



## **Editorial**

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### **Chronic low back pain, chronic disability at work, chronic management issues**

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## *Chronic low-back pain, chronic disability at work, chronic management issues*

Low-back pain (LBP) stands out as the leading musculoskeletal disorder because it is both highly prevalent and the disability with which people live for the greatest number of years (1, 2). Reaching a peak between the ages of 30–50 years, LBP affects a population at a time of career advancement (3, 4). Back pain is the most expensive disease in terms of indirect costs due to sickness absence and work disability. Indirect (or productivity) costs contribute 93% to total costs, illustrating the importance of the consequences of the disease for work performance (5, 6). On a personal level, low self-motivation and self-confidence make it harder to initiate the return-to-work (RTW) process, especially when problems at work are related to the reason for sick leave (7, 8). At the workplace level, colleagues take over the tasks of the worker on sick leave, work piles up, or another worker is hired to take over the tasks. Timely RTW is thus of great benefit for both injured workers and their employers.

The majority of people who experience an episode of back pain recover quickly without residual functional loss, and most of these episodes never reach the consulting room (9). Overall, it is estimated that 60–70% of patients recover within 6 weeks, and 80–90% within 12 weeks. However, recovery after 12 weeks is slow and uncertain, and fewer than half of individuals disabled >12 months return to work. After two years of absence from work, the RTW rate is close to zero (10): the longer a worker is unable to work, the greater is the probability that he/she will not return to work.

Chronic LBP is not just “the same as acute back pain lasting longer”, but the result of a complex interplay of physical, psychological, social, and occupational factors. The World Health Organization’s International Classification of Functioning Disability and Health (ICF) has recognized the influence of personal and workplace factors on activity and participation levels (11). If the cause of work disability is associated with workplace factors, then a return to an unchanged workplace (with or without appropriate treatment for the disorder) may be not successful and even lead to recurrent sick leave of longer duration (12, 13). Personal and workplace factors may become RTW barriers.

Management of chronic LBP thus has to take into account potential psychological and workplace RTW barriers that might hinder recovery. Key workplace factors include heavy physical demands, the inability to modify work, job stress, an unsupportive workplace, job dissatisfaction, poor expectation of RTW, and fear of re-injury (14). Key psychological factors include depressed mood, social isolation, pain catastrophizing, fear-avoidance beliefs, and low self-efficacy for managing pain (15). The recommendations for management of chronic LBP highlight the multidimensional nature of the problem. For example, the European guidelines for the management of chronic non-specific LBP recommend assessment of domains including work-related factors, psychosocial distress, and depressive mood, and point out that no single intervention is likely to be effective due to the multidimensional nature of chronic LBP (16). International guidelines therefore recommend the use of supervised active exercises, multidisciplinary approaches, cognitive-behavioral therapies, and measures of social and professional order for patients with chronic LBP (16–19).

A number of exercise intervention trials for LBP have specifically targeted affected workers with the aim of facilitating a return to usual work or improving work endurance. An extensive literature review of randomized clinical trials for work conditioning programs among injured workers concluded that these types of programs were effective in reducing sick days for workers with chronic LBP compared to usual measures only when they: (i) integrated cognitive-behavioral approaches with intensive physical training (aerobic capacity, muscle strength and endurance, coordination); (ii) were in some way work-related; and

(iii) were provided and supervised by either a physiotherapist or a multidisciplinary team (20). Although physical exercise can still be considered a beneficial and also a safe strategy for chronic LBP, the exact mechanisms are not yet clear and may be related to improved aspects of physical fitness, improved mood, fears and behavior, decreased sensitization, or combinations of these different mechanisms. Literature analysis suggests that it may be that including workplace visits or execution of the intervention at the workplace is the component that renders a physical conditioning program effective (21).

