WRITTEN BY WOMEN

SPORTS DENTISTRY

from amateur athlete to professional, where does dentistry fit in?

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VOL I

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ClaraPadilha
Odontologia

Credits

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Rua Manoel Athanásio Correia, 89, sala 1
Balneário Camboriú-SC - 88332-150
(47) 3361 7555

www.oitonovetres.com.br
www.clarapadilha.com.br

Preface

I received the invitation from Profª. Dr. Clara Padilha to preface this book that received the name "Sports Dentistry - written by women". Being a woman who researches and works in our expertise area for a long time and with great enthusiasm, I fell honored.

When I received the work, I felt proud! Seeing women and dentists so young, moving and working to learn and disseminate knowledge in this area that, currently, attracts more men.

The intention of this work is, in a simple way, show the universe of Sports Dentistry to colleagues and athletes who are interested in obtaining more knowledge in the area.

These eight colleagues who went out of their way to talk a little about diverse and interesting subjects, distributed in 18 chapters dynamically written in an easy-to-read text.

In this e-book you will have knowledge of what Sports Dentistry is, at what levels we can act, from the school, passing through youth categories, to the focus on elite athletes of different modalities. Current issues such as dental erosion, salivary biomarkers, diet and the influence of stress and oral problems on the athlete's health and consequently on his performance, are described throughout this work. They are chapters of quick and pleasant reading!

I am sure that you, like me, will indulge in this reading and, when finished, will feel like reading again.

I congratulate the authors! I feel very well represented in this team of competent colleagues!

I am grateful for the honor of prefacing this work, already awaiting a second edition.

Professor Neide Pena Coto

University of Sao Paulo

Summary

Summary

Sports dentistry: our needs

Juliana Órsia

Although sports dentistry has already established itself in Brazil, we are in historical scenario that can be compare to an open box, whose internal space has some treasures stored, but still have a large space to be fill.

In fact, it is a growing area and brings two aspect that require the dentists attention:

The responsible aspect for the inclusion of Sports Dentistry in the formation of dental surgeon – graduate or not.

The responsible aspect for the presentation and awareness to the public – professional or amateur athletes.

Studies that asses athlete's education about oral health or about sports dentistry, can give as an idea. From them, we can get information about the context we are in, points that need to be addressed and disseminated, as by the athletes point of view (which perfectly shows his real needs) as by the dentist's performance.

In 2017, five researchers of Newton Paiva University Center (Belo Horizonte, Minas Gerais) published a study** that investigated knowledge and habits in soccer and basketball athletes. They were Brazilian Confederation of Soccer and Brazilian Confederation of Basketball athletes, which gave them a high degree of performance requirement. And soccer players

have dental care available.

Analyzing separately the sports we can notice that in soccer:

- Even though they have dental care available, 50% of players reported that doesn't think that the use of mouthguard is important for their sport and other 5% even know about it.

And in basketball,

- More than half of the players considered important use mouthguard in their sports, and yet, most part don't agree or didn't know that oral problems can interfere in physical performance. As expected they didn't agree and know that dentist can help in physical performance.

These results reflected (and still reflect) the need of communicating between athlete and dentist to health care awareness. In soccer, the responsibility is even bigger since they have dental service available. And in basketball, we know the mouthguard use is more widespread but, the athlete's knowledge about this subject shows that we still have some opportunity that haven´t been explore by the dentist yet.

We officially became especially in 2014/2015 e that's why we open Sports Dentistry box.

Already stocked a lot of good things on, but promotion health care in sports campaign will always be welcome, becau-

se we still have plenty of space.

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How to introduce Sports Dentistry to an athlete

Juliana Órsia

In the real context we observe some common situations to the athlete in Dentistry:

a) the athlete has the need for dental care and is aware of it, but has probably never realized that he could find expert help;

b) the athlete has not even realized the need for dental care (since he is a public used to living with pain and injury) and will probably develop the dental problem, until the resolution becomes urgent;

We have a great role to play in our lecture.

You may not think so, but presenting the area, even in a chat that may come in handy, requires knowledge and strategy to achieve the goal of raising awareness of the importance of our work.

Sports dentistry is beautiful and exciting; yes - for those who like - but imagine a situation where you have the unique opportunity to face a very famous athlete or face a great football team and have only 10 minutes to present Dentistry and to convince our extreme importance in the sports environment. What cold in the belly isn't it? (It has happened to me several times, I had to improvise!). And I'm sure it will happen to every dental surgeon who seeks advancement on this path. But calm down, come with me to come up with a strategy to facilitate.

Scoring 4 topics, we can cover all the important subjects and build a thought with beginning, middle and end:

- Present who we are and explain the main objectives of the area;
- Comment on some specific risk factors and related illnesses;
- Explain how sports dentistry operates;
- Comment on the application of some treatments.

Come on!

1. Present who we are and explain the objectives of the area:

We need to start from the beginning (really? Yes!) So before arguing with very complex physiological theories let's say who we are in general.

Sport Dentistry is a specialty within Dentistry that aims to “study, prevent and treat dental, alveolar and facial trauma, seeking to maintain the athlete's good oral health, promoting health always with the intention of improving athlete's performance”

2. Comment on some specific risk factors and related illnesses

Risk factors support us in arguing about our importance - which comes directly from the athlete's real need. And here we can comment on: a) dehydration b) xerostomia c) immune suppression versus recovery and fatigue d) super caloric diet

and nutritional challenges c) increased risk for direct and indirect injuries...

Anyway, routine and physical and mental health of the athlete are completely differentiated and require specific look at it.

3. Explain how sports dentistry works:

The ultimate goal of the sports dentist is to put your athlete on high performance. Within this goal, we operate by respecting training schedules and competitions as dentists covering emergencies at sporting events (dentists cutmans), serving in the office, working within clubs and teams.

4. Comment on some treatments application

With a golden key, a good tip is to close the subject by talking about the importance of injury prevention and introducing our dear sports mouthguard, dentistry solutions, the importance of periodontics in combating inflammation / infection, updated anti-doping treatment (WADA), diet monitoring and specific hygiene care.

Reference

“ODONTOLOGIA DO ESPORTE. Um novo caminho. Uma nova especialidade. Namba, Eli Luis. Padilha, Clara.

Sport Dentistry available for all

Juliana Órsia

Have you ever stopped to question the applicability of Sports Dentistry?

If you have arrived to this article, you are probably aware that we are no longer crawling in the specialty, we already have our study and clinical science very firmly grounded in proven truths; we are mature and must think further.

Resuming the real need of this field, we concluded that, at a certain moment in history, dentistry had to focus its attention on a group of patients that differed from the others by the sum of stimuli to which they were submitted and, therefore, required dental care aimed at the patient's needs.

Among these stimuli, we find:

1) physical fatigue - constant process of injury

2) repetitive exercises for developing one - or several - skills

3) psychological stress and charge for achievement

4) hyper and / or hypo caloric diet with its peculiarities

5) Exposure to a specific environment and / or climate (sun, heat, cold, wind, sea, wind, humidity, atmospheric pressure, etc.)

6) presence or absence of hormonal modulations

Physiologically, the sum of these stimuli makes up the group that we call "athletes," to which we direct our science and apply

the variables of all dental treatments.

But I come to ask you: would only athletes be exposed to these same stimuli? Or can we find other individuals who, even if they are not athletes, are exposed to all of these stimuli and could enjoy the articulation of our treatments as well?

