective effect of helmets in skiing/snowboarding and the effectiveness of policy eliminating body checking in youth ice hockey. Future research should examine mouthguards in contact sport, football helmet padding, helmet fit in collision sport, policy limiting contact practice in youth football, rule enforcement to reduce head contact in ice hockey and soccer, ice surface size and board/glass flexibility in ice hockey and training strategies targeting intrinsic risk factors (eg, visual training).

Systematic review registration PROSPERO 2016:CRD42016039162

http://dx.doi.org/10.1136/bjsports-2016-097452

Δεν μπορώ να αναπνεύσω!

Received: 21 July 2020 | Revised: 24 February 2021 | Accepted: 2 March 2021
DOI: 10.1002/cre2.422

ORIGINAL ARTICLE

Clinical and Experimental Dental Research WILEY

Investigating the effect of mouth guard use on aerobic performance in amateur boxers

Irfan Ahmed[1] | **Courtney Kipps**[1] | **Peter Fine**[2]

[1]Institute of Sport, Exercise and Health, University College London, London, UK
[2]University College London Eastman Dental Institute, London, UK

Correspondence
Peter Fine, University College London Eastman Dental Institute, 123 Gray's Inn Road, London WC1X 8WD, UK.
Email: p.fine@ucl.ac.uk

Funding information
No relevant declarations. The manuscript was prepared as part of the academic element of an MSc course.

Abstract

Objectives: To assess if wearing a mouth guard impacts maximal aerobic capacity in amateur boxers.

Materials and Methods: A prospective crossover cohort (pilot) study was conducted to assess maximal aerobic capacity in amateur boxers using the 20 m multi stage fitness test (MSFT). Two primary outcomes measures were recorded: (1) the maximum oxygen uptake (peak VO_2—mL/kg/min) and (2) distance run (meters—m). Thirteen amateur boxers completed the MSFT 7 days apart under control (no mouth guard—C) and intervention conditions (mouth guard—MG). Participants also submitted data on height, weight, type of mouth guard and Rate of Perceived Exertion (RPE) during the test.

Statistics: Paired *T*-test.

Results: Mouth guard use was shown to reduce peak VO_2 and distance run during the 20 m MSFT from 56.31 to 54.12 mL/kg/min and 2572 to 2380 m respectively ($p < 0.05$). Twelve out of 13 participants wore a Boil & Bite mouthguard and recorded lower peak VO_2 scores (−4.38%) when wearing a mouth guard compared to control conditions, (Mean = −2.46 mL/kg/min, Range of decrease = 4.2–0.9 mL/kg/min; $p < 0.05$). Ten participants submitted data on RPE—One participant with a custom made mouthguard reported no change in RPE in mouthguard conditions, while nine participants reported an average (+30.5%) increase in mean RPE in Boil & Bite mouthguard conditions compared to control conditions.

Conclusions: Boil & Bite mouth guard use was shown to significantly reduce aerobic performance in amateur boxers and increase the perceived rate of exertion during the 20 m MSFT.

KEYWORDS
mouthguard, contact sport, dental trauma, soft tissue

Randomized Controlled Trial > Int J Sports Med. 2021 May;42(5):448-455.
doi: 10.1055/a-1236-3814. Epub 2020 Oct 29.

Effects of Custom-made Mouthguards on Cardiopulmonary Exercise Capacity

Johannes Lässing [1], Antina Schulze [1], Stefan Kwast [1], Roberto Falz [2], Maximilian Vondran [3], Thomas Schröter [4], Michael Borger [1 4], Martin Busse [1]

