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### **The low back disability problem**

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## **Abstract**

There has been a revolution in understanding and management of low back pain, with a shift from a biomedical model of 'injury' to a biopsychosocial model of disability, and from traditional orthopaedic advice about rest to a more active strategy of advice and support to continue ordinary activities as normally as possible.

This presentation briefly reviews:

- Non-specific low back pain (LBP) from a biopsychosocial perspective.
- Subjective health complaints.
- Modern, evidence-based, clinical guidelines for acute LBP.
- 'Yellow flags': Psychosocial risk factors for the development of chronic pain and disability.
- New UK *Guidelines for the Occupational Health Management of Low Back Pain*.
- An active rehabilitation programme for workers having difficulty returning to normal occupational duties at approximately 4-12 weeks.

It also provides a selected bibliography of 23 key references in these areas.

Conclusion:

New understanding and management of LBP has still to be implemented in routine practice. That should reduce the proportion of patients who go on to chronic disability, but there are still large numbers of existing patients with chronic, intractable LBP and long-term incapacity for whom we have no really effective medical treatment. That may ultimately be a social rather than a medical problem, which requires a social rather than a medical answer.

Human beings have had back pain throughout recorded human history and there is no evidence of any significant change in its underlying pathology, its prevalence or its severity. Yet in the last few decades, most western countries have had a dramatic rise in sickness absence, social security benefits and early retirement attributed to non-specific LBP, for which there is no biomedical explanation. For most of the 20<sup>th</sup> century, understanding and management of LBP was dominated by an orthopaedic approach to 'injury' and the search for a structural lesion that could be 'fixed'. That has not found the answer. Instead, there is now suggestion that LBP may be a matter of painful musculoskeletal dysfunction, deconditioning and a disuse syndrome rather than permanent structural damage, and emerging consensus that it can only be fully understood and managed according to a biopsychosocial model .

Over the last two decades, there have been great advances in understanding how psychological factors (including attitudes and beliefs, affective disturbance and coping strategies) can affect illness behaviour and the development of chronic pain and disability. It has long been recognised that socio-economic factors such as compensation also affect human behaviour; yet understanding, defining and measurement of more basic social influences lags far behind (Table 1).

**Table 1**  
**Social influences on low back pain and disability (Waddell & Waddell 1999)**

<i>Social influences:</i>	<i>can all affect:</i>
Culture	Reporting of low back pain
Family	Pain behaviour
Social class	Disability
Job satisfaction and psychosocial aspects of work	Health care and sick certification Sickness absence
Unemployment	Early retirement
Issues about early retirement	
Sickness and Incapacity Benefits	
Compensation & litigation	

### Subjective Health Complaints

From an epidemiological and social security perspective, LBP is not a discrete biomedical problem, but is often associated with other pains, co-morbidities, psychological and stress-related symptoms, and work-related or other social problems.

**Table 2**  
**Prevalence of subjective health complaints in the last 30 days in 4000 Nordic adults (Figures given for age 30-49 years) (Based on data from Eriksen et al 1998)**

	<b>Any complaints</b>		<b>Substantial complaints</b>	
	<b>Men</b>	<b>Women</b>	<b>Men</b>	<b>Women</b>
Tiredness	46%	56%	17%	26%
Worry	38%	39%	13%	15%
Depressed	22%	28%	5%	10%
Headache	37%	51%	4%	9%
Neck pain	27%	41%	9%	17%
Arm/shoulder pain	28%	38%	12%	17%
Low back pain	32%	37%	13%	16%
Foot pain	16%	19%	6%	9%
More than half the subjects reported two or more symptoms				

**Table 3**  
**Incidence of common symptoms in 1000 internal medicine outpatients**  
**(Note these data are for incidence which is much lower than the prevalence data in Table 2)**  
**(Based on data from Kroenke & Mangelsdorff 1989)**

	<b>Incidence (%)</b>	<b>Probable organic basis (%)</b>
Chest pain	9.7%	11%
Fatigue	8.2%	13%
Dizziness	5.5%	18%
Headache	5.2%	10%

Oedema	4.5%	36%
Back pain	4.1%	10%
Dyspnoea	3.7%	24%
Insomnia	3.4%	3%
Abdominal pain	3.0%	10%
Numbness	2.6%	19%