According to a French study carried out in 2010 by the epidemiological surveillance network for musculoskeletal disorders in the Pays de la Loire region [3 601 113 inhabitants in 2014], the number of employees with LBP is very high. Using the macro Calmar, developed in SAS (SAS Institute, Cary, NC, USA) by the French National Institute of Statistics and Economic Studies (INSEE), the data from this network were extrapolated to the regional population covered by the occupational medicine (excluding some special social systems not represented in the study) to determine the extent of the phenomenon at the regional level (22). Thus, we can estimate that >268 000 employees reported backache during the preceding seven days and more than half a million (316 552 men and 244 253 women) during the 12 months preceding the survey (ie, 59.3% of men and 55.0% of women). Considering that 2–7% of people with non-specific LBP are at risk of developing chronic pain and disability in due course (23), this would indicate 11 216–39 257 employees at risk of developing severe and durable work disability.

Given these statistics – and considering the recommended types of programs for chronic LBP, on the one hand, and the total amount of patient provision by multidisciplinary teams of rehabilitation centres on the other – it is obvious that we cannot meet requirements. These costly and time-consuming intensive multidisciplinary programmes can thus only be offered to a minority of the most heavily affected patients and therefore do not seem likely to respond to public health requirements (16, 18, 24).

A lighter program may be one alternative strategy to full-time hospital-based programs at the same stage of treatment, with valuable results in terms of disability and occupational outcome for patients suffering from chronic LBP (24–30). More is not always better (31). It is therefore important to define both what the determining components of management are to overcome activity restriction, including occupational status, and how to include more hospital-independent programs in our healthcare systems in order to treat a larger number of patients more effectively at a lower cost and be able to offer stratified management programs adjusted to the severity of individual situations (32).

## References

1. US Burden of Disease Collaborators. The state of US health, 1990-2010: burden of diseases, injuries, and risk factors. *JAMA*. 2013 Aug 14;310(6):591-608. <http://dx.doi.org/10.1001/jama.2013.13805>
2. Vos T, Flaxman AD, Naghavi M, Lozano R, Michaud C, Ezzati M, et al. Years lived with disability (YLDs) for 1160 sequelae of 289 diseases and injuries 1990-2010: a systematic analysis for the Global Burden of Disease Study 2010. *Lancet*. 2012 Dec 15;380(9859):2163-96. [http://dx.doi.org/10.1016/S0140-6736\(12\)61729-2](http://dx.doi.org/10.1016/S0140-6736(12)61729-2)
3. Rossignol M, Rozenberg S, Leclerc A. Epidemiology of low back pain: what's new? *Joint Bone Spine*. 2009 Dec;76(6):608-13. <http://dx.doi.org/10.1016/j.jbspin.2009.07.003>
4. Frymoyer JW, Cats-Baril WL. An overview of the incidences and costs of low back pain. *Orthop Clin North Am*. 1991 Apr;22(2):263-71.
5. van Tulder MW, Koes BW, Bouter LM. A cost-of-illness study of back pain in The Netherlands. *Pain*. 1995 Aug;62(2):233-40. [http://dx.doi.org/10.1016/0304-3959\(94\)00272-G](http://dx.doi.org/10.1016/0304-3959(94)00272-G)
6. Lambeek LC, van Tulder MW, Swinkels IC, Koppes LL, Anema JR, van Mechelen W. The trend in total cost of back pain in The Netherlands in the period 2002 to 2007. *Spine (Phila Pa 1976)*. 2011 Jun;36(13):1050-8.
7. Briand C, Durand MJ, St-Arnaud L, Corbière M. Work and mental health: learning from return-to-work rehabilitation programs designed for workers with musculoskeletal disorders. *Int J Law Psychiatry*. 2007 Jul-Oct;30(4-5):444-57. <http://dx.doi.org/10.1016/j.ijlp.2007.06.014>
8. Labriola M, Lund T, Christensen KB, Albertsen K, Bültmann U, Jensen JN et al. Does self-efficacy predict return-to-work after sickness absence? A prospective study among 930 employees with sickness absence for three weeks or more. *Work*. 2007;29(3):233-8.