Affiliations + expand

PMID: 33124016 DOI: 10.1055/a-1236-3814

Abstract

The importance of using mouthguards as well as their low acceptance rate have been demonstrated. The aim of this study was to investigate the influence of customized mouthguards on hemodynamics.. This randomized crossover study used data from 13 subjects (23.5±1.4 years). The cardiopulmonary and metabolic parameters were observed during ergometer tests without mouthguard (control) in comparison to two types of mouthguards (with and normal without breathing channels). Maximum ventilation was significantly decreased with the normal mouthguard (113.3±30.00 $l \cdot min^{-1}$) in contrast to the mouthguard with breathing channels (122.5±22.9 $l \cdot min^{-1}$) and control (121.9±30.8 $l \cdot min^{-1}$). Also the inspiration time was longer when using the normal mouthguard (0.70±0.11 s) compared to the mouthguard with breathing channels (0.63±0.11 s) and control (Co 0.64±0.10 s). Lactate was also increased under the influence of the mouthguard with breathing channels (10.72±1.4 mmol $\cdot l^{-1}$) compared to the control (9.40±1.77 mmol $\cdot l^{-1}$) and the normal mouthguard (9.02±1.67 mmol $\cdot l^{-1}$). In addition, stroke volume kinetics (p=0.048) and maximum heart rates (p=0.01) show changes. Despite equal levels of oxygen uptake and performances under all three conditions, the use of mouthguards showed differences in cardiopulmonary parameters. The use of mouthguards during exercise does not affect physical performance and can be recommended for injury prevention.

Θα έχει αρνητική επίδραση στην απόδοση μου;

Injury 52 (2021) 825–830

Contents lists available at ScienceDirect

Injury

journal homepage: www.elsevier.com/locate/injury

A randomized crossover study on the effects of a custom-made mouthguard on cardiopulmonary parameters and cortisol differences in a validated handball specific course

Johannes Lässing*, Antina Schulze, Roberto Falz, Stefan Kwast, Martin Busse

Institute of Sport Medicine and Prevention, University of Leipzig, Germany

ARTICLE INFO

Article history:
Accepted 24 September 2020

Keywords:
dental prevention in sports
ventilation
exercise cortisol
sports-specific stress

ABSTRACT

Background: The importance of mouthguards for handball players has been proven however, most players are reluctant to use it. The impact on physical capacity is assessed heterogeneously in the literature. This study aimed to investigate the influence of custom-made mouthguards (CMGs) under handball specific stress.

Methods: This randomized crossover study used data from 15 youth professional handball players (age 17.0 ±0.5 years, weight 85.1±8.0 kg and height 191.2±6.9 cm) who performed a validated handball specific course and a lung function test. Pulmonary (spirometry), metabolic (blood lactate), and cortisol parameters were observed using a normal custom-made mouthguard without (nCMG) and with respiratory channels (CMGvent) in comparison to no mouthguard (Co).

Results: In resting spirometry, no differences in the parameter peak flow were observed using the CMGvent (9.57±1.59 l·s-1) and nCMG (9.17±1.03 l·s-1) in comparison to the Co (9.38±1.26 l·s-1). Under maximum stress, there were no differences in ventilation using CMGvent (151.2±15.64 L ·min-1), nCMG (148.6±12.51 l·min-1), and without mouthguard (145.8±14.32 l·min-1). Similar oxygen uptake was observed when using a CMGvent (45.51±4.14 L ·min-1·kg-1), nCMG (45.50±5.06 ml·min-1 ·kg-1), and without CMG (Co 43.90±4.02 mL ·min-1). The parameters of HR (CMGvent 185.2±11.63 bpm vs. Co 179.4±13.24 bpm p=0.46, nCMG 178.2±11.54 bpm vs. Co p=0.97; CMGvent vs. nCMG p=0.08) and in the blood lactate values (CMGvent: 9.66±2.3 mmol·l-1 vs. Co 9.07±2.1 mmol·l-1 p=0.63; nCMG 9.39±2.8 mmol·l-1 vs. Co p=0.87; CMGvent vs. nCMG p=0.91) displayed no differences. The cortisol production under stress showed no differences in the performance with the CMGvent (1.78±3.58 ng/ml), nCMG (0.74±4.52 ng/mL), and in the procedure without mouthguard (0.25. ±5.01 ng/ml).

Conclusion: The results showed that under stress, there were no differences in the cortisol, ventilation, cardiac, and metabolic responses for all three conditions. Finally, the study shows that the use of a custom-made mouthguard does not negatively affect handball specific performance. Due to the preventive aspect of the mouthguard, the use of a custom-made mouthguard in handball is strongly recommended.