Ursin and colleagues have suggested that complaints like back pain and chronic fatigue are best regarded as 'subjective health complaints' rather than medical conditions. These are common, non-specific, bodily symptoms that affect as many as 75% of adults (Table 2). That is not to imply that these subjective health complaints are 'minor': they now seem to be causing as much or even more suffering and disability as 'organic' medical conditions. Kroenke & Mangelsdorff (1989) investigated such symptoms presenting to an internal medicine department in US and found that only 16% had any identifiable underlying pathology or 'organic' basis, while 10% were considered to have a psychological basis and as many as 74% had no identified aetiology (Table 3). Yet more than 50% of sick certification in Norway is now based more or less entirely on such subjective complaints, the most common of which are musculoskeletal. They also account for most of the rise in sickness absence and social security benefits. Halderson et al (1996) surveyed doctors' and public perceptions and found that we all have conceptual problems with disease/illness/sick certification in such conditions. On sample cases, doctors' decisions on sick certification were more or less random. In the survey, doctors and the general public were reluctant in principle to accept psychological and social problems as the basis for sick certification; yet in practice, claimants regularly seek and doctors regularly issue sick certification for subjective health complaints.

## Clinical Guidelines

There is now a solid scientific evidence base for more rational management of acute LBP (Cochrane reviews, van Tulder et al 1999, Nachemson & Jonsson 2000). There is also wide international consensus on guidelines for clinical management, at least for acute and sub-acute LBP. These guidelines generally embrace the following principles:

- Exclude serious disease
- Reassurance
- Simple symptomatic measures
- Avoid over-investigation, 'labelling' and medicalisation
- Continue ordinary activities as normally as possible.
- Early return to work.
- If not returned to ordinary activities by 4-6 weeks: Intensive re-activation and rehabilitation.

This management if based on a biopsychosocial rather than a biomedical model and is consistent with LBP as a subjective health complaint rather than any specific spinal condition.

UK *Clinical Guidelines for the management of acute LBP* (RCGP 1999) are reproduced as a concise example of such evidence based guidelines (Table 4), although many other European and international guidelines recommend the same approach.

The strength of the Evidence Statements is rated:

- ★★★ Generally consistent finding in a majority of acceptable studies.
- ★★ Either based on a single acceptable study, or a weak or inconsistent finding in some of multiple acceptable studies.
- ★ Limited scientific evidence.

**Table 4**  
**UK Clinical Guidelines for the management of acute LBP**  
(Reproduced from RCGP 1999)

Principal Recommendations	Evidence Statements
<p><b>Assessment</b></p> <ul style="list-style-type: none"><li>♦ Carry out diagnostic triage (between non-specific LBP, nerve root pain and possible serious spinal pathology).</li><li>♦ X-rays are not routinely indicated in simple backache.</li><li>♦ Consider psychosocial 'yellow flags' (see Table 5).</li></ul>	<ul style="list-style-type: none"><li>★ Diagnostic triage forms the basis for referral, investigation and management.</li><li>★ Royal College of Radiologists Guidelines.</li><li>★★★ Psychosocial factors play an important role in low back pain and disability and influence the patient's response to treatment and rehabilitation.</li></ul>

Non-specific Low Back Pain	
<p><b>Drug Therapy</b></p> <ul style="list-style-type: none"> <li>♦ Prescribe analgesics at regular intervals, not p.r.n.</li> <li>♦ Start with paracetamol. If inadequate, substitute NSAIDs(eg ibuprofen or diclofenac) and then paracetamol-weak opioid compound (eg codydramol or coproxamol). Finally, consider adding a short course of muscle relaxant (eg diazepam or baclofen).</li> <li>♦ Avoid strong opioids if possible.</li> </ul>	<p>★★ Paracetamol effectively reduces low back pain.</p> <p>★★★ NSAIDs effectively reduce pain. Ibuprofen and diclofenac have lower risks of GI complications.</p> <p>★★ Paracetamol-weak opioid compounds may be effective when NSAIDs or paracetamol alone are inadequate.</p> <p>★★★ Muscle relaxants effectively reduce low back pain.</p>
<p><b>Bed rest</b></p> <ul style="list-style-type: none"> <li>♦ Do not recommend or use bed rest as a treatment.</li> <li>Some patients may be confined to bed for a few days as a consequence of their pain but this should not be considered a treatment.</li> </ul>	<p>★★★ Bed rest for 2-7 days is worse than placebo or ordinary activity and is not as effective as alternative treatments for relief of pain, rate of recovery, return to daily activities and work.</p>
<p><b>Advice on staying active</b></p> <ul style="list-style-type: none"> <li>♦ Advise patients to stay as active as possible and to continue normal daily activities.</li> <li>♦ Advise patients to increase their physical activities progressively over a few days or weeks.</li> <li>♦ If a patient is working, then advice to stay at work or return to work as soon as possible is probably beneficial.</li> </ul>	<p>*** Advice to continue ordinary activity can give equivalent or faster symptomatic recovery from the acute attack and lead to less chronic disability and less time off work.</p>
<p><b>Manipulation</b></p> <ul style="list-style-type: none"> <li>♦ Consider manipulative treatment for patients who need additional help with pain relief or who are failing to return to normal activities.</li> </ul>	<p>★★★ Manipulation can provide short-term improvement in pain and activity levels and higher patient satisfaction.</p> <p>★★ The optimum timing for this intervention is unclear.</p> <p>★★ The risks of manipulation are very low in skilled hands.</p>
<p><b>Back exercises</b></p> <ul style="list-style-type: none"> <li>♦ Referral for reactivation / rehabilitation should be considered for patients who have not returned to ordinary activities</li> </ul>	<p>★★★ It is doubtful that specific back exercises produce clinically significant improvement in acute</p>

