

Musicians postural control strategies: vestibular input role

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(Aims) Postural dysfunctions are among the causes of many musicians pathologies, mainly related to overuse (Norris, 1993). Postural evaluation usually is based on biomechanical aspects; recent neurophysiological acquisitions affirm the central role of vestibular input as intrinsic reference in the regulation of postural control designed to ensure maximum efficiency to the minimum energy expenditure (Goodworth, 2010; Borel, 2008).

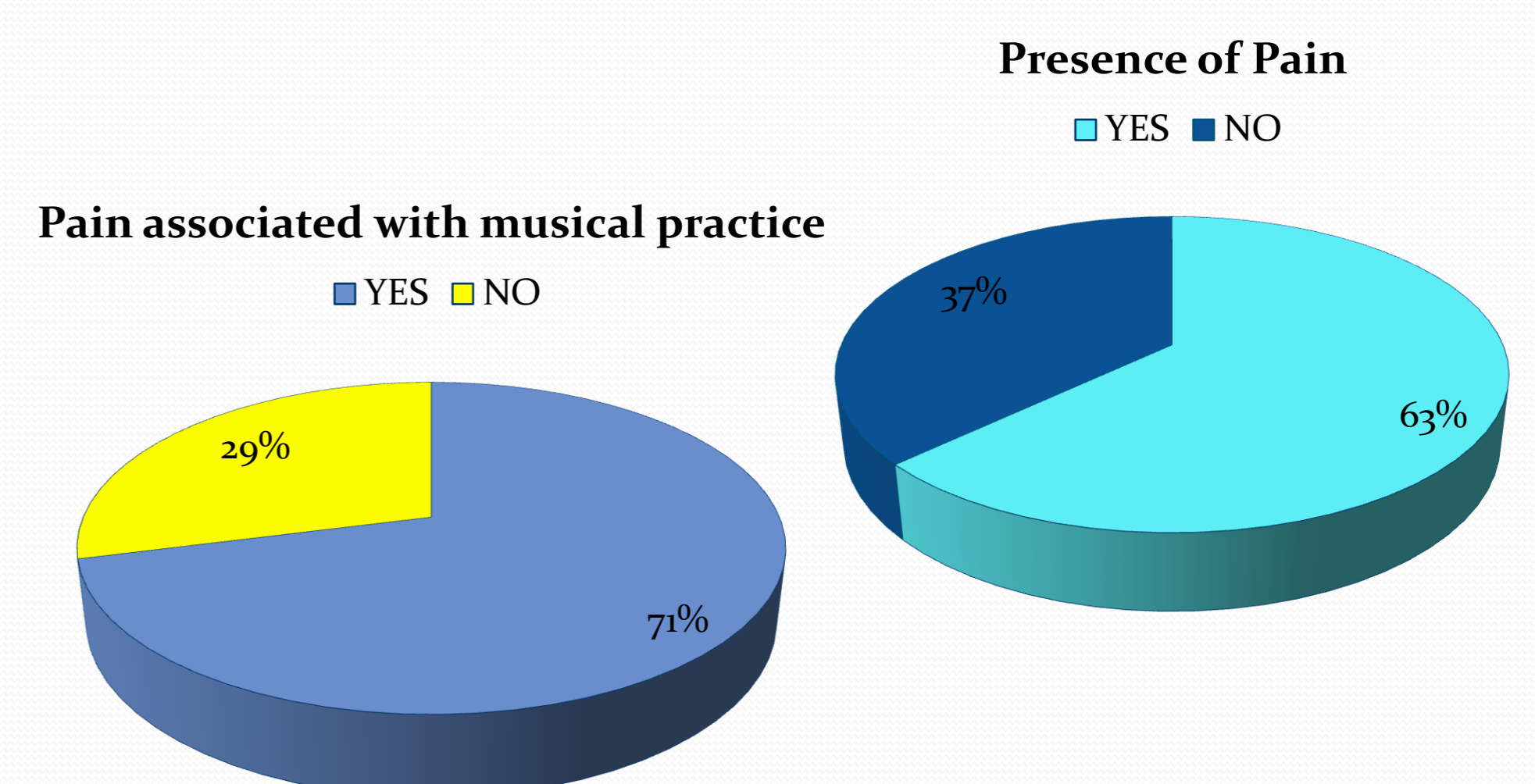
Vestibular system dysfunctions will be checked in musicians suffering from "overuse syndrome".

(Results) 100 questionnaires had been assigned, 30 were returned and assessed. 63% of the subjects declared they suffered from pain. 71% of them associated pain to musical practice, and 59% reported limitations in the act of playing. 11 out of 30 musicians agreed to undergo a posturography testing, with different test conditions.

