

# The Influence of Intraoral Devices on Sports Performance: A Study Report

PAREDES, FRANCISCO<sup>1</sup>; GODINHO, CATARINA<sup>2</sup>

<sup>1</sup> MDFV em Clínica de Odontopediatria no Instituto Universitário Egas Moniz., Caparica, Portugal; <sup>2</sup> Centro de Investigação Interdisciplinar Egas Moniz (CiiEM), Instituto Universitário Egas Moniz, Caparica, Portugal.

**Introduction:** The practice of sports, especially contact sports, may cause orofacial injuries and dental trauma. In order to avoid or minimize this type of situations, the use of intraoral devices, in most cases is highly recommended [1]. Some studies suggest that this may have the ability to promote the sport performance on athletes. However, some authors associate the improvements over the sports performance when using the intraoral device to the placebo effect [1].

The goal of this study was to identify and summarize what type of changes occur on the athletes' sports performance when using intraoral devices (mouthguard).

**Material and methods:** The PubMed database of the U.S. National Library of Medicine and B-on was used as the main electronic databases to collect data for this review. We analyzed all studies published, from 2007 to 2017 using these online databases, with the following Key-words: "mouthguard"; "sport performance" and "sport dentistry". We used Mendeley software for electronic title management. Publications written in Portuguese, English or Spanish were included.

**Results:** Nine studies were included. The protective function of intraoral devices is widely studied and tested. All studies used in this work compared the differences between using and not using the devices. They also compared the differences among the different kinds of intraoral devices used, therefore assessing the influence on the athletes sports performance. The results of the studies varied. Some revealed positive effects on sports performance [1] and others demonstrated that there were negative effects on the performance of athletes when using the intraoral devices.

**Discussion and Conclusions:** The type of changes occur on the athletes' sports performance when using intraoral devices may vary from positive effects to no effects. No negative effects have been reported. More studies are needed to further understand the effect of this kind of devices in the sports performance.

## References:

- [1] Garner, D., Dudgeon, W., & McDivitt, E. (2011). The Effects of Mouthpiece use on Cortisol levels During an Intense Bout of Resistance Exercise, (5), 2866–2871.
- [2] Golem, D., & Arent, S. (2015). Effects of Over-The-Counter Jaw-Repositioning Mouth Guards on Dynamic Balance, Flexibility, Agility, Strength, and Power in College-Aged Male Athletes, (23), 50–5102.