LOW BACK PAIN

Version 2 Final

Document control

Version history

Version	Date	Comments
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2d Draft	27 June 2008	External comments incorporated
2c Draft	16 June 2008	External QA
2b Draft	22 April 2008	Internal QA
2a Draft	2 April 2008	Triennial review with re-draft and latest guidelines incorporated

Changes since last version

Introduction

Low back pain is pain, muscle tension or sometimes stiffness localised below the costal margin and above the inferior gluteal folds, with or without leg pain (which may imply sciatica) and is defined as chronic only when it persists for 12 weeks or more. [1] It is a fundamental problem that in most cases of low back pain it is not possible to reach a definitive diagnosis.

Description

Low back pain is best described as either specific or non-specific.

Specific low back pain should be reserved for episodes where the symptom complex complained of is in keeping with the examination and investigative findings confirm a specific cause such as infection, tumour, osteoporosis, rheumatoid arthritis, fracture or inflammation. [1]

The term sciatica refers to a collection of symptoms suggesting pain in the distribution of the sciatic nerve. It is not a diagnosis, and should be avoided if possible. Patients with pain radiating below the knee, with or without neurological signs or symptoms (paraesthesia, numbness, weakness, reduced or absent reflexes, saddle anaesthesia, etc) are said to have radiculopathy- a disorder of the nerve roots, for which there are many possible causes.[2]

Non-specific back pain is more appropriate to describe the symptom complex in 85% of cases, where terms such as fibrositis, lumbar insufficiency, musculoskeletal strain and mechanical back pain are used but have no objective basis.

Even computerised tomography (CT) scanning and magnetic resonance imaging (MRI) have failed to demonstrate the actual underlying problem with many apparent abnormalities found in pain-free people.

Multiple studies have demonstrated that many spinal abnormalities are as common in asymptomatic people as in those who have pain.

Prevalence

About 70% of adults have low back pain at some time in their lives. [3]

Although it was formerly thought that most episodes resolve within weeks, recent research has shown that 66% - 75% still have mild back pain over one month later. [4]

Acute back pain occurs in all age groups but is most common between the ages of 35 and 55 years. [5]

Survey shows that 40% of adults said they had suffered back pain lasting more than one day in the previous 12 months.
Overall, only 1.5% experience sciatica.

Most cases are acute but about 5% (2% - 7% in different studies) of cases go on to develop chronic low back pain.

Aetiology

It is important to be specific about the symptoms being discussed. The following refers to back pain (felt in the lower back, buttocks and thighs) as opposed to leg pain. Pain felt below the knee referred from the back, with or without neurological signs or symptoms, is neurogenic.

85% of cases of low back pain are non-specific and although the pain has been postulated to arise from areas which allow movement, such as muscle, ligament or facet joints and has been described as “mechanical” attempts to identify specific anatomical sources of low back pain have not been validated in rigorous studies and classification schemes frequently conflict with one another. [6]

Of the remaining 15%, specific causes include compression fracture, ankylosing spondylitis, spinal stenosis, vertebral osteomyelitis, discitis and cancer. [6]
(For a comprehensive list of specific causes see Appendix A)

A number of structural explanations for low back pain have been postulated. There is, however, *no correlation between radiographic findings and non-specific low back pain* [7]. This includes spina bifida occulta, spondylolysis, spondylolisthesis, Scheuermann’s disease and mild-moderate scoliosos.

Numerous risk factors have been suggested for low back pain, including obesity, social class, occupation, smoking, and psychological disorder. There is little overwhelming evidence for any of these. Especially, it is now considered that there is no occupational predisposition to low back pain, in contrast to previous reports implicating heavy physical labour. [8] White collar professionals account for 27.6% of chronic back pain.

Certain psychosocial contributing factors have been identified which increase the risk of acute mechanical back pain moving into a chronic phase.

Belief that back pain is harmful or potentially severely disabling.

Fear and avoidance of activity or movement.

Tendency to low mood and withdrawal from social interaction.

Expectation of passive treatment(s) rather than a belief that active participation will help. [9]

Diagnosis

Recent guidelines from the American College of Physicians and the American Pain Society stress the importance of a focused history and physical examination to place patients into 1 of 3 broad categories.