Exemplifying under real conditions, we have:

- children and adolescents (in school phase) attending to physical education classes and playing sports encouraged by the State or family;

- amateur sports or physical activity practitioners seeking health, aesthetics, or personal achievement;

- people whose profession is subjected to the already mentioned stimuli (physical education, gardening - landscaping, camp coordinator, dance instructor, postman, circus performer, doublet actor, life guard, police, construction, garbage collector etc).

This long list means a multitude of patients who are subject to the same problems as an athlete, and much more, needing our knowledge and strategies of treatment. Think about it. May the windows of possibilities and applicability of sports dentistry always be able to complement us.

Athlete: this article is for you!

Carol Mello

In health education we have a rule: Nothing is obvious! And for the sports dentist Mouthguard is so routine that sometimes he doesn't bother asking the athlete questions about a relatively new device.

This article is to answer these questions for you, athlete, who still believes that the protector will not let you talk, breathe or drink water…

Mouthguard is a device used to protect teeth and surrounding structures.

If the definition is so simple and positive why do athletes still have so much resistance to using it?

Why don't athletes, from professionals to amateurs, use this essential accessory?

The answers range from "it's too big", "I can't adapt" to "I didn't know I could use it in this sport".

There is still false information that the mouthguard can only be used in some modalities as a mandatory item, such as Boxing or MMA. But to use mouthguard just be involved in some physical activity where your heart rate increases.

From the moment the information spreads the benefits will increase. Awareness is still our best tool.

Sports culture still believes in these limitations of the mouthguard, which are already past, so it is difficult to include as mandatory material. But with the right information reaching down to grassroots categories and educators, little by little everyone will be using it, without being "different" or "weird." It is the natural way of any "novelty".

I agree that “boil-and-bite” protectors are more “affordable” on the market and thus more common among physical activity practitioners. But it can be a false impression of positive cost benefit, as this protector gradually loses the little adaptation and no longer fits as before. To stay in position, you will have to keep your teeth clenched, your mouth will close and impair your breathing, which consequently will make your performance no longer the same, as the oxygen intake will decrease, among other disadvantages. To be "good" again will have to repeat the process of heating and adapting, losing protection capacity.

One question to ask is: **How much is your health worth?**

I answer: working with prevention is always the best investment and for that a mouth guard that allows you to perform all your functions normally is recommended. With the individualized protector, tailor-made for YOUR mouth, you can

talk to your teammates, drink water, open your mouth without getting out of position, do not hinder breathing, protect you and is comfortable. Yes, it is possible!

Imagine being able to share a move with more confidence, lift weight, be at the barrier and be calm because your mouthguard will be there, dissipating strength and being your ally in search of better performance.

Your chances of injury decrease. Be a different athlete who believes the best investment is in yourself.

The first appointment

Juliana Órsia

I think that every time an athlete (amateur or professional) goes to the sports dentist for the first time, an angel cries with excitement in the sky!

All kidding aside, the search for athletes by a qualified professional to address their specificities has been progressing as we our are grow and this shows us that dentistry - within health areas - has a high degree of interest in every way, because we are being sought.

Facing an athlete at his or her first appointment is a delight, it means a lot, and this moment should be used to gather information, examine and diagnose. This requires a thorough dental examination in order to promote the diseases's treatment, act preventively, thus avoiding possible injuries and loss of performance, all in order to improve the athlete's performance.

A helpful medical history consultation should include a good questionnaire with questions from all fields and a detailed extra and intraoral clinical examination. We have very complete protocols in the literature that can greatly direct us.

A complete anamnesis should have at least:

- nature of sport, rules, requirements and characteristics
- volume and periodization of training

- breath type, facial type
- use of medication - including hormonal
- menstrual cycle functioning
- personal and family health history
- parafunctional habits
- breakdown of diet and supplements
- history of dental treatment
- history of dental oral trauma
- experience using sport mouthguard

In the extra and intraoral exam, only the odontogram does not provide enough information, it is necessary to include complete TMJ exam, head and neck musculature, occlusion exam, periodontal exam and even soft tissue exam (skin, scars, stains).

Currently we can still count on salivary examinations and collaborate even on a multidisciplinary level, because saliva is an excellent supporting tool to verify the occurrence of overtraining and thus plan the physical training of athletes.

Details richness of this first consultation is essential to treat and especially to prevent changes in normality that can take the athlete off the training pace and limit performance. Other information may well guide the schedule of future consultations

and enable the completion of procedures without disrupting the athlete's routine and may even prepare him for important competitions.

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“Odontologia do Esporte”. Eli Namba e Clara Padilha. Capítulo 24

Sports Dentistry in school: paradigms demystify

Carol Mello

I will start this post with a question:

“What comes in your mind when you read the word Dentistry?

Pain? Fear? Cavities? Anesthesia? Needle? Annoying little engine? Yes, that is what we hear the most inside our offices.

According to Martinez H, dentist’s own image already is associate with mutilating practices, such as multiple extraction for example. Consequently, people carry with them a great burden of fear and anxiety when they arrive at the dental office.

This is often passed down from generations, making even harder the acceptation process. Working in prevention is one way to demystify this. That is, to show in some way that we can promote more accessible dentistry without causing negative reactions or fear.

Schools are the most appropriate place to spread knowledge and stimulate opinions makers. And how to do that without being boring? Dynamic, ludic and easily accessible. That way we combine physical education classes with dental emphasis.

The activity is to use sports drills to promote and associate dental information’s. For example, I will use basketball drills: the student has to hit the zigzag ball past to the cones and thus to

go to the basket. Make the pitch and as soon as it hits, the student should take a role with “tooth friends or enemies”. Win the team with more hits. In the end its shown which one is the tooth friend and enemies and why.

Its undescribed the students feedback. They can understand everything that has been teach and still convey to it others simply. They understand the importance of prevention and how to minimize some damage.

The information is given lightly and productive. Creating a new perception of dentistry and demystify some paradigms and beliefs. It’s another advantage union dentistry and sport, focusing in create a more develop human and contribute to society as well.

A different approach in a different phase

Juliana Órsia

Today I invite you to reflect on the athlete at a different stage, when the body no longer responds as before, when it has won the medals, when it realizes that it is time to end competitions ... It is time to stop

And I say more: the athlete's body can even "stop", but the head keeps training, feeling hungry, pressure, charging, as before.

We need to direct our clinical eye to this phase too! Athlete never stops being an athlete because he stops competing. He remains an athlete because the aftermath of all exertion, all wear and tear, all injuries, all memories remain with him until the end of his life. They keep going to physical therapy, keep going to training, keep cheering with the fans and ... They keep eating like high performance athletes.

Among all the physical sequelae linked to an athlete's retired career, I would like to emphasize our importance in raising awareness of a specific problem: the hypercaloric eating habit that remains in the athlete along this new phase.

A peak athlete does not eat for pleasure, he eats because food serves as ENERGY. And energy for them is a prime necessity! Therefore, the large amount of food not only it’s a need, but also functions as a strategy within most sports. But at

the end of his career, energy demand drops dramatically, which was once hypercaloric FOOD STRATEGY becomes hypercaloric FOOD HABIT, prone to the evolution of overweight and FOOD DISTURBANCE.

I speak for myself, but surely: the responsibility to teach chewing, tasting, swallowing is not just the nutritionist's, right? It's from the dentist too - who remembers chewing / swallowing physiology classes or the gustatory cells of cell biology? So let's get the scarf to work and help our patients practice?

