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Gnathopostural approach in sports medicine: Clinics and research

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Since the seventies and eighties, gnathologists developed different scientific studies for analyzing the correlation between dental occlusion and sports performance. Literature reviews underline how these studies bring many conflicting results; anyway it seems to exist a correlation between dental occlusion and sports performance, not only because of an effect on muscle strength, but probably for the intervention of other dental occlusion influenced co-factors. (e.g. Postural control). Moreover during competitions and training many professional athletes wear mouthguards to protect their stomatognathic apparatus and thus an individual mouthguard properly balanced could also be able improve their sports performance. Our clinical experience showed that athletes should consider the chance of having a complete dental analysis by a sports dentistry specialist in order to protect their stomatognathic apparatus also trying to have an improvement of their performance after a proper dental therapy using an appropriate mouthguard or occlusal splint or as an aid to physiotherapy in healing frequent painful symptomatology that prevents the athlete from having a correct and continuous training program. Studies made by the authors on athletes and air force pilots, showed the usefulness of the force platform and other instruments (ex. computerized analysis of occlusion, thermography) in the gnathopostural approach to sports medicine. In fact, the force platform is able to detect the influence of the mandibular position on the sway area and postural control of the athlete. Recent pilot studies from our group found that muscle force in the upper and lower limbs was not influenced by altered mandibular position. Regarding postural balance, it is widely accepted that the cervical region has a significant effect on postural control mechanisms in general. As the mandibular position is directly functionally related to the cervico-cranial region, further research is needed to explore these relationships and the possible effects on postural control. An inaccurate fabrication of mouthguards for protecting the stomatognathic system could unbalance the highly specialized postural system of these individuals, predisposing them to an even higher incidence of painful posture-related symptomatology. Thus all athletes should be individually and carefully analysed with clinical and instrumental analyses by a professional expert in sports dentistry and possibly treated with reversible occlusal treatments in order to evaluate the real effectiveness of an occlusal splint in improving postural structure and sports performance.

Biography

Dr. Hans Isselée graduated at the Catholic University of Leuven (KU Leuven) in 1989. He has a broad clinical experience as a physical therapist in musculoskeletal disorders. In 1991 he specialized in temporomandibular disorders at ACTA Amsterdam. He achieved his PhD in 2002 in Rehabilitation Sciences and Physiotherapy at the KU Leuven with a doctoral thesis on 'Temporomandibular disorders and hormonal fluctuations' with Prof A. De Laet. He is lecturer and researcher at the KU Leuven musculoskeletal research group in Leuven and Bruges, Belgium.

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