- Simple backache (non-specific low back pain)
- Pain potentially associated with radiculopathy or spinal stenosis
- Possible serious spinal pathology

The history should include assessment of psychological risk factors which predict risk for chronic disabling back pain. [10]

As low back pain more usually arises from a heterogeneous mixture of various symptom complexes than a distinct disease entity, there is often no laboratory or imaging tests which specifically confirm the underlying diagnosis.

Rather the reverse is the case, with tests such as ESR, CXR, rheumatoid factor, and antinuclear antibodies, being of value in ruling out other rheumatologic or systemic diseases.

Clinical guidelines for the management of back pain presenting in the acute phase have been recommended by the Royal College of General Practitioners. [11]

Cauda equina syndrome (*Immediate referral)*

- Sphincter disturbance
- Gait disturbance
- Saddle anaesthesia

Possible serious spinal pathology ("Red Flags") *(Consider prompt referral (less than 4 weeks)*

- Presentation under age 20 or onset over 55
- Non-mechanical pain
- Thoracic pain
- Past history - carcinoma, steroids, HIV
- Unwell, weight loss
- Widespread neurological symptoms or signs
- Structural deformity

Nerve root pain ***(Specialist referral not generally required within first 4 weeks, provided resolving)***

- Unilateral leg pain worse than low back pain
- Radiates to foot or toes
- Numbness & paraesthesia in same direction
- SLR reproduces leg pain
- Localised neurological signs

Simple backache (*Specialist referral not required*)

- Presentation 20-55 years
- Lumbosacral, buttocks and thighs
- "Mechanical" pain
- Patient well

Assessment of Back Pain

Assessment requires a full history and examination.

Schober's test is one of the most reliable for detection of spinal pathology by measuring lumbar flexion. Two points are marked, 5cm below and 10cm above the dimple of Venus, while the patient is standing. The patient is then asked to bend over as far as possible and the distance between the two marks remeasured. >5cm is normal.

(Note that this should not be carried out as part of a disability assessment as it would be considered inappropriate personal contact.)

Presence of red flag symptoms as described above, or a reduced lumbar flexion should prompt further investigation. ESR, CRP, FBC should be taken, as well as any other tests directed by the history. [12]

Plain radiography, Computerised Tomography (CT) and Magnetic Resonance Imaging (MRI) have not proved useful in assessing non-specific low back pain, [13, 7] nor have these techniques been associated with improved outcomes. [14]

In one study nearly 20% of asymptomatic patients under the age of 40 years showed CT evidence of herniated discs, while in patients over 40 years of age, 50% showed some abnormality on CT scan. [15]

Plain radiography is recommended in some cases for evaluation of possible vertebral compression fracture particularly if there is a history of osteoporosis or steroid use. [16]

MRI or CT is recommended in those who have severe or progressive neurologic deficits or are suspected of having a serious underlying condition or for evaluating those with persistent back and leg pain who are potential candidates for invasive interventions. [10]

Factors in favour of a mechanical cause are a history of specific injury of trauma with perhaps lifting of a load, or twisting in an awkward position. Pain with sudden onset is more likely to arise from a disc (if onset is over a few hours to days) or a ligament tear (if pain is immediate). [15]

Disc related sciatica usually follows a specific dermatome, and while ligament pain may radiate into the buttock and leg it follows a less well defined pattern than sciatica. True sciatic pain is often exacerbated by actions which increase intrathecal pressure such as coughing, sneezing or straining at stool. [17]

Overall limitation of back movement because of pain and tenderness of the paravertebral muscles or other vertebrae related structures is common in all lumbar conditions affecting the musculoskeletal systems. Visceral referred pain, on the other hand, is not typically affected by movement or relieved by rest, but tends to be more constant and worse at night.