Of course, we won't be able to follow meals live to be able to modulate what interests us, but we can raise awareness. Commenting on CHEWING and HYGIENIZATION is not a bad idea

Remember that the gustatory cells send two very important information to the brain:

1) the taste of the food;
2) the feeling of satiety - one that was possibly ignored by years, within a dietary routine where the athlete could never afford to drop the cutlery when feeling satisfied.

To reactivate and rearrange the brain's understanding of satiety, it is necessary to chew food thoroughly until it turns into

liquid in the mouth before swallowing. This little activity can be very worthwhile, for food only crosses through the tiny, microscopic pore of the gustatory cells (to excite it means to send a satiety message to the brain) if it is very well crushed on the surface of the tongue.

Another very important point is hygiene. Little importance is given to the removal of the tongue coating, but the careful brushing of this surface makes excellent clearing of the gustatory cells, thus improving the absorption of food by the pores that are there. (But before the meal? Yes, before the meal).

Just now do your part, talk and make the athlete aware of some issues that can make a lot of difference to him and collaborate in many ways (remember this: athlete NEVER stops being an athlete, just stops competing professionally).

For sports dentistry, thinking about everything is not just a philosophical question, but a real necessity that provides us with the incredible experience of approaching in multidisciplinary. Think outside the box - with foundation - because all the help is welcome.

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Complicate to Uncomplicate: Orofacial injury is a Complex Event

Helena Fronza

Orofacial trauma is one of the event that moves most Sports Dentistry. With this in mind, the dentist's role in this event is to understand it, first of all, so that he can suggests effective preventive strategies.

"Cigarettes cause lung cancer"

Reductionism, which is the philosophy of trying to establish a well-defined cause to a problem, unfortunately, doesn't work for sports trauma, don't you agree?

And that's why we must think orofacial trauma as a complex event, with a more realistic approach about that fact.

To justify this new understanding we will comprehend better trauma if we recognize the interactions that risk patterns have to reach this result: trauma.

And when we talk about pattern risk, we talk about athlete's intrinsic factors (biomechanical, psychological, behavioral…) and extrinsic factors (the sport, the field condition and the weather, the competition's rules….).

We must understand that hockey is a sports that has hard pucks and putter traveling at a considerable speed (and ice rink contribute to this); the audience vibrates when injuries happen; high sticking is a penalty, but not harsh in punishing the offending athlete (who has been out of the play for 4 minutes),

that the “victim” athlete did not use mouthguard and many times, they return to the game after injuries… Anyway!

We should stop considering these event as occasional accidents. This was all part of the conjecture for this to happen, there are stable regularities at this time and it’s our duty to watch them.

When you realize all the steps, it able to devise strategies to mitigate the chance of injuries!

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Pediatric trauma in sport

Larissa Leci

Trauma is defined as any injury to the dental organ, of thermal, chemical or physical origin, varying intensity and severity and whose magnitude exceeds the resistance found in bone and dental tissues.

Traumas can occur at any stage of tooth development and in any age group, but are more prevalent in children, thus affecting deciduous and permanent dentition.

The incidence of traumatic injuries in the young population has increased significantly in recent years, being considered a serious problem by the dental community when compared to dental caries, which has decreased dramatically in recent decades. Dental traumas gain different proportions according to type and intensity. Thus, traumatic injuries should be carefully analyzed not only for their physical consequences, but also for their impact on children's quality of life in psychological terms, in addition to the high potential for negative interference with social relationships. According to some studies, a greater participation of children in sports activities has contributed to transform dental trauma into a growing public health problem.

The participation of young athletes in sports practice - especially competitively - has been increasingly precocious in order to professionalize themselves in the future, and perhaps

even defend the name of the country. Every Brazilian victory; whatever the mode; Kids are fascinated by the sports world. For national sports, it's wonderful, but for most of these kids, it may not be that cool.

Most parents recognize the advantages of physical activity, and this is reflected in the increasing number of boys and girls who play sports regularly. However, recent research has revealed a growing rise in the number of serious oral injuries in children; worldwide speaking.

In the preschool period, which corresponds to the age of four to six years, the occurrence of trauma is large, and the main cause is falls, due to games in which the age group is exposed. Already in the age group that includes the school period and the pre-adolescence that goes from six to twelve years old, the injuries occur as a result of accidents with bicycles, skates, skateboards, falls, collisions between participants, hits with sports objects - such as balls - most often causing dental fractures and injuries to the upper lip and chin.

The teeth most affected by dental trauma are the upper anterior teeth, especially the central incisors because they are positioned in the face frontal region, and are therefore in the direction of body movement, tending to receive greater impact

than other teeth. In addition, they are one of the first teeth to be born, a fact that exposes them to risks in the incidence of trauma. They follow the upper lateral incisors and the central and lower lateral incisors. Among the most common types of trauma are dislocations, fractures (enamel, enamel and dentin with or without pulp involvement), avulsion and soft tissue laceration.

There are some emergency protocols that must be followed after the accident, before dental care:

Fracture: When there is bleeding the first step is to contain bleeding with gauze pads. Find the fractured piece of tooth (when possible) and store it in a cup of saline, milk, or saliva, and see your dentist immediately. The professional will evaluate the best form of treatment.

Avulsion: (When the tooth is completely out of the mouth): Find the tooth and hold it by the crown without placing your hand in the root. If the tooth is dirty, rinse it quickly under running water - for 10 seconds - without scrubbing, if the tooth is a permanent tooth, replace it in place, if it is a deciduous tooth (milk tooth) do not do so, may compromise the permanent tooth. If you cannot replace it, keep your tooth in a cup of milk or saline, or even in your own saliva, and see your dentist im-

mediately, because the longer you go, the less likely your tooth will be saved.

Laceration: The first step is to try to clean it well, compress with gas to stop the bleeding, evaluate the size and depth of the cut, if the cut is considered deep, the child should be referred to the emergency room, to give some dots.

There are other types of common injuries, such as intrusive, extrusive and lateral dislocations. In these cases emergency procedures are performed by a dental surgeon. Urgent referral to a professional is required.

The type of trauma, the age of the child, stage of tooth development, deciduous or permanent, the intensity and duration of the impact as well as the time elapsing between trauma and care are important case aspects to be considered during treatment and prognostic assessment.

Remember in all dental trauma cases, the shorter care time greater the chances of saving the tooth.

Of all care protocols, prevention remains the best option. During sports, children and adolescents of any age should strictly use personal protective equipment: helmets and mouth guards - YES, children can wear mouth guards - made by the dentist according to the sport practiced, always evaluating and

performing changes to protectors according to dental arch modifications.

It is also necessary to mobilize the population, especially those involved with school, in sports environments, about immediate care for injuries. Therefore, clarification is needed for the lay population through classes and conferences in order to clarify public opinion and thus improve the prognosis of injuries.

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Orofacial Trauma in Soccer Players

Larissa Leci

Orofacial trauma prevalence has been a relevant issue for public health, due to its increased incidence in the last years in the many regions of the country. Orofacial lesions may compromise the hard tissues of the tooth, the pulp, the periodontal ligament, the supporting bone structures and the oral mucosa.

When they occur, can cause esthetics, functional implications and consequently affects physically, functionally and emotionally patient's lives, interfering on behavior and personal success.

One of the main causes of maxillofacial fractures and oral injuries is sports, differing from country to country by social, cultural and environmental factors.

Sports trauma represent 14 to 39% of dental trauma cases and corresponds to the third treatment of facial trauma.