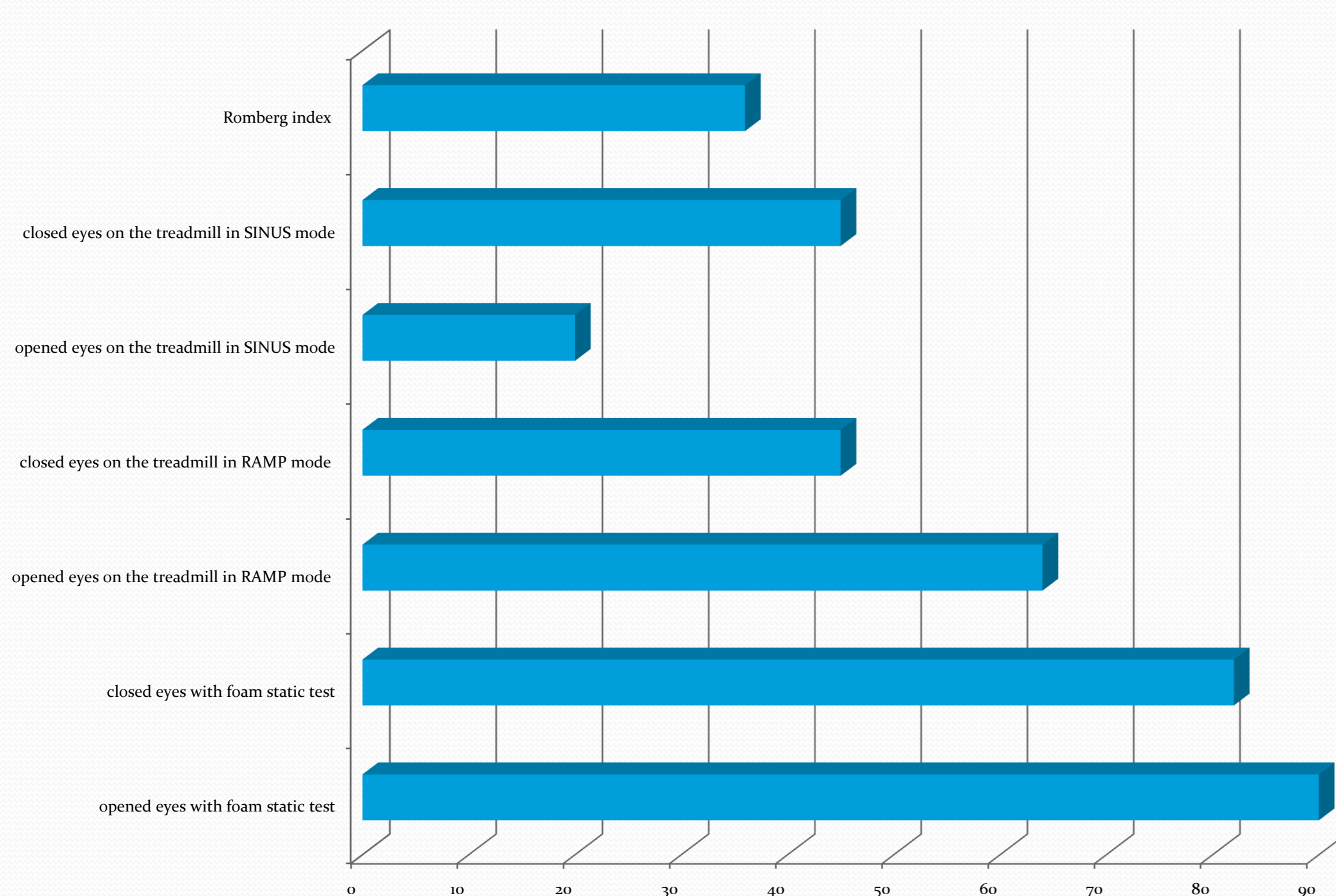
The most meaningful test to highlight changes in the vestibular system are the closed eyes with foam static test (82% of people shows minor disturbances) and the opened and closed eyes on the treadmill in RAMP mode (64% and 45% of alterations). More than 36% of the subjects under consideration shows postural blindness (Romberg index <100) e overcorrected posture.

(Materials and Methods)

Advanced courses musicians of F. Venezzese Conservatoire in Rovigo have been chosen. They had to fill two questionnaires (Epidemiological and Assessment of chronic pain); then a static and dynamic posturography test was carried out by Synapsys Posturography System.



Most meaningful tests with alterations



(Discussion) The musicians under consideration fall in the prototypes of patients suffering from "overuse syndrome". Posturography assesses the ability of the subjects to control posture through the postural fluctuations quantification, and the connected work done by the different elements of the postural system (visual, proprioceptive, vestibular). The most meaningful data concerns: the vestibular control modifications, minor however in high percentage; Romberg index <100, which highlights a sight destabilizing influence on the postural control of these musicians; and finally an overcorrected posture, deduced by a very small statokinesigram, consistent with excessive postural stiffness and musculoskeletal tensions reported.

(Conclusions) *The survey proves an high prevalence of typical overuse syndrome symptoms and vestibular system modifications among the musicians under consideration.*

As we lack pertaining literature about the vestibular input role in overuse syndrome or in other playing-related diseases, and the sample is small, we are proceeding a large-scale checked survey to confirm the theories and achieved results.

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