Introduction

communication in playing, breathing [3,4] and unpleasant aesthetics [5,6]

Θα έχει αρνητική επίδραση στην απόδοση μου;

CONCISE REVIEW

International Dental Journal 2019; 69: 25–34

doi: 10.1111/idj.12406

Is there enough evidence that mouthguards do not affect athletic performance? A systematic literature review

Gustavo Barbosa Ferreira[1], Ludmila Silva Guimarães[1], Claudio Pinheiro Fernandes[2], Reinaldo Brito Dias[3], Neide Pena Coto[3], Lívia Azeredo A. Antunes[2] and Leonardo Santos Antunes[2]

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Background: Although there is evidence that mouthguards prevent orofacial trauma occurrence during sport practice, the influence of this device on athletic performance has not been systematically quantified. **Objectives:** We aim to systematically review the literature to determine the effect of mouthguards on athletic performance and if the type of mouthguard influences this overcome. **Materials and methods:** A comprehensive search was performed in the Systematic Electronic Databases: Pubmed, Scopus, Web of Science and the Cochrane Library from their inception to February 2017. The publications were grouped based on their outcome: (i) the use of mouthguards; or (ii) the type of mouthguards. We conducted descriptive analyses and quality assessments of the included studies. **Results:** The search identified 489 citations. After screening the studies, we identified 15 trials comprising a population of 312 athletes. According to the risk of bias evaluation, nine studies were considered 'high' risk of bias, and six 'low' risk of bias. Overall, custom-made mouthguards did not interfere or improve athletes' performance when compared with the control group (without mouthguard). Custom-made mouthguards showed the smallest range of changes in players' performance compared with other types of mouthguards. **Conclusions:** This systematic review provides evidence for sports professionals to advocate the use of custom-made mouthguards to prevent injury, and these devices do not impair performance. The scientific evidence should be interpreted carefully because there is a great variability in outcome measures and lack of important methodological details.

Key words: *Mouthguard, mouth protectors, performance, prevention, systematic review*

Θα έχει αρνητική επίδραση στην απόδοση μου;

Review

Thieme

Mouthguard Use and Cardiopulmonary Capacity – A Systematic Review and Meta-Analysis

OPEN ACCESS

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Key words

sports, mouth protectors, pulmonary gas exchange

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ABSTRACT

This study aimed to perform a systematic review and meta-analysis of the literature to determine the effects of the use of mouthguards (MGs) on cardiopulmonary capacity in athletes (oxygen uptake: VO_2 max, and minute ventilation: VE max). Seven electronic databases and reference lists of relevant papers were searched for randomized clinical trials (RCTs) that compared the cardiopulmonary capacity in athletes with and without the use of an MG. The risk of bias tool of the Cochrane Collaboration was used for quality assessment. Fourteen studies were included. For both the overall VO2 max and VE max analyses, significant differences were observed between the MG and no MG conditions, favoring no MG, which presented the highest VO2 max values ($p = 0.0001$; 95 % CI; −2.638 to −1.728) and the highest VE max values ($p = 0.0001$; 95 % CI; −4.103 to −1.354). When the results were analyzed separately for each subgroup (type of MG and place of use), the meta-analysis showed that the effect of the use of an MG on VO2 max and VE max was not significant when custom-made MGs were used. The use of an MG overall decreased VO2 max and VE max compared to the control. Nevertheless, custom-made MGs seem to have no effect on these parameters.

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Article

The Effect of Wearing a Customized Mouthguard on Body Alignment and Balance Performance in Professional Basketball Players

