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# Back pain: Prevention and management in the workplace



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### A B S T R A C T

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Despite all the efforts in studying work-related risk factors for low back pain (LBP), interventions targeting these risk factors to prevent LBP have no proven cost-effectiveness. Even with adequate implementation strategies for these interventions on group level, these did not result in the reduction of incident LBP. Physical exercise, however, does have a primary preventive effect on LBP. For secondary prevention, it seems that there are more opportunities to cost-effectively intervene in reducing the risk of long-term sickness absence due to LBP. Starting at the earliest moment possible with proper assessment of risk factors for long-term sickness absence related to the individual, the underlying mechanisms of the LBP, and also factors related to the workplace by a well-trained clinician, may increase the potential of effective return to work (RTW) management. More research on how to overcome barriers in the uptake of these effective interventions in relation to policy-specific environments, and with regard to proper financing of RTW management is necessary.

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## The burden of back pain and scope of this review

Back pain may be considered a symptom that is usually not attributable to a specific pathology such as infection, tumour, osteoporosis, fracture, structural deformity, inflammatory disorder, radicular syndrome or cauda equina syndrome [1]. In about 90% of cases of back pain, the pathogenesis is unknown, and it is considered non-specific back pain. Because the pain is mostly felt in the lower part of the back, it is also termed 'low back pain (LBP)'. However, there is no specific additional value of this adjective, as pain higher in the back does not seem to be different from LBP. LBP is reported four times more frequently than mid-back pain [2,3].

Most people will experience one or more episodes of LBP in their lives. For most, these episodes are self-limiting, and they will require no medical care [4]. The majority of patients attending their general practitioner in connection with LBP also recover fairly quickly without specific treatment with a median recovery period of 7 weeks. After 12 weeks, only 35% of these patients attending their general practitioner still have symptoms, although relapses are common with 60–75% relapsing within 1 year [5]. According to some researchers, LBP should actually be considered a recurrent condition rather than a self-limiting one [6]. A truly 'initial' episode of LBP is probably rare in adults, as many children and adolescents have also experienced significant LBP episodes [7,8]. In only a minority of subjects (10%), LBP becomes a manifest chronic problem, and it persists even after 1 year leading to disability and sickness absence or even loss of employment over time. Long periods out of work are associated with two to three times increased risk of poor general health, two to three times increased risk of mental health problems and even 20% excess mortality risk [9,10]. Prolonged sickness absence can result in permanent disability, even without serious illness, as patients become depressed, inactive, develop catastrophic beliefs and become fixated on their disability.

The burden from LBP is very high throughout the world. Out of the 291 conditions studied in the global burden of diseases in 2010, LBP was found to have the sixth highest burden. LBP caused more disability globally than any other condition [11,12]. Based on systematic reviews about the prevalence and incidence of LBP, Hoy et al. calculated a global point prevalence of 9.4% (95% confidence interval (CI): 9.0–9.8) with prevalence peaks in older age groups [12]. With the prospect that future populations all over the world will continue to grow and age, the burden from LBP will further expand at the same time.

A difficulty in estimating the prevalence of LBP is that this depends on the definition used [1]. If LBP is defined as requiring sickness absence, then prevalence in the previous 6 months is estimated to be around 8%; if LBP is defined as pain lasting at least a day, then 6-month prevalence is estimated to be around 45% [13]. In 2002, a uniform definition of LBP episodes was proposed stating that an episode of LBP is a period of pain in the lower back lasting for >24 h, preceded and followed by a period of at least 1 month without LBP. An episode of sickness absence due to LBP is a period of sickness absence due to LBP, preceded and followed by a period of at least 1 day at work [14]. The pooled estimate for the occurrence of sickness absence in workers with chronic or recurrent LBP is estimated to be around 15.5% in studies with follow-up periods up to 6 months [15]. The economic costs associated with LBP are high mainly due to productivity losses [16]. These productivity losses related to LBP are a result of either being less productive while being sick at work (i.e., presenteeism), of sickness absence (i.e., absenteeism), of being work disabled, or even of exit from the labour market by early retirement. For most individuals with work disability or with early retirement, there will be direct consequences for their personal income [17,18]. For the government, both situations will also place a burden because of the lost income taxation revenue and the increase in government benefit payments to the retired individuals [17]. With the increasing proportion of the 45–64-year-old group in the working population, this matter will probably need even more attention in the future [19]. Not only productivity losses but also health-care utility plays a considerable part in the financial burden of LBP as well [20]. Despite existing professional guidelines, requests for a routine diagnostic imaging and referral to a specialist care due to acute episodes of LBP are still a normal daily practice [21]. Currently, it remains a huge challenge for practitioners to change patient expectations regarding LBP management and to avoid unnecessary referrals to a specialist care [22].

This article will provide a brief overview about effective interventions to prevent incident, or to reduce recurrent or chronic back pain in the workplace with or without sickness absence, remaining

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