Sleep disturbance, appetite loss and irritability may be features, and pain may be perpetuated or reinforced by social and psychological factors. The somatic amplification of symptoms can be a means for the patient to maintain economic survival and self-esteem. [1]

Goals of treatment focus around symptom relief, coping strategies for pain, daily functioning and work status, with minimal adverse effects from treatment. [2], [18] Assessment of these patient-orientated factors is therefore essential, before treatment and at follow up.
The following should be included in the assessment:

- pain
- back-specific function
- generic well-being
- disability (work and social)
- satisfaction with care.

Several validated methods are available but the time required to administer these instruments has been a major obstacle to their widespread use. Both the Roland Morris [Appendix B] and the Quebec Back Pain Questionnaire [Appendix C] have been found useful in assessing effectiveness of treatment but less so in grading disability. An international group of primary care experts has introduced a core set of just six questions which is showing promise particularly with assessment for surgery and surgical outcomes.

This appears suitable for use in a wide variety of settings and this core set has been adopted by the Spine Society of Europe for its Spine Tango registry with the questionnaire available in various languages. [19] [Appendix D]

Differential diagnosis

Ankylosing spondylitis

Affects primarily the axial skeleton. Onset is normally between the ages of 20 and 40 years of age. Morning stiffness, improvement with exercise and waking due to back pain in the second part of the night are also features.

Osteoarthritis

A progressive, degenerative joint disease, which is the most common form of arthritis, especially in older persons. The disease is thought to result not from the ageing process but from biochemical changes and biomechanical stresses affecting articular cartilage.

Osteoporosis

A reduction of bone mass without alteration in the composition of bone, leading to fractures. Primary osteoporosis can be of two major types - either postmenopausal osteoporosis or age-related (senile) osteoporosis. This can lead to vertebral fracture even in the absence of any specific history of trauma.

Compression fractures

Approximately 4% of patients with low back pain will be found to have compression fractures. Most of them will be aged over 70 years. They often occur in persons with generalised osteoporosis or on long term corticosteroid therapy. There is rarely a history of identifiable trauma.

Reiter's syndrome

The criterion has been proposed for the definition of Reiter's syndrome as an episode of peripheral arthritis of more than one month's duration with nonbacterial urethritis or cervicitis.

Psoriatic arthritis

Psoriatic arthritis affects both peripheral and axial joints. In general there is good correlation between skin activity and joint involvement. In more than half of the cases skin involvement appears first. Males and females are affected in equal numbers. Sacroiliitis is seen in 25% to 40% of patients.

Malignant disease

Primary or metastatic disease is the commonest systemic disease affecting the spine yet still accounts for less than 1% of episodes of low back pain. In a patient >50 years old, metastatic disease is far more likely than a primary tumour.

Most patients with back pain due to malignant disease report that the pain is unrelieved by bed rest. Other indicators are age over 50 years, a previous history of cancer, unexplained weight loss, pain duration of over one month and failure to improve on conservative therapy.

Indeed, in a study of 2000 patients with back pain, no malignant cause was found in any patient under 50 years without a history of cancer, weight loss or a failure of conservative therapy.

Spinal infections

These are usually blood borne from other sites associated with urinary tract infections and indwelling urinary catheters, skin infections and injection sites of illicit drugs.

One of these foci of infection is found in 40% of patients with spinal infections. The sensitivity of associated fever is low, as fever is found in 2% of all patients with low back pain, while spinal infections only account for 0.01% of cases of low back pain.

Treatment

Non-pharmacological

Patients should be informed of the generally favourable prognosis of acute low back pain with or without sciatica, including a high likelihood for substantial improvement in the first month. [20] Clinicians should explain that early, routine imaging and other tests usually cannot identify a precise cause and do not improve the outcome, General advice on self-management for non-specific low back pain should include recommendations to remain active, which is more effective than resting in bed for patients with acute or sub-acute low back pain. [21,22] If patients require periods of bed rest to relieve severe symptoms, they should be encouraged to return to normal activities as soon as possible.

Application of heat by heating pads or heated blankets is a self-care option for short-term relief of acute low back pain. [23] In patients with chronic low back pain, firm mattresses are less likely than a medium-firm mattress to lead to improvement. There is insufficient evidence to recommend lumbar supports [24] or the application of cold packs as self-care options.