and work by 6 weeks.

low back pain.

★ ★ There is some evidence that exercise programmes and physical reconditioning can improve pain and functional levels in patients with chronic low back pain. There are theoretical arguments for starting this at around 6 weeks.

A number of guideline also recommend that patients should be provided with accurate and up-to-date information and advice in line with the clinical guidelines. *The Back Book* was written specifically to accompany the RCGP guidelines. There is now evidence from RCTs that such carefully selected and presented information and advice can have a positive effect on patients' beliefs and clinical outcomes.

The problem now is how to change professional practice and actually get clinical guidelines implemented, though Rossignol et al (2000) have recently demonstrated in an RCT in primary care that it is possible and can improve clinical outcomes. The more fundamental question is the extent to which this new clinical management can reduce sick certification and sickness absence from work. There is evidence from RCTs at the sub-acute stage that this management can lead to more patients returning to work and returning faster, but there is little or no evidence that there has been any detectable effect on population statistics. Rather, there is increasing evidence that the development of chronic pain and disability depends more on psychosocial issues, and the New Zealand ACC has developed guidance on 'Yellow flags' (Table 5).

**Table 5****'Yellow Flags': Psychosocial risk factors for the development of chronic pain and disability  
(Reproduced from Kendall et al 1997)**

The following beliefs and behaviours are important and consistently predict poor outcomes:

- A belief that back pain is harmful or potentially severely disabling
- Fear-avoidance behaviour (avoiding a movement or activity due to misplaced anticipation of pain) and reduced activity levels
- Tendency to low mood and withdrawal from social interaction
- Expectation of passive treatment(s) rather than a belief that active participation will help

Suggested questions to the worker with low back pain (to be phrased in your own style):

- Have you had time off work in the past with back pain?
- What do you understand is the cause of your back pain?
- What are you expecting will help you?
- How is your employer responding to your back pain? Your co-workers? Your family?
- What are you doing to cope with your back pain?
- Do you think you will return to work? When?

A worker may be considered to be 'at risk' if:

- There is a cluster of a few very salient factors
- There is a group of several less important factors that combine cumulatively

The presence of risk factors should alert the clinician to the possibility of long-term problems and the need to prevent their development. Specialised psychological referrals should only be required for those with psychopathology, or for those who fail to respond to the management advocated in this guideline.

Loisel et al (1997), in another population-based RCT of sub-acute LBP, showed that a combination of clinical case management and an occupational intervention gave x2.4 faster return to work. Most significant, the occupational intervention had more impact.

The UK Faculty of Occupational Medicine (FOM 2000) have just produced the first evidence based *Guidelines for the Occupational Health Management of Low Back Pain*. This covers a range of occupational health situations, of which relevant sections are shown in Table 6.

**Table 6****UK *Guidelines for the Occupational Health Management of Low Back Pain*  
(Reproduced from FOM 2000)****BACKGROUND**

Principal Recommendations	Evidence Statements
<p>You, as an occupational health practitioner, have a professional duty to support the worker with LBP and should do so whether or not occupational factors play any role in causation.</p> <p>Make employers and workers aware that:</p> <ul style="list-style-type: none"> <li>- LBP is common and frequently recurrent but acute attacks are usually brief and self-limiting.</li> <li>- Physical demands at work are one factor influencing LBP but are often not the most important.</li> <li>- Prevention and case management need to be directed at both physical and psychosocial factors.</li> </ul> <p>Establish a partnership, involving workers, employers and health professionals in the workplace and the community, with a common consistent approach to agreed goals, to manage LBP and prevent unnecessary disability.</p>	<p>*** LBP can be occupational in the sense that it is common in adults of working age, frequently affects capacity for work, and presents for occupational health care.</p> <p>*** Physical demands at work can be associated with increased back symptoms and ‘injuries’ but they do not generally produce lasting damage. Overall, they are less important than other individual, non-occupational and unidentified factors.</p> <p>*** Disability due to LBP depends more on psychosocial factors.</p>