9. Papageorgiou AC, Croft PR, Thomas E, Ferry S, Jayson MI, Silman AJ. Influence of previous pain experience on the episode incidence of low back pain: results from the South Manchester Back Pain Study. *Pain*. 1996 Aug;66(2-3):181-5. [http://dx.doi.org/10.1016/0304-3959\(96\)03022-9](http://dx.doi.org/10.1016/0304-3959(96)03022-9)
10. Andersson GB. Epidemiological features of chronic low-back pain. *Lancet*. 1999 Aug 14;354(9178):581-5. [http://dx.doi.org/10.1016/S0140-6736\(99\)01312-4](http://dx.doi.org/10.1016/S0140-6736(99)01312-4)
11. World Health Organization. The International Classification of Functioning, Disability and Health (ICF). 2001; Geneva, WHO (<http://www.who.int/classifications/icf/en/>).
12. Adler DA, McLaughlin TJ, Rogers WH, Chang H, Lapitsky L, Lerner D. Job performance deficits due to depression. *Am J Psychiatry*. 2006 Sep;163(9):1569-76. <http://dx.doi.org/10.1176/ajp.2006.163.9.1569>
13. Sanderson K, Andrews G. Common mental disorders in the workforce: recent findings from descriptive and social epidemiology. *Can J Psychiatry*. 2006 Feb;51(2):63-75.
14. Shaw WS, van der Windt DA, Main CJ, Loisel P, Linton SJ. "Decade of the Flags" Working Group. Early patient screening and intervention to address individual-level occupational factors ("blue flags") in back disability. *J Occup Rehabil*. 2009 Mar;19(1):64-80. <http://dx.doi.org/10.1007/s10926-008-9159-7>
15. Kendall N.A.S., Burton A.K., Main C. J. and Watson P. (2009) Tackling musculoskeletal problems: a guide for clinic and workplace - identifying obstacles using the psychosocial flags framework. The Stationery Office, London.
16. Airaksinen O, Brox JI, Cedraschi C, Hildebrandt J, Klüber-Moffett J, Kovacs F, et al.; COST B13 Working Group on Guidelines for Chronic Low Back Pain. Chapter 4. European guidelines for the management of chronic nonspecific low back pain. *Eur Spine J*. 2006 Mar;15 Suppl 2:S192-300. <http://dx.doi.org/10.1007/s00586-006-1072-1>
17. Savigny P, Watson P, Underwood M; Guideline Development Group. Early management of persistent non-specific low back pain: summary of NICE guidance. *BMJ*. 2009 Jun 4;338:b1805.
18. Chou R, Huffman LH; American Pain Society; American College of Physicians. Nonpharmacologic therapies for acute and chronic low back pain: a review of the evidence for an American Pain Society/American College of Physicians clinical practice guideline. *Ann Intern Med*. 2007 Oct 2;147(7):492-504. <http://dx.doi.org/10.7326/0003-4819-147-7-200710020-00007>
19. Roquelaure Y, Petit A et les 22 membres du groupe de travail. Surveillance médico-professionnelle du risque lombaire pour les travailleurs exposés à des manipulations de charges. Société Française de Médecine du Travail et Haute Autorité de Santé [Medico-professional analysis of lumbar risk in workers exposed to handling of loads. French Society of Occupational Health and National Authority of Health]. Octobre 2013. [http://www.chu-rouen.fr/sfmt/autres/Argumentaire\\_scientifique.pdf](http://www.chu-rouen.fr/sfmt/autres/Argumentaire_scientifique.pdf)
20. Schonstein E, Kenny DT, Keating J, Koes BW. Work conditioning, work hardening and functional restoration for workers with back and neck pain. *Cochrane Database Syst Rev*. 2003;(1):CD001822.
21. Schaafsma FG, Whelan K, van der Beek AJ, van der Es-Lambeek LC, Ojajärvi A, Verbeek JH. Physical conditioning as part of a return to work strategy to reduce sickness absence for workers with back pain. *Cochrane Database Syst Rev*. 2013 Aug 30;8:CD001822.