Despite the common belief that soccer is not a violent sport, there are high risk of orofacial injures to soccer athletes. We can observe that during a soccer match, the head is often used and the head to head or head to elbow impact, is one the of most relevant causes of injuries. In addition we can see player falls, player-player or objects such as ball or soccer shoes collisions.

In general, orofacial injuries are common in soccer and there aren't enough studies about it. Some authors point that soccer can be responsible for 50% of orofacial trauma in sports, due to its high popularity among amateur and professional athletes.

A study conducted in the medical departments of the 40 teams enrolled in the first and second divisions of the Brazilian professional soccer league in 2007 evaluated the incidence of orofacial trauma in soccer players. Of the participating doctors 71% report the occurrence of some type of dental injury during soccer training, among them dental fractures (74.1%) and avulsions (59.3%) were the most prevalent types of injuries. Regarding the position on the field, the attackers (59.3%) had the highest number of injuries followed by the defenders (44.4%).

This can be explained when we understand that players in these positions have a higher risk of direct contact with opponents, due to the intensity of the game on attack or defense. These data reinforce the idea that sport modality has an important influence on the risk of injuries.

Several studies have shown that oral health directly influences players' performance and shows the importance of

immediate post-trauma care that can minimize short and long-term damage.

As we saw above, soccer trauma is a common problem, but it can be avoided. In addition, it should be noted that an injured player can be sidelined causing some damaged to the club and athlete, such as dropping training - consequently impairing sports performance, altered training routines and financial expenses to the club.

Studies mention that using a mouthguard helps prevent orofacial injuries and minimize the severity of damage.

Nevertheless, its use is not common in soccer, even though it is the most popular sport in Brazil, with thousands of players in national, regional or local leagues.

The dental surgeon is the most qualified professional for emergency dental care and orofacial injuries, so is great importance the dentist presence in sports environment. To guide athletes on prevention, raise awareness about the seriousness of injuries, guide, clarify and encourage doubts about the use of mouthguards and perform emergency treatments, avoiding major complications.

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Mandibular Fractures associates with third molar impaction

Camila Martins

Prevention removal of the lower third molar has been studied and discussed for some time.

Among the situation that must be evaluated for the correct indication of this element extraction, can be highlighted the risk of cavities, pericoronitis, odontogenic cyst and crowding. (FRIEDMAN, 2007)

In one of the cases, the 28 year old patient, professional boxer, whom was knocked out in a boxing fight in Cruz Alta – Rio Grande do Sul, was treated in Balneário Camboriú. Due to pain and trismus, he had to go to three different hospital until he was correctly diagnosed with angle jaw fracture on the left side and was referred to an oral and maxillofacial surgeon for elective treatment. In the elective treatment, 90 days follow up and tooth extraction element 38.

Several studies have shown two or three times more risk of angle mandibular fractures when at least one of the lower third molar is present (DODSON et al, 1990). In athletes, this orofacial fractures end up being more common, due to its exposure according to the sport, being more often in contact sports (ANDREASEN, 2001).

Sports traumas requires further study, identifying the most prevalence causes, the most appropriate treatments and proto-

cols methods. This aims to reduce the risk of dropping training and competitions for a long time, which causes financial damage to the club and to athlete (DIAS e COTO, 2014, p.110)

Among all facial bone fractures, the mandibular fractures are the most common, especially when the athlete is exposed to contact sports and as one of the prevention mandibular fractures methods, the prophylactic third molar extraction is indicated according to studies found.

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The relevance of mouthguard use in jiu-jitsu practitioners

Larissa Leci

Jiu-jitsu practice, a wrestling model, was brought to Brazil by the japanese earl Maeda Koma on World War I period and passed to Gracie Family, who adapted to the country, with some alterations. The main goal of each one of the Fighters is putting his opponent on the ground and immobilization.

On Brazil, jiu-jitsu developed and adapted itself focusing on soil, grabbing, projections, immobilization, locking, twisting and strangling techniques, without using direct blows with hands, feet or other body parts.

Using the fact that no direct blows are used, most practitioners do not consider necessary using mouthguards. Beliefs that its use is limits to sports considered by them as “more aggressive”, such as boxing.

During the age of 2018, I participated in a research with combat sports, and after watching practicing and talking with lots of jiu-jitsu fighters, I observed that most of them affirmed that it was a “calm” sport, that mouthguard use wasn’t necessary and besides that, when they used the device (some competitions and fight centers required), It was poorly fitted and they have to clench their teeth to maintain it in position, forcing facial muscles, being able to injury them.

Despite this beliefs, jiu-jitsu is a contact sport, which de-

mands exposure of all stomatognathic system to the opponent, making that pratictioners of this modality became a very susceptible group to alterations, disfunctions and maxillofacial injuries.

Traumatisms and lacerations arising from the wrestling practice is quite prevalent, because pratictioners of all ages, genders and ability levels are at risk during sports activity. In spite of it, there are many studies proving that these types of lesions can be prevented with mouthguard use.

Mouthguards are resilient intraoral devices used with the aim of diminishing the chances of stomatognathic damage. They can be built in different materials, that helps to absorb blows to the face, maintaining soft tissues away from the teeth, avoiding contact between the antagonists.

On the other hand, in order to function, the mouthguard has to be well fitted to the oral cavity. Which means that it can't move during impact or athletes' movement, and must allow hydration, breathing and talking without its removal.

The Academy for Sports Dentistry (EUA) categorizes mouthguard in type I (stock), type II (thermoplastic) and type III (custom). The last is the only one with recommendation and scientific foundation.

A study made on Paraíba's Federal University (Brazil), in 2016, noted that most jiu-jitsu athletes (62.6%) did not used mouthguards. The ones who used it, 3% used type I, 97% used type II and no one used type III

Considering stomatognathic injuries history, 80,4% of athlete's reported that already suffered some type of facial traumatism. From those, 78,5% occurred only during pratice; 20,8% and both practice and competition and 0,7% were restricted to competition.

An amount of 217 mucosa lacerations were reported of 126 individuals. Most of them occurred on the lips (85,7%), mostly lower. It was stated an amount of 208 facial abrasions, mostly localized on the cheeks (34,2%) and periorbital region (27,8%). About bone-traumatic injuries, the most prevalent were contusions, both reported by the athletes and verified on clinical examination.

So, we can observe that jiu-jitsu it is not calm as the athletes think, because it is related to a high prevalence of traumatisms.

ADA recommended mouthguard usage in 29 modalities. However, in brazil, its utilization is required only on boxing, but even in boxing there is a lack of quality control of these mouthguards, where, in according to studies, most of them use

use thermoplastic mouthguards (type II). Massive utilization of these mouthguards is due to low cost, even if it does not have scientific proof that it can absorb impact.

I believe not just in cost but also lack of information about the importance of usage, and more than that, the importance of using a mouthguard that really achieves its goal of protection.

We end this article aware of our responsibility as dentists to bring knowledge about traumatisms risk during sports practice and guide the athlete about appropriated mouthguards, which guarantee protection without causing discomfort.

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Dental erosions and stains in swimmers

Larissa Leci

Swimming, as well as being one of the most complete sports, is also a fun and healthy way to exercise, awakening a sense of pleasure and well-being. There are several benefits of swimming, such as improved fitness and muscle strengthening.

The practice of swimming is generally practiced up to three times a week, a frequency considered cautious for sports beginners. From then on, both the frequency and duration of classes are increased through improvement and reaching the level of training, and can reach five times a week.