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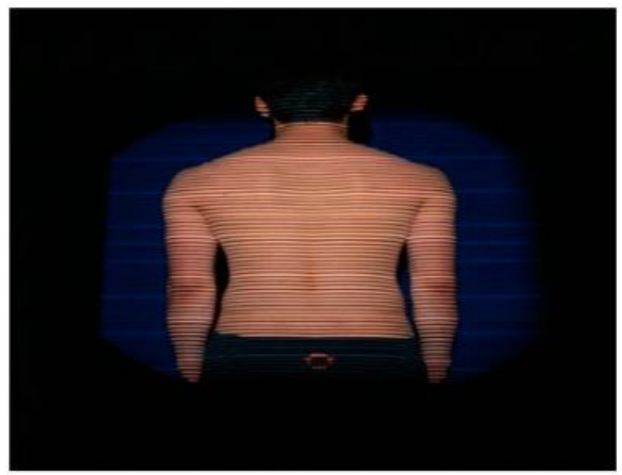
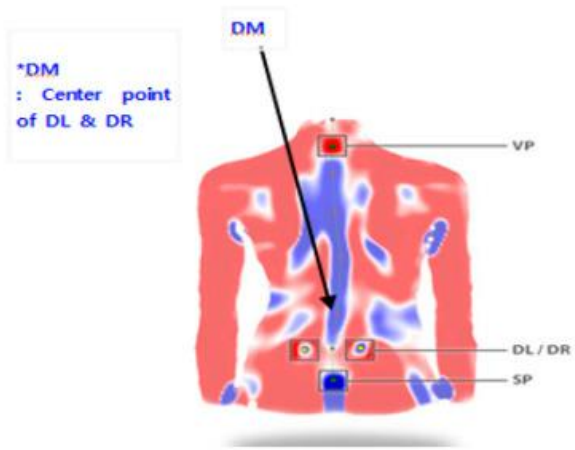
Abstract: The present study examined the influence of a customized mouthguard on body alignment and balance performance in professional basketball players. Twenty-three professional male basketball players, aged 25.8 ± 8.6 years old, were voluntarily assigned to participate in three treatments, including no treatment (no mouthguard), acute treatment (wearing a mouthguard), and repeated treatments (8 weeks follow-up). Body alignment status, such as spinal and pelvic posture and balance performance, were measured at each time point using a 3D Formetric III (Germany) and a postural control device (Posturomed 202, Germany), respectively. A repeated MANOVA analysis with a Bonferroni post hoc test was applied, and the adjusted p-value was set at 0.02. No significant treatment effect was observed in body alignment ($p = 0.302$). However, univariate analysis showed a significant difference in pelvic torsion, where it was decreased after acute and repeated mouthguard treatments compared to no treatment ($p < 0.001$). Kyphotic angle also increased significantly following 8 weeks of treatment compared to no treatment ($p < 0.001$) and acute treatment ($p < 0.002$). There was a significant treatment effect on balance performance ($p < 0.001$). Both static and dynamic balance performance improved following 8 weeks of treatment ($p < 0.001$). Our study revealed that a customized mouthguard provides a benefit to balance performance. Notably, repeated treatment impacts on balance performance more than acute treatment. Although our findings did not show a significant effect on body alignment, some positive results, such as pelvic torsion and kyphotic angle, may provide substantial information for developing future longitudinal studies with large sample sizes.

Keywords: body alignment; static balance; dynamic balance; basketball; mouthguard





Οι αθλητικοί νάρθηκες αποτελούν ένα ικανοποιητικό προστατευτικό μέσο για τους οδοντικούς τραυματισμούς

↑ ποσοστό αθλητών δεν γνωρίζουν την ύπαρξη και την χρησιμότητα των αθλητικών ναρθήκων

Οι αθλητικοί νάρθηκες δεν επηρεάζουν αρνητικά την απόδοση των ασθενών

FIGURE 1 Universal Dental Examination in Sports Protocol, page 1.

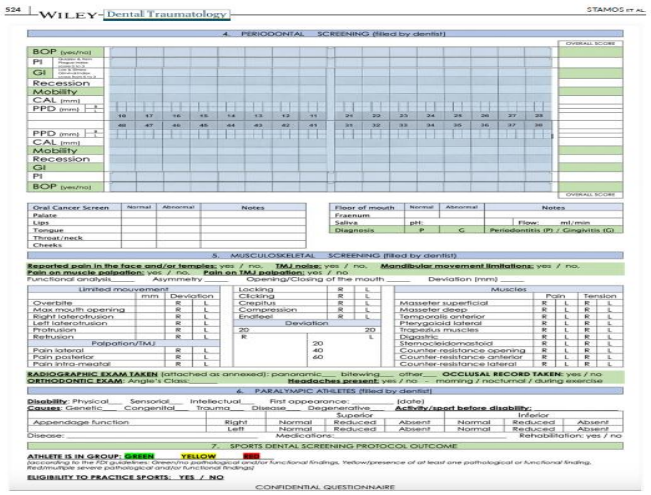


FIGURE 2 Universal Dental Examination in Sports Protocol, page 2.