22. Sautory O. La macro CALMAR - Redressement d'un échantillon par calage sur marges, Document n°F9310, Série des documents de travail de la Direction des Statistiques Démographiques et Sociales [Internet]. Paris: Insee; 1993. Report No.: F 9310. <http://www.insee.fr/fr/methodes/outils/calmar/docalmar.pdf>
23. Balagué F, Mannion AF, Pellisé F, Cedraschi C. Clinical update: low back pain. *Lancet* 2007;369(9563):726-8. [http://dx.doi.org/10.1016/S0140-6736\(07\)60340-7](http://dx.doi.org/10.1016/S0140-6736(07)60340-7)
24. Koes BW, van Tulder MW, Ostelo R, Kim Burton A, Waddell G. Clinical guidelines for the management of low back pain in primary care: an international comparison. *Spine*. 2001 Nov 15;26(22):2504-13; discussion 2513-4. <http://dx.doi.org/10.1097/00007632-200111150-00022>
25. Bontoux L, Roquelaure Y, Billabert C, Dubus V, Sancho PO, Colin D, et al. Étude du devenir à un an de lombalgies chroniques inclus dans un programme associant reconditionnement à l'effort et action ergonomique. Recherche de facteurs prédictifs de retour et de maintien au travail [One-year study of chronic low-back pain included in a program involving reconditioning and ergonomic action. Research of predictors of return to and maintenance of work]. *Ann Readapt Med Phys*. oct 2004;47(8):563-72. <http://dx.doi.org/10.1016/j.annrmp.2004.03.006>
26. Jousset N, Fanello S, Bontoux L, Dubus V, Billabert C, Vielle B et al. Effects of functional restoration versus 3 hours per week physical therapy: a randomized controlled study. *Spine*. 2004;29(5):487-93; discussion 94. <http://dx.doi.org/10.1097/01.BRS.0000102320.35490.43>
27. Lamb SE, Hansen Z, Lall R, Castelnovo E, Withers EJ, Nichols V, et al. Underwood MR; Back Skills Training Trial investigators. Group cognitive behavioural treatment for low-back pain in primary care: a randomised controlled trial and cost-effectiveness analysis. *Lancet*. 2010 Mar 13;375(9718):916-23. [http://dx.doi.org/10.1016/S0140-6736\(09\)62164-4](http://dx.doi.org/10.1016/S0140-6736(09)62164-4)
28. Lambeek LC, van Mechelen W, Knol DL, Loisel P, Anema JR. Randomised controlled trial of integrated care to reduce disability from chronic low back pain in working and private life. *BMJ*. 2010 Mar 16;340:c1035. <http://dx.doi.org/10.1136/bmj.c1035>
29. Demoulin C, Grosdent S, Capron L, Tomasella M, Somville PR, Crielaard JM, Vanderthommen M. Effectiveness of a semi-intensive multidisciplinary outpatient rehabilitation program in chronic low back pain. *Joint Bone Spine*. 2010 Jan;77(1):58-63. <http://dx.doi.org/10.1016/j.jbspin.2009.11.003>
30. Roche G, Ponthieux A, Parot-Shinkel E, Jousset N, Bontoux L, Dubus V et al. Comparison of a functional restoration program with active individual physical therapy for patients with chronic low back pain: a randomized controlled trial. *Arch Phys Med Rehabil* 2007;88(10):1229-35. <http://dx.doi.org/10.1016/j.apmr.2007.07.014>

31. Smeets RJ, Severens JL, Beelen S, Vlaeyen JW, Knottnerus JA. More is not always better: cost-effectiveness analysis of combined, single behavioral and single physical rehabilitation programs for chronic low back pain. *Eur J Pain*. 2009 Jan;13(1):71-81. <http://dx.doi.org/10.1016/j.ejpain.2008.02.008>
32. Petit A, Roche-Leboucher G, Bontoux L, Dubus V, Ronzi Y, Roquelaure Y, et al. Effectiveness of three treatment strategies on occupational limitations and quality of life for patients with non-specific chronic low back pain: Is a multidisciplinary approach the key feature to success: study protocol for a randomized controlled trial. *BMC Musculoskelet Disord*. 2014 Apr 16;15:131. <http://dx.doi.org/10.1186/1471-2474-15-131>

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