In high performance training, emphasis is given to every aspect of swimming: exits, turns and arrivals. Therefore, numerous repetitions are required. Separate arm, leg, and technique training is also performed that broadens the need to keep the swimmer in the water.

All of this raises the training volume to a minimum of two hours a day, with some swimmers training for four, six hours or even more. Regarding the frequency, the competitors train over four days a week.

As a swimmer is exposed to more demanding training, the concern for his health increases, which must be in perfect condition to support the demands, including oral health.

In Brazil, most pools are treated with chlorine, mainly for its

efficient sanitizing action, because it is cheaper and capable of destroying most pathogenic microorganisms.

In contrast, the exposure of swimmers to chlorine-treated pool water causes erosion of tooth enamel when the water pH is acidic.

On the other hand, too alkaline pH can cause dental stains on exposed swimmers.

Dental erosion is defined as irreversible loss of hard dental tissue by chemical processes that do not involve bacteria.

The main symptoms of dental erosion are decreased enamel shine and yellowish teeth. It is considered a painful, costly and irreversible condition that can be caused by improperly maintained chlorinated pools.

The presence of chlorine in social aquatic environments directly affects the quality of dental tissue and promotes its destruction, especially in the case of professional swimmers who are exposed to long periods of sports activity.

Different authors agree that activities in chlorinated pools trigger dental erosion.

Centerwall et al. (1986) report dental erosion in two Virginia residents. Both belonged to the same competitive swim team in the same club. From these two cases, a survey found 3%

erosion in non-swimmers, 12% among non-competitive swimmers, and 39% of competition team members.

Cabrera and Kamashiro (2004) reported dental erosion in all swimmers of a team in Lima, Peru, who trained six times a week and erosion was more severe in swimmers who trained during more hours.

Another mechanism for the emergence of dental erosion in swimmers may be the high consumption of acidic drinks, such as Gatorade.

Composite resins can also be chlorinated water in their organic matrix, clinically manifesting signs of destruction, such as the condition of erosion. Some authors suggest that water is one of the major contributing factors to the sorption and solubility phenomena of the resins, with the deterioration of their organic matrix.

Long-term exposure of the resin to water containing excess chlorine or other chemical elements may cause changes that cause the replacement or repair of restorations in the long term.

Dental stains are dark-colored deposits of organic and inorganic material, such as a brown, hard dental tartar on swimmers' teeth. Dental stains are also formed from exposure to chlorinated water with a pH outside the proper range, but in

this case the pH will be alkaline, or above 8.0.

Rose and Carey (1995) observed several swimmers who maintained intensive training routines. They found that of 100 swimmers who practiced competitive swimming, 91 had dental stains, while among those who practiced non-competitive swimming, with less exposure to chlorinated water, the affected were 27 out of 100.

Dental calculus is rarely found in children under the age of nine, but this type of dental stain is not uncommon in children and adolescents. In a study by the American Dental Association Health Foundation (ADAHF), mentioned by Rose and Carey (1995), 58% of swimmers with dental stains in the age group of 6 to 18 years were found.

The main strategy for the prevention and control of erosions and dental stains is the elimination of the etiological agent. For this, it is essential that there is awareness and guidance on the causes of wear and be attentive to the monitoring of the water pH of swimming pools where high intensity swimming activities are performed, as it requires its practitioners to remain exposed to the water longer and longer. more frequently than other water users.

The pH of chlorine-treated water should be periodically

checked with notes and control in proper spreadsheets, because according to INWA (2005) chlorine dissipates rapidly (because it is volatile), especially in contact with sunlight. Verifications should be performed every two hours and the pH control frequency should be at least six hours.

Other means of treatment, such as ozone, or combined forms of treatment may also be chosen, reducing the need for chlorine.

The most effective way to prevent erosion and dental staining is to remove the cause. However, the use of mouth guards has been recommended by some authors in order to protect the dental surface from contact with chlorinated water, creating mechanical protection for the tooth surfaces.

In addition, fluoride is also indicated for the prevention and control of dental erosion, being the main remineralizing agent, acting on the reduction of surface solubility, followed by increased surface resistance from mineral recovery.

The periodic visit to the dentist is great importance for swimmers (and for "non swimmers" as well), early and accurate diagnosis of dental erosion lesions and dental staining associated with the recognition of etiological factors guide the professional to design an individualized program of prevention,

progression control, remineralization and restorations if necessary.

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The influence of poor oral health on muscle injuries

Caroline Dalri

Although we got into that (briefly) in one of the previous articles, I bet it was not your knowledge that neglecting oral health could affect mass gain or even recovery from muscle injury, right?

Yes, there is scientific evidence demonstrating the association between periodontal disease and muscle injuries. It turns out that periodontal disease is able to modify inflammatory cells and mediators, indirectly acting on muscle catabolism.

One of the markers used to evidence this connection is creatine kinase (CK) levels, an enzyme found in muscle, heart and brain, playing a key role in energy supply, which was observed to be at higher levels in athletes with greater severity of the periodontal disease. This disease causes high levels of some cytokines that play an important role causing muscle fatigue, in addition to compromising joints, making it difficult to recover from muscle injuries and even compromising the overall health of the individual by affecting their sports performance.

Muscle fatigue can cause muscle cramps, as well as reduce the energy absorption capacity - hence the increase in CK - making the muscle more susceptible to stress injury.

In a rats study from Souza (2003), it was found that trained rats with periodontal disease had a decrease in the perimeter of

the gastrocnemius muscle fibers and impeded hypertrophy of the anterior tibial muscle fiber.

As in the study by Souza and Ribas (2009), which demonstrated an association between periodontal inflammation and muscle injury serum levels marker. Among the soccer athletes who participated in the study, those with the highest probing depth had the highest CK levels.

We can exemplify with the case of a Ponte Petra player who presented recurrent injury to the posterior thigh muscle. The physiotherapist, suspecting the frequency of the injury, requested an evaluation from the dentist who confirmed an infection in a player's tooth, and after treatment the athlete plays without pain and injury.

The suspicion is that bacteria circulate in our body during an oral inflammation and may lodge in the muscle fiber groups. Therefore, oral diseases are a potential risk factor for sports injury and may suggest that periodontal disease may be a risk indicator for muscle injury.

Visit your dentist regularly!

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Periodontal diseases in athletes: is there a relation with systemic health?

Helena Fronza

Periodontal diseases are prevalent illnesses on athletic public and this high morbidity point that oral care is being underestimated not only by health care professionals, but even by athletes and support team.

In a systematic review, Ashley et al., 2015, demonstrated that moderated to severe periodontal diseases affect 15% of the sample and gingivitis was found in 76% of evaluated athletes.

It would be pretentious to worry about general health and athletic performance, having in sight a gum disease? It can be found relations between systemic diseases those illnesses for three mechanisms:

1) Transitory bacteremia

2) Liberation of gram negative's lipopolysaccharide

3) Chronic and acute inflammatory responses to antigen-antibody from periodontal infection.

Curiously, it was attributed a initial correlation among plaque index, probe pocking depth and muscular injuries in professional soccer players of FC Barcelona. It is necessary further research on this correlations and its mechanisms, however, this finding already made us aware to a possible systemic influence (even if remote) that periodontal illnesses

can bring.

It is important to point out the gingival phenotype that can be found derived from the use of anabolic steroids, that tend to be hyperplasic. This happens because specific receptors to androgens are present in gingival fibroblasts, who duplicate in number when gingival tissue is inflamed. This cells are stimulated to secrete collagen and proteoglycans in the presence of main metabolite of testosterone.