For acute low back pain (duration <4 weeks), spinal manipulation administered by providers with appropriate training is associated with small to moderate short-term benefits. [25] Back schools, progressive relaxation, cognitive–respondent treatment, exercise therapy, and intensive multidisciplinary treatment have been shown to be of benefit in acute low back pain, but without similar effect for chronic LBP. [26] Other non-pharmacologic treatments have not been proven to be effective for acute low back pain.

For sub-acute (duration >4 to 8 weeks) low back pain, intensive interdisciplinary rehabilitation (defined as an intervention that includes a physician consultation coordinated with a psychological, physical therapy, social, or vocational intervention) is moderately effective [27] and functional restoration with a cognitive-behavioural component reduces work absenteeism due to low back pain in occupational settings.
For chronic low back pain, moderately effective non-pharmacologic therapies include acupuncture, massage therapy, cognitive-behavioural therapy or progressive relaxation (a technique which involves the deliberate tensing and relaxation of muscles, in order to facilitate the recognition and release of muscle tension), spinal manipulation, and intensive interdisciplinary rehabilitation.

Although the level of supporting evidence for different therapies varies from fair to good, exercise programs that incorporate individual tailoring, supervision, stretching, and strengthening are associated with the best outcomes. [28]

There is insufficient evidence to recommend any specific treatment as first-line therapy. Patient expectations of benefit from a treatment should be considered in choosing interventions because they seem to influence outcomes. [29]

Some interventions (such as intensive interdisciplinary rehabilitation) may not be available in all settings, and costs for similarly effective interventions can vary substantially.

Transcutaneous electrical nerve stimulation and intermittent or continuous traction (in patients with or without sciatica) have not proven effective for chronic low back pain.

Evidence is inconsistent on back schools, which have primarily been evaluated in occupational settings, with some trials showing small, short-term benefits. [30]

There is substantial evidence showing no benefit of traction in acute, sub-acute or chronic low back pain. [31]

Back braces and lumbar supports may have a place in the prevention of symptoms if used when performing activities which have the potential to aggravate the condition such as lifting, gardening or vacuuming. Their regular use should be avoided as they lead to muscle deconditioning and continuing chronic pain.

Pharmacological

Medications in several classes have been shown to have moderate, primarily short-term benefits for patients with low back pain. Each class of medication is associated with unique trade-offs involving benefits, risks, and costs.

While the most recent guidelines from the American College of Physicians and the American Pain Society consider that paracetamol is a reasonable first-line option for acute or chronic low back pain they do acknowledge that non-selective non-steroidal anti inflammatory drugs (NSAIDs) are more effective for pain relief. [10, 32]

BMJ (Clinical Evidence) favours NSAIDs for acute low back pain with paracetamol, tramadol, NSAIDs and cyclo-oxygenase 2 (cox 2) inhibitors having a place depending on the individual and response.

Muscle relaxants (benzodiazepines, baclofen, dantrolene) may have a place in acute and chronic episodes. Benzodiazepines may be useful for short term relief of acute low back pain but their propensity to cause problems with abuse, addiction and tolerance means that their use should be time-limited. [33]

Tricyclic antidepressants (amitriptyline) are reserved for chronic cases. Other classes of antidepressants have not been evaluated for low back pain.

Systemic corticosteroids are not recommended for treatment of low back pain with or without sciatica, because they have not been shown to be more effective than placebo.

Paracetamol

Paracetamol has been in use as an analgesic for home medication for over 30 years and is accepted as a very effective treatment for the relief of pain. Interactions with other treatments are rare and at the recommended dosage there are virtually no side-effects.

NSAIDs

All NSAIDs are approximately equal in efficacy, although there is great patient variability in response and the reported incidence of side effects. Generally the use of NSAIDs is empirical and appears to be determined largely by frequency of dose required and cost.

Cyclo-oxygenase 2 (cox 2) inhibitors

While cox-2-specific inhibitors may have a place in those with the potential for gastro-intestinal problems, concerns remain as to the (slightly) increased thrombotic risk. However there is no clear data on the relative thrombotic risk between cox-2 inhibitors and ibuprofen or diclofenac.