<b>MANAGEMENT PRINCIPLES FOR THE WORKER PRESENTING WITH BACK PAIN</b>	
<b>Principal Recommendations</b>	<b>Evidence Statements</b>
<p>Clinical aspects of management should follow the RCGP (1999) clinical guidelines.</p> <p>Occupational health management should support work retention or early return to work retention, and deal with any work issues that form obstacles to recovery.</p> <p>Ensure that workers with LBP receive the key information in a form they understand (The Back Book). Discuss expected recovery times.</p> <p>Encourage the worker to remain in his or her job, or to return at an early stage, even if they still have some LBP.</p> <p>Do not wait until they are completely pain-free.</p> <p>Provide support to achieve this.</p> <p>Initiate communication with the worker's primary health care professional early in treatment and rehabilitation.</p> <p>Advise employers on the actions required, which may include maintaining sympathetic contact with the absent worker.</p> <p>Consider temporary adaptations of the job or pattern of work if necessary.</p>	<p>*** Most workers with LBP are able to continue working or to return to work within a few days or weeks, even if they still have some residual or recurrent symptoms. They do NOT need to wait till they are completely pain free.</p> <p>* Advice to continue ordinary activities as normally as possible, in principle, applies equally to work. RCTs show this approach gives faster return to work loss, FEWER recurrences and less work loss over the next year. There is, however, limited empirical evidence about advice on work in isolation.</p> <p>* There is general consensus but limited scientific evidence that workplace organisational and/or management strategies (organisational &amp; safety culture, optimum case management and early return to work strategies) may reduce absenteeism and duration of work loss.</p>

<b>MANAGEMENT OF THE WORKER HAVING DIFFICULTY RETURNING TO NORMAL OCCUPATIONAL DUTIES AT APPROXIMATELY 4-12 WEEKS</b>	
<b>Principal Recommendations</b>	<b>Evidence Statements</b>
<p>Address the common misconception among workers and employers that you need to be pain-free to return to work.</p> <p>Advise on ways in which the job can be adjusted to facilitate return to work.</p> <p>Communicate and collaborate with primary health care professionals to shift the emphasis from dependence on symptomatic treatment to rehabilitation and self-management strategies. Where practicable refer to an active rehabilitation programme.</p>	<p>*** The longer a worker is off work with LBP, the lower their chances of ever returning to work.</p> <p>** Temporary provision of modified or lighter duties facilitates return to work and reduces time off work.</p> <p>** Changing the focus from purely symptomatic treatment to an 'active rehabilitation programme' can produce faster return to work and less chronic disability. This is more effective in an occupational than in a health care setting.</p>

	** A combination of optimum clinical management, a rehabilitation program, and organisational interventions designed to assist the worker with LBP return to work, is more effective.
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Table 7 provides further detail on an 'Active Rehabilitation Programme'.

**Table 7**  
**An 'Active Rehabilitation Programme' (Reproduced from FOM 2000)**

**Education:**

Directed primarily at overcoming fear avoidance beliefs and encouraging patients to learn to manage and take responsibility for their own self-care (for example *The Back Book*).

**Reassurance and advice:**

Strong reassurance and advice to stay active.

**Exercise:**

An active, progressive exercise and physical fitness programme.

**Pain management:**

Behavioural principles of pain management

**Work:**

In an occupational setting and directed strongly towards return to work.

**Rehabilitation:**

May also include some symptomatic relief measures, but if so these should supplement and reinforce, and must not interfere with the primary goal of rehabilitation.

## Conclusion

There has been a revolution in understanding and clinical management of acute and sub-acute LBP, even if that has still to be fully implemented in routine practice. This new approach should reduce the number of patients who go on to chronic disability. However, there are still large numbers of existing patients with chronic, intractable LBP and long-term incapacity for whom we do not have any really effective medical treatment. More fundamentally, the problem of long-term incapacity due to non-specific LBP may ultimately be a social rather than a medical problem, which requires a social rather than a medical answer.

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