Besides that,, the risk to severe periodontitis increases with anabolic androgen use by increased proportion of gram-negative bacteria comparing to not users. Thus, further the concerning to systemic health, the suspicions of androgenic anabolic use and abuse can be started from a good physical exam.

Not only this particularities we can find with athletic Community and periodontics. Local microbiota, crevicular fluid, the fibroblasts and gum tissues physical exam have a lot to contribute.

There are many fields to be searched, such as: cortisol levels were pointed out as a risk factor to periodontal disease, and these levels tend to be increased in athletes that are in competition season. We can also highlight the protective role of

estrogen in the progression of periodontal illnesses and the concern with female athlete triad, if gum diseases were a clinical finding

That being said, the study of sports dentistry with periodontal approach is essential. In the area of morbidity, by investigating whether there are risk factors associated with physical exercise (endurance or not) that may raise the risk to the development and progression of these diseases (and if they exist) and their effects and mechanisms. Also in the area of diagnosis: what the periodontal clinical findings that can say about the systemic condition and substance use by the athlete. Or even if this high prevalence is the result of only poor oral hygiene.

Regardless of the answer, health education strategies, continued surveillance and clinical monitoring of the athlete's oral conditions are essential and should be more recommended in the general health care of athletes. Therefore, it is important to include documentation of periodontal and plaque indexes in the patient's record, as well as basic oral health instructions, since these conducts and data are (apparently) being neglected by oral health professionals.

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Evaluation of the presence of cortisol in saliva and sports performance

Larissa Leci

Cortisol is triggered in our body when we experience situations of alarm or tension. Athlete's body, like anyone's, prepares for a dangerous situation by releasing cortisol, but the problem occurs when these levels remain elevated over a period of time.

Fans and sponsors pressure, the importance of competitions and the pursuit of a trophy increase the cortisol level, which makes him make mistakes.

There are two ways to analyze hormones: noninvasive and invasive. When talking about athletes, we should always choose noninvasive methods to avoid / decrease complications and discomfort.

Non-invasive methods include using urine, hair and saliva. These vary according to the time of test results, being: urine in weeks, hair in months and saliva in minutes or hours.

The advantage of using a non-invasive method is that the periodicity of the test can be reduced as blood and urine collections are impracticable at the same frequency as salivary collections. This benefits the athlete's metabolism monitoring and does not require highly skilled people to perform this procedure .

In the athlete's daily life, saliva - as well as blood - is pointed

as a potential source of biomarkers of physical activity performance. Being a fluid that contains proteins, acids, peptides and other important physiological markers in the diagnosis of problems or systemic hormone levels.

In this context, saliva is a biological fluid that has some distinct advantages: it is a non-invasive test, it does not present great risks during collection allowing a safer, easier to dispose, easy to transport, has a low cost and is considered the favourite method of athletes, mainly because of its less invasive nature than venous blood collection.

Thanks to the latest saliva cortisol analysis technologies, known as the stress hormone, it is possible to analyze, at a molecular level, an athlete's competitive performance.

Circulation of cortisol levels reflects quantitatively the amount of stress, providing the opportunity for targeted and personalized interventions to favorably influence athletes' performance and recovery.

Through this analysis, it is possible to predict, early enough, the negative effects of results, which helps the coaching staff to restructure training routines, modify the team rotation and quickly recover their athletes' spirits, minimizing the impact of stress on results.

Thus, when finding the presence of a high level of this hormone, the technical team will be able to do a preventive work. This way, medical staff, coaches, sports researchers and sports dentists (did we think we would be left out?) can work together to maximize athletes' performance and limit injuries and over-training.

Although there are studies that use it to monitor athletes in exercise and doping situations, it is still necessary to standardize some pre-analytical variables, such as the correct choice of best collection system, which allows to easily quantify volume, with good sample recovery; well-defined collection timing, according to possible variations; and contamination of saliva with blood from oral mucosal injuries, that must be avoided.

It is also noteworthy that despite the great advance of sports medicine and the use of saliva in sport is a reality, many studies are still needed.

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How can athlete performance be influenced by stress?

Caroline Dalri

It is known that sports modify our organism, cause metabolic, hormonal and neuromuscular adaptations. Also known that physical exercises improve in human quality of life, as long as some principles may be respected.

The training has to be made as athletes needs and goals, as an inadequate relation between volume and intensity may lead to an undesired situation of body stress.

Cortisol is among the hormones released in stress, which is the most powerful glucocorticoid produced on adrenal cortex. Causing some symptoms, among them:

•Attenuates immune cell and inflammatory cells actions, leading to a body immunosuppression.

•Decreases bone formation;

•Acts as an insuline antagonist, promoting the carbohydrate, lipids and protein molecules breakdown, mobilizing energy reserves;

•Increase blood glucose and glycogen production in the liver;

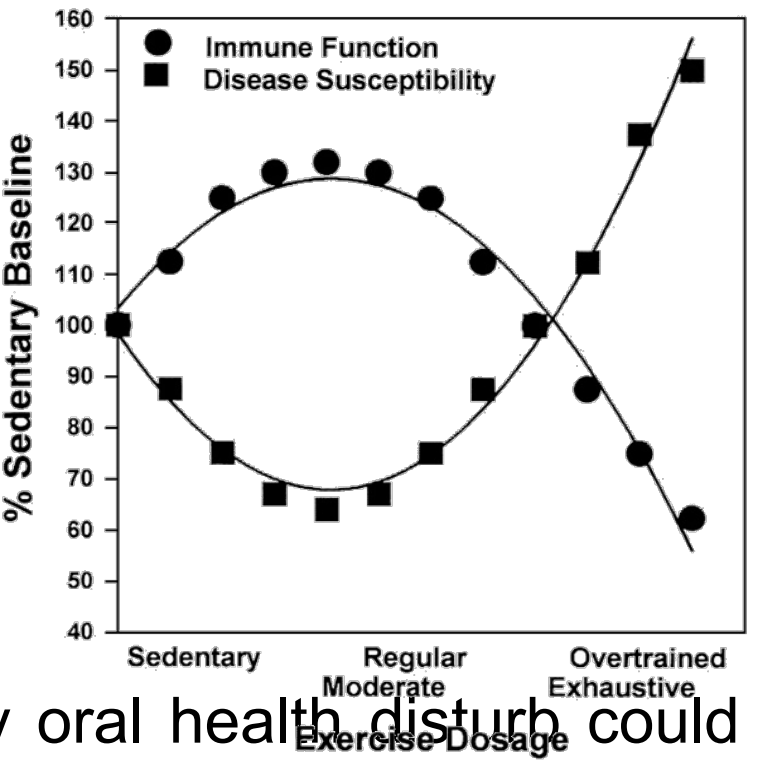
•Increase blood pressure.

This are the basics physiological consequences of chronic stress, that could lead to a muscle loss and hyperglycemia, as well suppressing inflammatory and immune response.

Immune system depressive effect begins 3-24 hours after workout, depending on intensity and duration.

Cadore noticed in his study that in volume training (continuous, prolonged exercise) has a higher increase of cortisol levels than strength workouts and that athletes age should also be taken into account, as the salivary cortisol response after water resistance workouts were higher in young people than elderly, since young people perfom physical exercise in a higher physiological load.

We can realize that chronical excessive exercise changes immune functions and then comes the “OPEN WINDOW” theory, which is the decrease of our defenses for a 1-9 hours period after overtraining.