Current advice is that all patients should take the lowest effective dose of NSAIDs or cox-2 inhibitors for the shortest time necessary to control symptoms.

Muscle relaxants

There is good evidence for the efficacy of non-benzodiazepines for acute and some benzodiazepines for chronic low back pain, but their adverse effects require caution in their use. [33] Baclofen or dantrolene may also be of benefit. Although described as muscle relaxants they do not actually relax muscle and their effects appear to be secondary to central nervous system sedation.

Tricyclic antidepressants

Tricyclic antidepressants (TCAs) are one of the oldest classes of antidepressants and are still used extensively. Before the introduction of selective serotonin reuptake inhibitors (SSRIs), TCAs were the standard treatment for depression. However, they are associated with more side effects than the SSRIs, and are now more likely to be reserved for cases when SSRIs are ineffective or inappropriate. TCAs work by preventing the reabsorbtion of noradrenaline and serotonin back into the nerve cells. This prolongs the mood-lightening effect of any released noradrenaline and serotonin and in this way helps to relieve depression.

Other interventions

Due to the widespread occurrence and chronicity of the problem many other interventions have been advocated and found favour from time to time. Many have not been scientifically proven to be effective.
Facet joint injections (injection into facet joints, painful lumbo-sacral soft tissues and myofascial trigger points) are now considered to be ineffective or harmful. [34]

There remains a place for Epidural injections using either local anaesthetic and corticosteroid or corticosteroid alone. These have proved effective in relieving pain around a compromised nerve root. Such injections may reduce pain in those with sciatica or predominantly radicular symptoms for up to six months.

Other interventions currently thought to be beneficial are acupuncture (an intervention consisting of the insertion of needles at specific acupuncture points), back schools, behavioural therapy and spinal manipulation. Acupuncture, botanical medicine, massage, neuroreflexotherapy, and spinal manipulation have been shown to have benefit over no-treatment or sham therapies but to have no advantage over conventional treatments [35].

Spinal manipulation is probably most beneficial as a pain relief treatment of acute low back pain without sciatica or neurological involvement. Although a course of chiropractic treatment takes longer than traditional medical treatments, it has been shown that the benefits for patients with chronic low back pain are better and longer lasting than those derived from traditional methods.

Surgical treatment

Surgery is normally carried out in the non-acute phase, except in conditions such as progressive motor deficits or cauda equina syndrome. Surgery is usually indicated in cases of disc herniation for the relief of neurogenic pain, but where the patient's neurological status is stable it may be delayed for up to twelve weeks without adversely affecting the outcome.

Even after apparently successful surgery, the relapse rate within four years is 15%.

Surgery is generally not effective when:

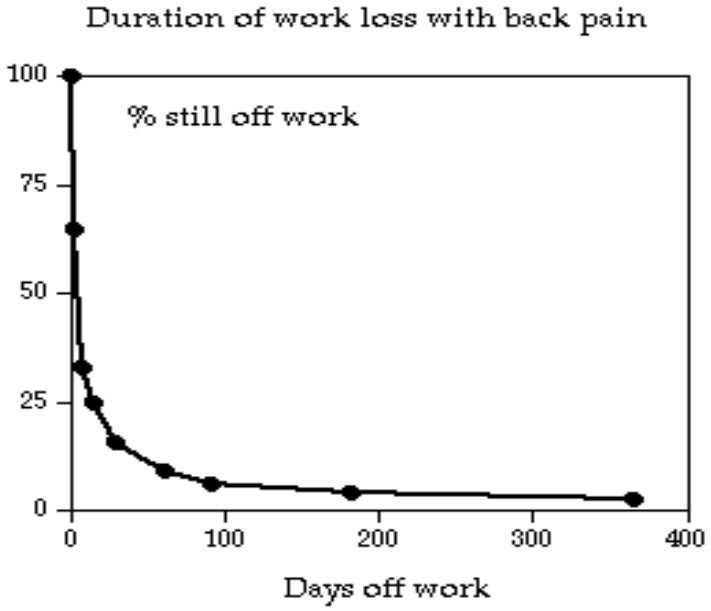
- back pain is greater than leg pain,
- a patient suffers from severe subjective complaints without any objective neurological signs,
- there is a significant co-existing psychiatric condition, or when the patient is involved in active litigation.