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Dental Traumatology WILEY

COMPREHENSIVE REVIEW

A suggested universal protocol for dental examination in sports

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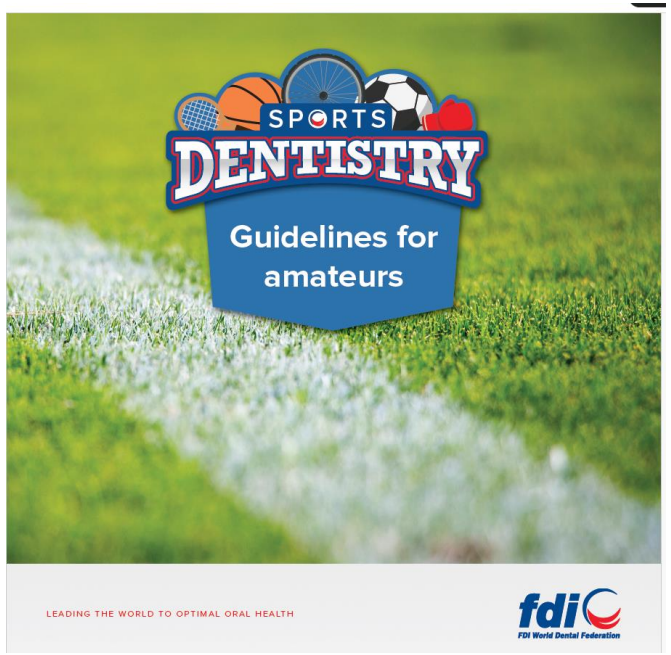
Abstract

The athletes of any sport and level submit their bodies to constant exercise. Any given pathology can increase the risk of injury, illness, or even reduced performance. The medical examination is valuable in diagnosing existing health problems and preventing medical issues that might compromise the athlete's overall health when exercising. The stomatognathic system is not an exemption, as oral pathologies, including dental caries and periodontal diseases, are found in high incidence in sports. The need for accurate and detailed dental examination in sports leaded dentists from the European Association for Sports Dentistry and the Academy for Sports Dentistry to elaborate a universal dental examination in sports protocol that can record the overall oral health of the athlete, including the teeth, periodontium, and musculoskeletal screening, for all athletes. The outcome of this stomatognathic examination allows sports physicians and professionals other than dentists to have a complete image of the individual oral health condition of any given athlete, and it allows the dentists to efficiently screen and prevent pathologies, as well as to advise on the eligibility to practice sports from the oral health perspective.