We can use endurance athletes as an example of whom has long and exhausting daily workouts.

But, where the dentist enters?

Dental surgeons can help the athlete return to their training faster and increase his perfomance, as any oral health disturb could interfere in his performance. How?

Athletes with oral inflammation or infections can experience

slower healing, decreasing aerobic capacity, headache and early fatigue. In muscular cases, recovery is more difficulty and there occurrence become more often.

As well the immune drop can aggravate some diseases, such as cavities, leading to chewing impairment, resulted of toothache.

In addition, chronic stress significantly increase bone loss cause by periodontal disease, which can lead tooth loss.

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Weight control, eating disorders and oral changes in athletes: what is your role as sports dentist?

Helena Fronza

There is a belief that athletes are at higher risk for developing eating disorders than non-athlete patients. Right, we do not have a consensus in the literature yet (COELHO; SOARES; RIBEIRO, 2010; WERNER et al., 2013), but we have some sports that lead us to believe that this risk is higher.

The modalities that have aesthetic requirement, such as gymnastics, skating and dancing; the endurance sports; weight-controlled sports, such as some combat sports; aerobic sports, etc. All of these sports may require weight control, and it may or may not become pathological.

The point is that it should be part of your anamnesis to research your athlete's diet and training routine.

Why? Well, as a dentist, you are a healthcare professional. You need to be concerned about your patient's integrity and performance, and be prepared to address these issues and instruct them to seek treatment.

Other than that, thinking about dentistry, finding a patient with this profile should make you more aware: the adherence of restorative procedures may be impaired, surgical procedures require a careful preoperative examination, the incidence of oral diseases may be more frequent and a periodic dentist control should be recommended.

Ok. How do we perceive these problems?

Weight control can happen in many ways, such as through exhaustive exercise, refusal and diet control, vomiting induction, medication use, and so on. Oh, and make no mistake of looking at these conditions only in underweight athletes: like the work of Sundgot-Borgen and Klungland (2004), 42% of gymnasts suffering from eating disorders were classified as normal weight!

Particularly in our area, there is an important repercussion on the stomatognathic system especially in cases of bulimia (binge eating followed by vomiting or use of laxatives) and anorexia (food refusal).

Thus, this article will bring an interest to dentistry changes checklist. (LITTLE, 2002; JOHANSSON et al., 2010; BUDD; EGEA, 2017)

Therefore, this is another maneuver that the dentist can use to help diagnose an eating disorder and also to reaffirm the need for the sports dentist to compose a multiprofessional team for the athlete's benefit. What's more, you can now update your case history and print the table to leave at the corner of your desk so you never forget!

Complication	Nervous Anorexia	Nervous Bulimia
Dental erosion	-	X
Dental sensitivity	-	X
Hyposalivation	X	X / -
Xerostomia (report)	X	X
Dental caries	-	X
Periodontal disease	-	X
Enlargement of salivary glands	X	X
Atrophic mucosa	X	-
Poor Oral Hygiene	-	X
TMD	-	X
Craniofacial Disorders	-	X

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Dentist and Doping in sports

Fernanda Fernandes

Sports Dentistry is an area that integrates multidisciplinary attention for the health of the athlete, whether amateur or professional, in competition or not.

In addition to preventive care and management of oral health as a whole, the use of mouthguards represents the highlight of the area, although the athlete needs special attention in other aspects.

Doping episodes are known around the world, as cases where the (mainly elite) athlete uses some substance to improve his performance and gain some advantage.

Dental surgeons, as well as the entire team responsible for this athlete, should be careful to administer and prescribe medications so that they do not risk a positive outcome in doping control.

Every year, the World Anti-Doping Agency (WADA) releases a list of banned substances that is available on the website (https://www.wada-ama.org/). This list includes substances whose characteristics promote greater performance for the athlete and may present a health risk, contrary to the sportsmanship.

When the health professional needs to prescribe a medicine that has a restricted substance in its composition, the Brazilian

Olympic Committee (COB) or the respective Confederation should be contacted through the Therapeutic Use Authorization (AUT) form.

In 2009, ANVISA issued a resolution to make some changes to the package leaflet. These changes include font size, “patient labeling” - where there are questions and answers about the drug, minimum drinking age and doping alert. This alert serves to draw the attention of athletes about the potential of the drug to be considered doping, according to the rules of the International Olympic Committee (IOC).

Therefore, the dentist must be aware of the rules and standards to which his patient is subject. A prescription by this professional can have irreversible consequences for the life of an athlete.

The tip is: the dentist has a role that goes far beyond mouthguards and should act in a multidisciplinary way to promote athlete health.

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Can mouth breathing impair sport perfomance?

Caroline Dalri

Breathing is a vital act for our body, it is through breathing that we bring oxygen into the body, nourishing cells, recharging energies and releasing carbon dioxide. If performed correctly, breathing relaxes, decreases tension in the respiratory muscles, improves focus, increases attention, reduces anxiety and stress (Ribeiro, 2017).

Ideally, breathing should be through nose, where air passes through specialized structures for its passage. Only the nasal cavity can filter particles and microorganism from the air, reaching the lung at the appropriate temperature. In addition to being associated with normal mouth functions such as chewing, swallowing, tongue and lip position, providing a correct stimulation of facial bone growth (Rodrigues, 2014).

During exercise we need greater ventilation, especially during more intense activities, so often nasal breathing is not able for ventilation alone. For this reason, it is recommended that inhalation occurs through the nose and exhale through the mouth, expelling as much air as possible.

But the main problem is when we have airway obstruction and the airflow is forced to change its path causing mouth breathing.

Mouth breathing presents a multifactorial etiology and has

facial features such as open mouth, tongue hypotonia, sunken eyes, elongated face, dry lips, sagging facial muscles, dental malocclusion, narrow and deep palate (Frias-Bulhosa e Passos, 2010).

Breathing may be noisy; have excessive tiredness; there may be postural alteration of the whole body; difficulty chewing food; restless sleep; irritability; headache and lack of concentration (Quintão, 2004).

In sports, mouth breathers may have lower physical performance because the diaphragm of these individuals works in a lower and asynchronous position, creating a difficulty of oxygenation through short and fast breathing (Quintão, 2004).

A great example is swimmer Michael Phelps who has long face, narrow arches, crowded teeth and gum smile. The Olympian has learned breathing techniques to assist and better utilize inspired oxygen.

Appropriate treatment is multidisciplinary and interdisciplinary, and should undergo an evaluation with the orthodontist seeking proper musculoskeletal rehabilitation, as well as improving the labial, dental and whole maxillo-mandibular complex posture.

When necessary. you may be referred to an ENT doctor and

speech therapists.

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Masticatory contraction and dental tightening during exercise: physiological or pathological?

Helena Fronza

What is the sports dentist's understanding of the body motor function complexity and the athletes we serve?

This article intends bring to discussion the masticatory muscles performance and the dental clenching during physical exercise, which is our area of interest. Let's understand what happens and why bring this subject up for discussion:

- It all starts with anatomical research, which found projections of the trigeminal nerve (the cranial pair that gives motility to the chewing muscles) even in the terminal portions of the spinal cord;

- Then came the interest of understanding what the effects of this on the body. There are studies that correlate the increase of masseter muscle contraction with lower limb muscle contraction, or with specific movements of sports modalities (sprint, jumps, throws, attacks ..);

- Others have even stated that the report of perceived exertion by the athletes themselves is higher when having the dental clenching;

- Some modalities have already been researched with this type of correlation: volleyball, weightlifting, golf, running, baseball

The last tip of this line of thinking (which is now our duty) is

missing: is it that the recruitment of these muscle chains during exercise, the teeth tightening, the exertion perception with these movements, and the various stressors on a patient's life? of competition together cannot become a pathological feature?