Fusion surgery is indicated in some instances where there has been a failure of conservative measures and there is evidence of appropriate pathology. [34]

Prognosis

Life expectancy. Life expectancy in low back pain is not reduced except for the small percentage of, usually older, patients in whom the low back pain is a manifestation of serious systemic disease. In these cases the reduction in life expectancy will be that of the underlying disease.

Course of condition. Most low back pain sufferers (at least those in their initial episode) recover quickly and 90% return to work within six weeks.



The natural history of low back pain can be divided into three phases. In the acute phase, from symptom onset to four weeks, the prognosis is such that even without any medically prescribed treatment, only minimal treatment together with substantial reassurance is warranted.

There is reason to believe that passive modalities of treatment in this phase can increase sickness behaviour by deconditioning body muscles through excessive rest, encouraging therapeutic dependency, and labelling of effects that make some people overreact to their pain.
The sub-acute phase, from four to twelve weeks, is associated with some intermittent back discomfort, though most patients will already have returned to work.

Those remaining off work after 1-2 months, are at a much higher risk of long term incapacity [36].

The third phase, more than three months after symptom onset, is considered to correlate with the development of the chronic pain syndrome. Only 5% of sufferers of low back pain will enter this phase but of those who remain off work for six months, 50% will never return and of those absent for two years virtually none return to the workplace.

For many years, emphasis had been placed on mechanical factors of various types affecting the disability caused by low back pain without definite cause-effects being identified. More recently, the importance of various psychosocial factors has become apparent.

Among the factors implicated are job satisfaction, claims for personal injury, and systems of sickness and invalidity payments where the patient, to receive remuneration, has to prove in an adversarial fashion that the back pain was caused by work or that he has a genuine clinical condition.

Main Disabling Effects

Acute low back pain following unusual strain or activity is the most common form and is characterised by prominent muscle tightness, tenderness and spasm. Pain is invariably complained of but is a highly personal and subjective perception that is difficult to quantify in a reproducible way. However it is the symptom which the patient will report as having the most direct bearing on their limitations.

Those in work may also relate their limitations to age, general health and the physical demands of required job tasks.

Analysis of disability is best performed by assessing activities of daily living (ADLs) which have been reduced, or with which help is required since the onset of low back pain, rather than by the degree of reported pain itself.

The method of assessment of these activities in PCA is by the "Typical Day" technique. "One should endeavour to visualize the life of one's patient, sharing his emotions and viewing step by step his daily habits, his diet and his work. It will be found advantageous to ask the patient to give a brief account of a typical day… his interests, his hobbies, his hopes, his fears, the holidays he gets and whether he enjoys them, the amount of exercise he takes, the games he plays and, in general the sort of life he leads…" Hutchison [37]

In general, non-specific low back pain is usually aggravated by static loading of the spine (prolonged sitting or standing), long-levered activities (vacuuming), or levered postures (bending forwards). It is eased when the spine is balanced by multidirectional forces (walking), or the spine is unloaded (reclining) [38].

Studies have shown the following limitations to be applicable to low back disorders significantly affecting ADLs. [39] Where history and examination confirm that a significant low back condition is present, published evidence suggests the following maximum levels of disability, not all of which will be present in each individual.
The functional areas commonly affected are:-

Lifting: Help is required with heavy lifting, i.e. 14-18kg, such as a heavy suitcase or a three to four year old child. Lifting weights of 2.5kgs (as in PCA) is not affected.

Sitting: Sitting in an ordinary chair watching TV may be limited to less than 30 minutes at a time. Similarly when travelling, journey times may be limited to 30 minutes or less.

Rising: Rising from a chair may require assistance.

Standing: Standing in one place may be limited to less than 30 minutes at a time.

Stairs: The use of a hand rail may be reported but this is often for confidence because of the awareness of pain.

Bending: Difficulty in reliably being able to use a front-loading washing machine, do up shoe laces, and place pet food bowls on the floor, may be reported.

