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## From prevention to the management of nonspecific chronic pain: Is vertical phoria a landmark?

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**P**ostural control in quiet upright stance requires the central integration of visual, vestibular and somaesthetic inputs, and their appropriate coordinate transformations to permanently generate adapted muscular response. Vertical heterophoria (VH) is the vertical misalignment of the eyes when the binocular vision is briefly interrupted, vertical orthophoria (VO) when there is no misalignment. Studies reported in healthy subjects that: 1) VH experimentally induced by a vertical prism influences postural stability; 2) Subjects with VH vs. VO are less stable; 3) The cancellation of VH with an appropriate prism improves postural stability. In nonspecific chronic back pain subjects (nsCBP), all with VH, the same behaviour was recorded. It was hypothesized that VH indicates a perturbation of the somaesthetic cues required in the sensorimotor loops involved in postural control and the capacity of the CNS to integrate these cues optimally, suggesting prevention possibilities. Sensorimotor conflict can induce pain and modify sensory perception in some healthy subjects; maybe nsCBP results from such prolonged conflict in which VH could be a sign, with new theoretical and clinical implications. Indeed, clinical studies suggested the use of VH as a landmark in the management of nsCBP. For instance, VH can be linked to conflict from the stomatognathic system, the pelvis or refractive error; cancel the conflict most of the time restored VO immediately, diminished pain, improved mobility of spinal and peripheral joints, and normalized behaviour in the balance tests after initial alternation, but remain to be precisely evaluated: studies are in progress in our laboratory.

## Biography

Eric Matheron has completed his Ph.D. in neuroscience in 2009 from University of Paris. He is Research Associate at IRIS Group - Centre d'Etudes de la SensoriMotricité (CESeM), CNRS/UMR 8194 - Université Paris Descartes in Paris, Physiotherapist in private practice in Dijon, and temporary teacher at the University of Paris and University of Burgundy.

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