Is there a frequency, strength, duration for this to happen? Are there any deleterious effects? And that was not a rhetorical question.

In fact, gradually, we have studies in the dentistry area that shows high prevalence of temporomandibular disorders in athletes compared to non-athlete patients, as in the study already commented here on the blog. https://www.clarapadilha.com.br/single-post/2019/08/07/Art-comment-Prevalence-of-temporomandibular-disorders-in-rugby-players

And there begins our search!

For this reason, this eminent need of the sports dentist to be familiar with the diagnosis of TMD is evident, what is the management in front of them and to know when the intervention is necessary, since apparently we have athletes as a risk group for these dysfunctions.

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Orofacial Esthetics in Athletes

Caroline Dalri

We know that exercise has numerous benefits in the human aging and health process. Improves cardiorespiratory capacity, preventing cardiovascular disease and osteoporosis, for example. However, when performed in excess, it promotes accelerated cell aging, since it increases the production of free radicals that trigger oxidative stress.

The skin also undergoes physiological changes throughout life and athletes, whether they are high performers or simple practitioners, suffer the most from accelerated facial aging.

In sports where there are sun exposure, it can causes the skin to lose elasticity and develop spots and wrinkles, so facial care should go beyond the use of sunscreen and hydration with water (which is very important!!).

The face consists mainly of bones, muscles, fat and skin. For the skin there are products capable of bio stimulating the collagen production, volumization and hydration of the skin, reducing sagging. As an example, we have hyaluronic acid that can be used as a form of skinbooster - which will promote deeper hydration of the skin, improving its elasticity and appearance - or as a filler, which will soften the signs of aging at the same time as it is absorbed by the body promoting collagen production.

Another method is injectable fibrin-rich plasma (IPRF) that provides a better tissue response, improving site microcirculation and collagen formation. Making the skin more lush and hydrated, reducing expression lines and even better support, as the procedure regenerates and repairs facial tissues. For the muscles there is the famous and darling “botox”.

However, we should be aware that both, botulinum toxin and hyaluronic acid filler / skinbooster will have a shorter duration in athletes, because:

During intense physical activity it is common to contract involuntarily the facial muscles, recruiting too much of the facial muscles, making the botulinum toxin absorb faster, and larger facial muscle mass.

Athletes have increased free radical production, however depending on the hyaluronic acid product used and the amount of bonding between molecules at the site of application, the duration may vary from 6 to 18 months.

Therefore, when choosing the ideal product, several factors must be taken into consideration. Visit a trained and up-to-date professional who takes into account the athlete's routine when establishing treatment approaches

The sports dentistry and your legal considerations: Have you already thought about it?

Helena Fronza

The dental surgeon is not usually the most informed professional about your rights and duties as a healthcare professional.

Now, with sport dentistry, some specialty particularities should bring to its relationship with the athlete that should be considered (even more carefully).

Well, first: there are more questions than answers in this field! The establishment of a secure protocol of patient-professional relationship and their attributions and limitations of this specialty has to be well structured. In Brazil, this topic is still incipient and can bring many legal complications.

With this in mind, in line with articles published for this purpose, it is pertinent to professionals who wish to work in this area know some positions.

1: Some modalities have in their regulations the attributions of team professionals (such as the physiologist, for example) to the team and their health. Dental surgeon does not have yet, only the uses of mounthguard, facials, helmets are mentioned. Perhaps the next step is try to define how teams work so that the needs you must commit to meet and where your scope of work is established.

2: Even if you are paid, volunteer, or out of the stands to

professional, once you touch the athlete or give him or her guidance, the patient-professional relationship is established, and you can be held responsible for everything you have done.

3: Do you always use the same treatment protocols for non-athlete and athlete patients? In court, a professional expert will judge your conduct if something happens, and if you are not well grounded in your protocols, it could be a problem.

4: In the digital age, there is a major concern about your athlete's image, which may have image rights, sponsors and social contracts. Therefore, consider all these nuances before posting any procedure or image of your patient.

5: Like all patient-professional relationships, the athlete will be entitled to receive a treatment plan with the timeframe for performing the procedures, the costs and how long time available it needed for the procedure. That would be ok for a non athlete patient. But in the sporting world, there are training schedules and competitions to follow, and you should be prepared to draw up this document without making the athlete miss any of those commitments (if necessary). Therefore, the treatment plan must be really well structured to ensure maximum performance of your patient.

6: Even if you treat amateur patients, it is your DUTY as a

dentist to spell out the increased risk of injury during sports and to guide the use of protective equipment. Also informe how to get help when this happens. There are articles that reinforce the need for a preventive check-up, such as requesting panoramas and a good physical examination to rule out any pathology that increases the risk of injury. Be sure to note in the medical records that these recommendations were passed!

7: Confidentiality! If you have an athlete as a patient (in your office) and the coach or other healthcare professional requests some oral health information or treatment, the information may NOT be shared unless the player allows it. Now, if there is a situation where the player is not his usual patient and is sent to his care by the coaching staff, the information may be shared without the patient's express permission as it is assumed that he is aware of the reference and the purpose.

8: If you perform clinical examinations on all players of a team at the request of the coaching staff, clearly this data will be available to them. In addition, you should report whether there are any changes that put the player at a disadvantage, when there are oral signs of medications / drugs or even changes that affect performance. To the players, if asked for in-

formation, should be passed on, unless you notice any change that is essential to the athlete's well-being or performance, then you need to pass it on without requesting it.

Finally! This discussion brought on the blog is very superficial! There are a number of unresolved topics (which need to be addressed!).

Fostering the study for the establishment of a safe professional practice for the CD and the patient is a great need of the specialty, as we are inserted in this peculiar service niche.

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THE AUTHORS

Camila Martins, DSD

UniAvan
Postgraduate student in Oral and Maxillofacial Surgery and Traumatology at IOA
Monitor of the discipline of Sport Dentistry of UniAvan

Caroline Dalri, DSD

UniAvan
Periodontics Specialist
Co-creator of the UniAvan Extension Project in Sports Dentistry - “Fighting Smiles”

Carol Mello, DSD

University Ninth of July
Degree in Physical Education from FMU
Member of LAPOEBI - USP
Consultant of the Brazilian Handball Confederation - CBH

THE AUTHORS

Fernanda Fernandes, DSD

Pontifical Catholic University-RS

Paper: “The insertion of Sport Dentistry”

Juliana Órsia, DSD

Federal University of Paraná

Monitor of the Discipline of Sport Dentistry - UFPR (2015-2016)

Author of the digital book “Practical Guide to Sport Dentistry”

Reminds me of the CRO-PR Technical Chamber of Sports Dentistry

Larissa Leci, DSD

FEAD-MG

Member of UFMG Sports Training Lab

Pharmacology Specialist in Sports - UFMG

America Football Club Intern - MG

THE AUTHORS

Helena Fronza, DSD

Federal University of Santa Catarina
Specialist in Sports Dentistry at IOA
Member of the UFSC Sport Dentistry Project - PODEum

Clara Padilha, DSD, PhD

Federal University of Santa Catarina
Endodontist - Uningá
Sports Dentist - UP
School of Dentistry, UniAvan