

## LETTER TO THE EDITOR

# Locomotor programs versus 'conventional' physical therapy? Locomotor training

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In a recent editorial,<sup>1</sup> the authors regret that locomotor programs for people with spinal cord injury (SCI) increasingly replace 'standard physical therapy', which leads to deficits in mobility and independence of patients using the wheelchair. This generalisation in the absence of references to the literature ignores the many positive effects of properly performed specific locomotor training on a treadmill (Laufband (LB) therapy) as originally suggested for clinical practice by Barbeau's and our group.<sup>2,3</sup> True, in contrast to previous strategies that focused on mobility in the wheelchair, our goal has been first to bring every single patient to his personal optimum in independent upright locomotion (without abandoning wheelchair training).<sup>3</sup> 'Context and activity-related learning' demanded intensive training of upright walking with rules for limb setting, best practised on a treadmill with a harness allowing body-weight support (BWS). In a study with historical controls and the identical in- and exclusion parameters, LB therapy achieved strikingly better results for acute and chronic SCI patients than any conventional physiotherapy practiced at that time.<sup>3</sup> Most important was the high number of originally wheelchair bound SCI patients to become able to stand up without foreign help and walk for short distances, often including walking staircases. Obviously, patients had objectively become more independent. These new abilities were maintained when tested years later.

Meanwhile, it seems, 'conventional physiotherapy' has adopted the principle of context-related training for walking, usually using a treadmill and harness, together with aided walking over ground

(now with trained therapists not only assisting proper limb setting but also providing BWS and maintaining upright position).

On the other hand, the editors<sup>1</sup> quite rightly warn to propagate locomotor programs to ASIA A and B SCI patients in clinical routine and as a monotherapy. This warning may be extended to include un-reflected use of robots or poorly understood epidural electrical stimulation of spinal structures. Research always occurs at the borderline of current knowledge, and there is no doubt in my mind that every effort and sufficient funding has to go into such fields, however, authors (and editors of clinical journals) are responsible for a decent interpretation of their and others scientific observations. Recent comments like 'we are entering a new era when the time has come for spinal-cord-injured people to move', based on questionable assessments in a single patient, are quite un-tolerable.

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1 Harvey L, Wyndaele JJ. Are we jumping too early with locomotor training programs? *Spinal Cord* 2011; **49**: 947.

2 Wernig A, Müller S. Laufband locomotion with body weight support improved walking in persons with severe spinal cord injuries. *Paraplegia* 1992; **30**: 229-238.

3 Wernig A, Müller S, Nanassy A, Cagol E. Laufband therapy based on 'rules of spinal locomotion' is effective in spinal cord injured persons. *Europ J Neuroscience* 1995; **7**: 823-829.