KEYWORDS
athletes, oral health problems, screening examination protocol, sports dentistry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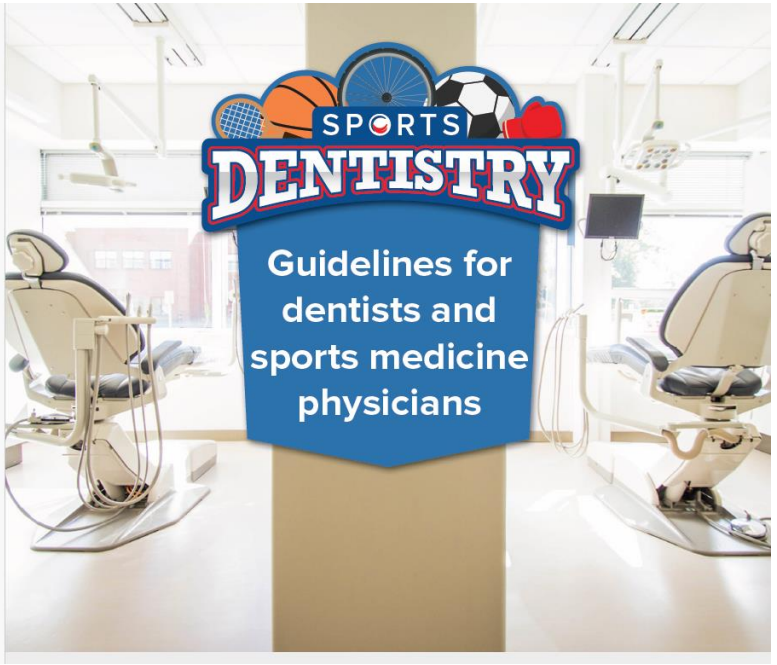
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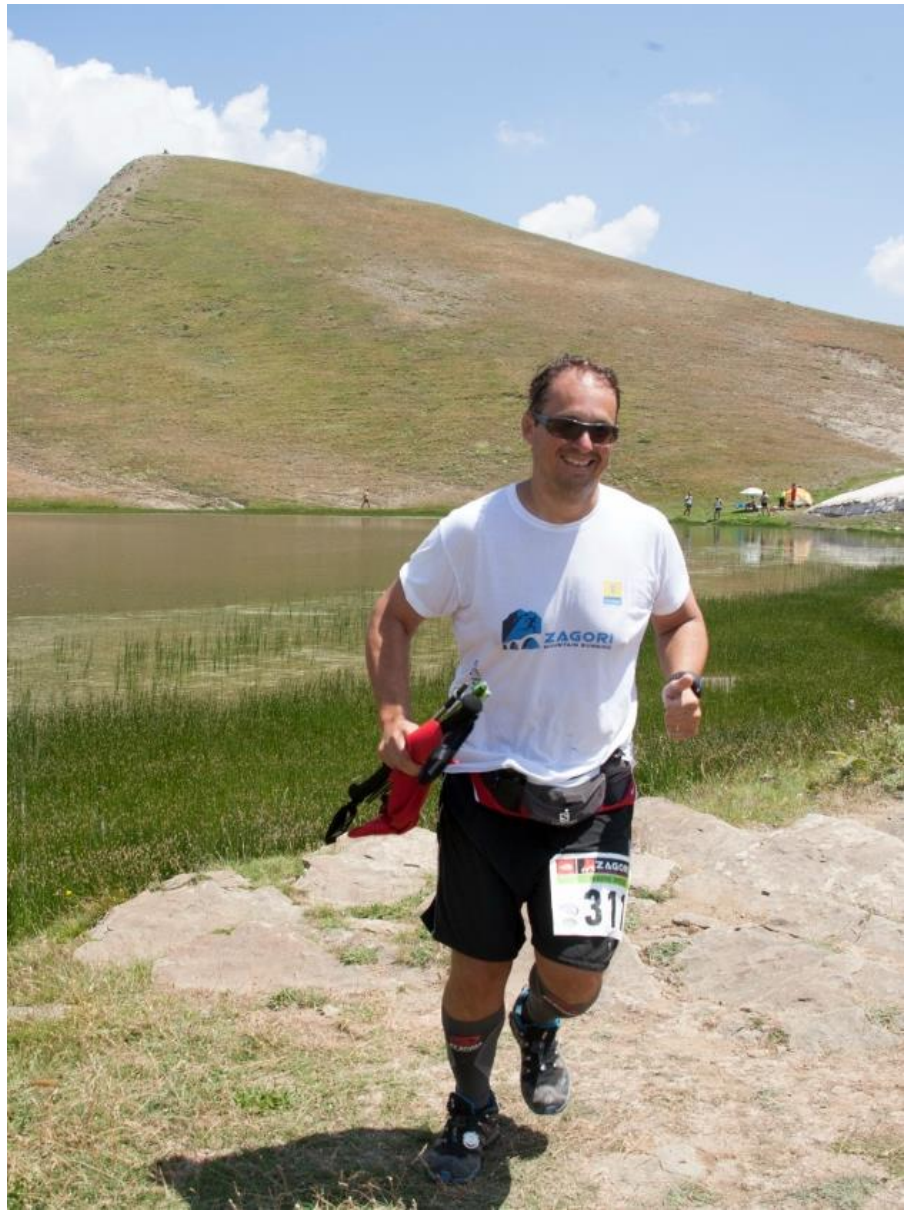
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