

Editorial

Surface Electromyography During Walking

This supplement of the *TOREHJ* contains some reviews from the lectures held during the Annual Course of Surface Electromyography (February 26-28, 2009) organized by The Italian Society of Clinical Movement Analysis (SIAMOC) in Catania (Italy).

The educational program of SIAMOC is focused not only on the diffusion of recent advances in this field for those people working in gait laboratories, but, perhaps more interestingly, even for those clinicians involved in the field of rehabilitation who want to benefit of surface electromyography in the diagnostic process and decision making. In fact, in the last two decades, surface electromyography during gait has gained an increasingly important role in the evaluation of gait disorders, by allowing both the identification of abnormal muscle activation patterns and the quantification of the effects of rehabilitation interventions. Since the muscle can be considered as a “windows” on the Central Nervous System, by surface electromyography we may have the opportunity to collect some precious information about the functioning of spinal mechanisms, namely of reciprocal innervation, as well as about the timing and relative intensity of effort of agonist/antagonist muscles, during walking.

The topics of this supplement regard the history of the study of skeletal muscle function (Y. Blanc and U. Dimanico), electrophysiology of normal and pathologic muscle activations (G. Li Volsi and F. Licata), technical aspects of surface electromyography (A. Merlo and I. Campanini), electrode placement and “the minimal crosstalk area” (Y. Blanc and U. Dimanico), physiological activation patterns of lower limbs (M.G. Benedetti and Coll.) and trunk (M. Cioni and Coll.), assessment of muscle overactivity and spasticity with dynamic polyelectromyography (A. Esquenazi, M. Cioni and N.H. Mayer), principal components analysis of electromyographic signals (G. Bosco), influence of laboratory’s setting (M. Pisasale and M. Cioni) and how to prepare and understand a report (M. Manca and P. Marchi).

In conclusion, the main goal of this supplement is to give specific information about a methodological approach which, accordingly to an evidence based medicine, is modifying the process of diagnosis and intervention in Clinical Rehabilitation.

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