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Diagnosis and management of low back pain and sciatica. *Am Fam Physician*; 52(5):1333-1341

[39] Waddell G. (1987)
Clinical assessment of lumbar impairment. *Clin Orthop*. 221: 110 – 120

Appendix A -

1. ***Congenital***	6. ***Trauma***
Kyphosis	Lumbar strain
Scoliosis	Fracture
Facet asymmetry	Facet subluxation
Transitional vertebrae lumbrosacral unit	7. ***Degenerative***
2. ***Metabolic***	Disc herniation
Osteoporosis	Osteoarthritis
Paget's Disease	Spinal stenosis
Osteopenia	Spondylosis
Hyperthyroidism	Spondylolisthesis
Cushing's syndrome	8. ***Toxic***
3. ***Infection***	Heavy Metal
Osteomyelitis	9. ***Vascular***
Discitis	Aortic aneurysm
Epidural abscess	Diabetic neuropathy
Paraspinous abscess	Aortic occlusion
Sacroiliitis	10. ***Visceral***
Spinal tuberculosis	Prostatitis
4. ***Inflammatory***	Pelvic inflammatory disease
Ankylosing spondylitis	Ovarian cyst
Chronic inflammatory bowel disease	Endometriosis
Reiter's syndrome	Pregnancy
Psoriatic arthritis	Pyelonephritis
Rheumatoid arthritis	Nephrolithiasis
5. ***Neoplasia***	Peripheral abscess
Multiple myeloma	Cholecystitis
Metastatic disease	Pancreatitis
Lymphoma	Peptic ulcer disease
Leukaemia	11. ***Psychosocial (see 1.1.2)***
Primary osseous tumour	Litigation
Spinal cord tumour	Negative psychosocial factors.

Appendix B - Low Back Pain Disability Questionnaire of Roland and Morris

Overview: Roland and Morris developed a questionnaire for evaluating patients with low back pain. from no pain at all to unbearable pain.

NOTE: The questionnaire is usually paired with a visual analogue scale (VAS) for pain rating ranging

Questions answered based on how they pertain to the patient today:

(1) I stay at home most of the time because of my back.
(2) I change position frequently to try and get my back comfortable.
(3) I walk more slowly than usual because of my back.
(4) Because of my back I am not doing any of the jobs that I usually do around the house.
(5) Because of my back I use a handrail to get upstairs.
(6) Because of my back I lie down to rest more often.
(7) Because of my back I have to hold on to something to get out of an easy chair.
(8) Because of my back I try to get other people to do things for me.
(9) I get dressed more slowly than usual because of my back.
(10) I only stand up for short periods of time because of my back.
(11) Because of my back I try not to bend or kneel down.
(12) I find it difficult to get out of a chair because of my back.
(13) My back is painful almost all the time.
(14) I find it difficult to turn over in bed because of my back.
(15) My appetite is not very good because of my back pain.
(16) I have trouble putting on my socks (or stockings) because of pain in my back.
(17) I only walk short distances because of my back pain.
(18) I sleep less well because of my back.
(19) Because of my back pain I get dressed with help from someone else.
(20) I sit down for most of the day because of my back.
(21) I avoid heavy jobs around the house because of my back.
(22) Because of my back pain I am more irritable and bed tempered with people than usual.
(23) Because of my back I go upstairs more slowly than usual.
(24) I stay in bed most of the time because of my back.

Response	**Points**
Yes	1
No	0

total score = SUM(points for all 24 statements)

Interpretation: • minimum score: 0

- maximum score: 24
- The higher the score the more severe the disability associated with the low back pain. A score of 0 indicates no disability and 24 severe disability.
- A score >= 14 indicates a patient in the poor outcome group.

Appendix C

This questionnaire is about the way your back pain affects your daily life. People with back problems may find it difficult to perform some of their daily activities. We would like to know if you find it difficult, because of your back, to perform any of the activities listed below. For each activity there is a scale that ranges from 0 (not difficult at all) to 5 (unable to do). Please choose the **one** response for each activity that best describes your current condition and place a check mark in the appropriate box. Please answer all of the questions.

