

## Evoking Tonic Reactions with Myofascial Touch: Moving Towards Objectivity?

Luiz Fernando Bertolucci, MD<sup>a</sup>, Luiz Antonio de Arruda Botelho, MD<sup>b</sup> and César F. Amorim, MSc.<sup>c</sup>

<sup>a</sup> Associação Brasileira de Rolfing®, Av Dr Arnaldo, 1644, 01255-000 São Paulo SP phone: 11 36727002, email [fer-bertolucci@uol.com.br](mailto:fer-bertolucci@uol.com.br)

<sup>b</sup> Fundação Selma, Rua Conceição Marcondes da Costa, 170, São Paulo, SP phone: 11 55433277, email [lbotelho@uol.com.br](mailto:lbotelho@uol.com.br)

<sup>c</sup> Universidade Estadual Paulista – UNESP – FEG, Guarantietá, SP-Brazil Depto de Pós-Graduação em Engenharia Mecânica-Biomédica phone: 12 39424736, email [cesar@emgssystem.com.br](mailto:cesar@emgssystem.com.br)

**INTRODUCTION** Most myofascial manual therapies lack objective criteria in diagnosis and treatment. This abstract describes preliminary measurements of a phenomena observed in connection with a particular style of myofascial therapy. EMG recordings suggest the stimulation of tonic reactions, which might facilitate a more objective approach.

**METHODS** In this pilot study of six normal subjects, surface EMG electrodes (NeuroEducator II, Therapeutic Technologies) were positioned bilaterally on the supine subjects' cervical erectors at the level of C3-C4. Recordings were taken during the performance of a myofascial maneuver in the occipital region, starting from a state of electrical silence. Video recordings were also made (to access, visit <http://www.youtube.com/watch?v=aK8FcbnvCHO> and more videos from this user).

**RESULTS** After the maneuver had started, electrical activity of the cervical erectors was observed for all subjects. The signal slowly raised and stayed present throughout the maneuver. Once finished the maneuver, the signal ceased immediately or a few seconds thereafter. RMS mean values are summarized below.

subjects	right (μV)	left (μV)
A	0.81	3.32
B	6.28	10.29
C	1.26	2.50
D	21.70	3.93
E	4.67	17.68
F	1.78	3.03

Horizontal nystagmus, visible through the eyelids, was also observed and recorded in four of the six subjects.

**DISCUSSION** The observation of involuntary reactions (e.g.: muscular and oculomotor activity) during a particular kind of myofascial release led us to undertake this pilot study, which purpose was to verify whether any detectable muscle activity was present during the maneuvers. The involuntary EMG activity here described suggests that the practitioner's touch somehow evokes reflexes. Possibly related reactions include the righting, tonic neck and cervico-ocular reflexes. The maneuvers applied characteristically connect the body segments (head, thorax, pelvis.etc) resulting in a particular sensation of stability under the practitioner's hands. Such stability seemed to be related to the intensity of EMG signal.

Considering that this kind of myofascial therapy is being observed as particularly affective, one can hypothesize that it stimulates physiological self-organizing mechanisms, like the stretching mammals perform after wakening. The recording of measurable variables, such as EMG output or nystagmus, lends an objectivity commonly lacking in observations of most myofascial techniques. Additional studies should be undertaken to better understand the nature and usefulness of such involuntary reactions.