

Worker health

## Workplace interventions

L A M Elders, A Burdorf

### Do they matter in return to work after absenteeism because of low back pain?

Low back pain is a common health condition in working populations. Considering the lifetime prevalence of 60–85%, it will eventually affect almost everyone in life, men and women equally. In the majority of patients low back pain is a self-limiting condition, from which 90% of all patients are expected to recover in about six weeks. Hence, it has been suggested that prevention should focus more on preventing disability resulting from low back pain than on preventing the onset of back pain.<sup>1</sup> As a result, duration of sickness absence is increasingly being used as a health parameter of interest to study the consequences of disability in occupational groups and to evaluate the effectiveness of intervention. Workers remaining off work after 2–3 months are responsible for the majority of the associated health care costs and have a substantial risk for long term disability.<sup>1</sup> Thus, identifying those workers on sickness absence who are at risk for a longer period of sickness absence is essential for intervention purposes.

In the past decades it has been well documented that physical load caused by lifting, awkward back postures, and whole body vibration is a risk factor for the onset and recurrence of low back pain. In the past 10 years the focus in aetiological research has slowly shifted from physical towards psychosocial and individual risk factors. It seems that psychosocial stress, for example, high job demands with low control, and psychological traits, for example, pain catastrophising and kinesiophobia, influence the occurrence of low back pain and play an important role in the transition from acute to chronic back pain. Moreover, there is sufficient evidence that physical, psychosocial, and individual risk factors are interrelated at any phase of low back pain.<sup>2</sup> In fact, these risk factors may vary according to the severity and chronicity of low back pain. Knowledge about the interrelations between risk factors associated with different expressions of low back pain might be useful in developing intervention programmes aimed at both the worker and the workplace.

Given this complex interaction among work related and individual risk factors

for the occurrence of low back pain, it seems striking that most studies on prognostic factors for return to work have only identified disease related characteristics, such as pain intensity and functional status. In various randomised clinical trials the effectiveness of medical interventions on return to work have been studied, but the specific role of work related risk factors is hardly addressed. This makes one wonder whether the risk factors that cause the low back pain do matter at all in the process of returning to work after sickness absence due to low back pain. In most European countries and the United States treatment guidelines for low back disorders exist, but most guidelines have not addressed the specific contribution of work related interventions on the effectiveness on return to work. Hence, the question arises as to what instruments are available for the occupational physician to facilitate return to work of a worker with a sustained episode of low back pain.

The limited evidence from longitudinal studies on the effectiveness of non-medical interventions on musculoskeletal disorders suggests that workplace adaptations may be beneficial.<sup>3</sup> Intervention programmes on return to work after sickness absence due to low back disorders have shown that back-school types of interventions, regardless of type and contents of the programme, are effective in the subacute phase (after 60 days) of low back pain.<sup>4,5</sup> However, few studies have focused on return to work after sickness absence of 3–4 months. After this prolonged period, most workers on sick-leave will not be able to resume work without being supported by an intervention, either medical or non-medical. If medical interventions do not result in return to work, non-medical interventions seem to be the only option.

In a promising study by Anema and colleagues, published in this issue, the effects of ergonomic interventions on return to work were evaluated across six different countries.<sup>6</sup> The variation in the use of ergonomic interventions in these countries was large and seems to reflect differences in procedures

enacted by the national social security systems, in legislation, and in available workers' compensation benefits schemes. However, despite these obvious problems in comparability this study showed that the combination in which interventions were imposed were more or less equal: at first there is adaptation of job tasks, secondly alteration of working hours, and finally, to a lesser extent, adaptation of the workplace. The results are somewhat surprising because workplace adaptations seem to be the most effective means of enhancing return to work after 3–4 months of sick leave. This suggests that ergonomic interventions should start with workplace adaptation rather than adjusting job tasks and working hours. These interesting findings partly depend on the sample of workers studied, which was limited to workers who have returned to work for a long lasting period after being off work for 3–4 months due to low back pain. Hence, the factors that determined whether workers return to work at all or not have not been addressed. Another critical point of concern is that no information was present on whether the ergonomic interventions were applied before, during, or after work resumption. As a consequence, it is not known whether the ergonomic interventions resulted in a reduction in physical workload and whether a sustained compliance with the imposed ergonomic interventions contributed to the observed beneficial effect on return to work. Thus, as is acknowledged by the authors, the causal relation between the effect of ergonomic interventions and earlier return to work has yet to be established.

Despite the limitations of this study, the crucial lesson learned is that ergonomic interventions may support return to work by changing the work environment of workers being on the threshold of disability. However, imposing ergonomic interventions, as being one of the many options of secondary prevention, will only be successful when all stakeholders in the rehabilitation process, such as employers, workers, and physicians, sufficiently attune their activities. A successful intervention also calls for a tailor-made approach to offer the highly vulnerable group of workers on long term sick leave due to low back pain a chance to resume work without relapse of their complaints. Due to lack of scientific information, it is still very difficult to distinguish between those ergonomic interventions that work for workers on long term sick leave and those that do not work. However, the current research on ergonomic interventions clearly shows that workers on sick

leave due to back pain may benefit from these preventive measures. Occupational health professionals involved in the management of workers with low back pain are challenged to convert these approaches into powerful tools in their daily practice.

*Occup Environ Med* 2004;**61**:287–288.  
doi: 10.1136/oem.2003.010207

.....

#### Authors' affiliations

**L A M Elders, A Burdorf**, Department of Public Health, Erasmus MC, University Medical Center Rotterdam, Netherlands

Correspondence to: Dr L A M Elders, Erasmus MC, University Medical Center Rotterdam, Department of Public Health, PO Box 1738, 3000 DR Rotterdam, Netherlands; l.elders@erasmusmc.nl

#### REFERENCES

- 1 **Frank JW**, Brooker AS, DeMaio SE, *et al.* Disability resulting from occupational low back pain. Part II: What do we know about secondary prevention? A review of the scientific evidence on prevention after disability begins. *Spine* 1996;**21**:2918–29.
- 2 **Elders LAM**, Burdorf A. Interrelations of risk factors and low back pain in scaffolders. *Occup Environ Med* 2001;**58**:597–603.
- 3 **Hogg-Johnson S**, Cole DC. Early prognostic factors for the duration on temporary total benefits in the first year among workers with compensated occupational soft tissue injuries. *Occup Environ Med* 2003;**60**:244–53.
- 4 **Loisel P**, Lemaire J, Poitras, *et al.* Cost-benefit and cost-effectiveness analysis of a disability prevention model for back pain management: a six-year follow up study. *Occup Environ Med* 2002;**59**:807–15.
- 5 **Elders LAM**, Van der Beek A, Burdorf A. Return to work after sickness absence due to back disorders—a systematic review on intervention strategies. *Int Arch Occup Environ Health* 2000;**73**:339–48.
- 6 **Anema JR**, Cuelenaere B, van der Beek AJ, *et al.* The effectiveness of ergonomic interventions on return-to-work after low back pain; a prospective two year cohort study in six countries on low back pain patients sicklisted for 3–4 months. *Occup Environ Med* 2004;**61**:289–94.

#### Answers to multiple choice questions on *Dermal exposure to chemicals in the workplace* by S Semple, on pages 376–382

- (1) (a) false; (b) false; (c) false; (d) false; (e) false
- (2) (a) false; (b) true; (c) true; (d) false; (e) false
- (3) (a) false; (b) false; (c) false; (d) true; (e) true
- (4) (a) true; (b) true; (c) false; (d) true; (e) true
- (5) (a) false; (b) true; (c) true; (d) true; (e) true