Because of your back problems, how difficult do you find it today to . . .	**Not Difficult at All**	**Minimally Difficult**	**Somewhat Difficult**	**Fairly Difficult**	**Very Difficult**	**Unable to Do**
Get out of bed?						
Sleep through the night?						
Turn over in bed?						
Ride in a car?						
Stand up for 20 to 30 minutes?						
Sit in a chair for several hours?						
Climb one flight of stairs?						
Walk a few blocks?						
Walk several miles?						
Reach up to high shelves?						
Throw a ball?						
Run one block?						
Take food out of the refrigerator?						
Make your bed?						
Put on socks or pantyhose?						
Bend over to clean the bathtub?						
Move a chair?						
Pull or push heavy doors?						
Carry two bags of groceries?						
Lift and carry a heavy suitcase?						

[a] Reprinted by permission of Lippincott Williams & Wilkins from Kopec JA, Esdaile JM, Abrahamowicz M, et al. The Quebec Back Pain Disability Scale: measurement properties. *Spine.* 1995;20:1943–1949.

Appendix D
SSE SpineTango

Low Back A

Directions

Use a #2 soft pencil for marking.
Only one answer per question allowed
Completely fill in boxes to record answers.

Last name First name Gender

Street M.R.N.

Country Code Zip Code City

Occupation Birthdate (DD.MM.YYYY) Telephone

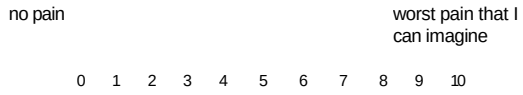
Back problems can lead to back pain and/or pain in the legs/buttocks, as well as to sensory disturbances such as tingling, 'pins and needles' or numbness in any of these regions.

1 Which of the following problems troubles you **the most**? Please tick **ONE BOX only**.

- ☐ back pain
- ☐ leg/buttock pain
- ☐ sensory disturbances in the back/leg/buttocks, e.g. tingling, 'pins and needles', numbness
- ☐ none of the above

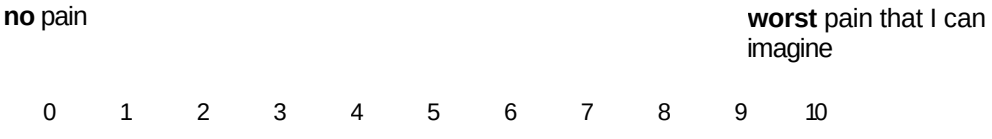
2 For the following 2 questions (2a and 2b) we would like you to indicate the severity of your pain, by drawing a mark on the line from 0 to 10 (where "0" = no pain, "10" = worst pain you can imagine). There are separate questions for **back pain** and for **leg pain (sciatica)/buttock pain.**

Example:



2a How severe was your **back pain** in the last week?

2b How severe was your **leg pain (sciatica)/buttock pain** in the last week?



3 During the **past week**, how much did your back problem **interfere with your normal work** (including both work outside the home and housework)?

- ☐ not at all
- ☐ a little bit
- ☐ moderately
- ☐ quite a bit
- ☐ extremely

4 If you had to spend **the rest of your life with the symptoms you have right now,** how would you feel about it?

- ☐ very satisfied
- ☐ somewhat satisfied
- ☐ neither satisfied nor dissatisfied
- ☐ somewhat dissatisfied
- ☐ very dissatisfied

Please go to the next page...

5 Please reflect **on the last week**. How would you rate your quality of life?

- very good
- good
- moderate
- bad
- very bad

6 **During the past 4 weeks**, how many days did you **cut down on the things you usually do**(work, housework, school, recreational activities) because of your back problem?

- none
- between 1 and 7 days
- between 8 and 14 days
- between 15 and 21 days
- more than 22 days

7 **During the past 4 weeks**, how many days did your back problem **keep you from going to work** (job, school, housework)?

- none
- between 1 and 7 days
- between 8 and 14 days
- between 15 and 21 days
- more than 22 days

Date:

Day 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

Month 1 2 3 4 5 6 7 8 9 10 11 12 **Year** 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19

Signature: _____

Thank you very much for filling in this questionnaire.