



## Back pain: a commonsense approach

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Unfortunately for our patients, and for us as health providers, orthodox medicine is dismal at treating chronic back pain. Nevertheless, some simple guidelines and realistic expectations enable us to positively influence the management of this common and disabling problem.

The lifetime prevalence of back pain is about 80%, and nearly half of all adults in our population will experience a significant episode in a given year. It represents a huge cost to society in economic terms and to individual patients in terms of suffering and reduced quality of life.

### Risk factors

The risk of current back pain is greater in people with weak abdominal muscles and those who self-report past or present poor general health. Risk is increased in people who perform regular heavy lifting; however, people who perform sedentary work are not immune from the complaint and may even be more likely to require hospitalisation.<sup>1</sup>

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### Diagnosis

About 95% of cases of back pain are undiagnosable. Assessment should be aimed at excluding serious or treatable causes (see Table), but trying to give an accurate anatomical explanation for most back pains is futile.

When consulted by a back pain sufferer, the three main questions that need to be addressed are:

- Is there systemic disease, such as sepsis, neoplasia, inflammatory arthritis or vascular pathology?
- Is there neurological deficit and, if present, what is its significance?
- What factors will influence the choice of therapy (e.g. acute or chronic pain, psychosocial factors, patient preference and nonorganic signs)?

Often these questions can be answered on the basis of the history and clinical examination alone, with investigations being of value only when it is necessary to exclude one of the systemic or neurological diagnoses.

The results of an intriguing study conducted in the USA have reflected the confusion surrounding the management of back pain, with the authors concluding that the type of specialist that patients see will determine the investigations they receive.<sup>2</sup> A random sample of 2600 specialists were sent a questionnaire that asked about tests they would order for three hypothetical patients with back pain. Neurosurgeons and neurologists were twice as likely to order imaging in patients with nonradiating back pain compared with the rest of the study group. Physiotherapists and neurologists were three times as likely to order an EMG in patients with sciatica or chronic back pain. Rheumatologists were twice as likely to order laboratory tests in patients with acute or chronic back pain. The results imply that the choice of investigation is more a reflection of the practitioner than of the patient's characteristics or disease.

The Quebec Task Force on Spinal Disorders determined that there was no

evidence to support the use of diagnostic testing in the majority of patients with back pain of less than seven weeks' duration. Most back pains have resolved by seven weeks, and so this interval will select those that require continuing medical management.

### Investigations

Investigations are generally unhelpful if the diagnosis is not clear after taking a patient's history and performing an examination. With improvements in imaging resolution (such as MRI), more and smaller abnormalities are detected, but the relevance of these findings is questionable. Radiology is seductive in its ability to show anatomical structure, but is not helpful in differentiating normal 'changes' from pathology in most individuals (see Figures 1 and 2).

In the absence of objective clinical findings, a diagnosis based on imaging may not give the true cause of a patient's pain. Intervention in an attempt to correct an abnormality found on imaging may be the first step towards disaster.

### Plain x-rays

Plain x-rays are perhaps only of use when looking for fractures, destructive lesions or sacroiliitis. In chronic back pain, the place of the plain x-ray is very limited.

### CT scans

A landmark study of asymptomatic patients who had a CT scan of the lumbar spine found that 35% had abnormal CT scans (20% of patients under 40 years of age and 50% of those over 40 years).<sup>3</sup> The abnormalities found on CT included a herniated disc, facet degeneration and spinal canal stenosis (see Figure 1).

### MRI scans

MRI offers detail as has never been available before with noninvasive techniques. Its use to delineate anatomy and thereby attempt to provide a rational explanation for a back pain is extremely tempting. In



Figure 1. CT scan showing a central and right paracentral disc protrusion with impingement of the dura mater of the spinal cord. Vacuum phenomenon is noted within the disc, and bilateral degenerative changes of the facet joint are also noted. This patient was asymptomatic.



Figure 2. A T2 weighted MRI sagittal image showing L4/5 disc protrusion with degenerative disc changes on L4/5 and L5/S1 discs. Also note the vertebral endplate changes of L4 and L5. The patient was asymptomatic.



Figure 3. A whole body nuclear bone scan (posterior view) of a woman who has widespread 'hot spots' from metastatic breast cancer.

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one study of asymptomatic individuals, over half the subjects had bulging discs and over one-quarter had herniated discs on MRI.<sup>4</sup> Another study found that the incidence of abnormalities on MRI in an asymptomatic population increased with age: 54% of those under 60 years of age had abnormal disc anatomy (including herniated, bulging, or degenerate discs), which increased to 93% in those over 60 years of age (see Figure 2).<sup>5</sup>

### Bone scans

Bone scans are used for suspected inflammatory or destructive bone lesions (see Figure 3).

### Pathology

Pathology tests used to investigate back pain include a full blood count and ESR, as well as calcium, phosphate and alkaline phosphatase levels. The usefulness of these tests is limited unless red flags are present or specific pathology is suggested by the history.

### Management

The good news is that 90% of acute backaches will resolve within eight to 12 weeks of onset. For this reason, virtually any treatment can claim at least an 80% success rate.

The aims of treatment should include:

- reducing anxiety
  - reassuring the patient of the benign nature of the condition
  - increasing autonomy and self-reliance.
- Practitioners should be conscious of

### Table. Red flags: signs of underlying pathology

Red flags	Possible causes
Severe night pain, especially in elderly patients	Malignancy
Systemic malaise, weight loss, fever, night sweats, bony percussion tenderness, lymphadenopathy	Sepsis, malignancy
Inflammatory disease such as ankylosing spondylitis	Conus compression
Percussion tenderness	Fracture, inflammation, malignancy
Anaemia, high ESR, paraproteinaemia or hypercalcaemia	Sepsis, malignancy

the costs of investigation and treatment to both the individual and community.

### Bed rest

Bed rest should be discouraged because it is no better than exercise programs.

**Surgery for back pain should be viewed as a specific therapy for a specific lesion, not as a last resort.**

Note that it runs a risk of deconditioning and increasing a patient's conviction of illness.<sup>6</sup>

### Exercise programs

Exercise programs are generally no better than simple instructions to continue to

work within the limits of pain.<sup>7</sup> To assess the value of exercise further, trials are needed in which greater attention is paid to methods of study.

### Education

Reassurance and patient empowerment, together with education about anatomy, possible origin and benign outcome of back pain, appear to be associated with the quickest return to work and least use of medical resources. These measures can help patients to improve their quality of life despite ongoing pain.<sup>8</sup>

### Surgery

In the USA, it has been estimated that 95% of disc surgery is unnecessary.<sup>9</sup> Of patients who have true sciatica, 80% will be recovered at one year, regardless of

surgical or conservative management. In the setting of sciatica, surgery should be reserved for patients who cannot tolerate their pain and for those with progressing neurological deficit. Surgery will not result in a better neurological recovery than nonoperative management.

The results of spinal fusion appear to be very poor when critically assessed in prospective studies.<sup>10</sup> Thankfully, today this surgery seems to be performed less and less.

### Outcome

Predictors of disability include job dissatisfaction, general life stress, and educational level. Nonpredictors of disability include strength, flexibility, aerobic capacity, as well as spinal canal size or any other pathoanatomical finding. A poor prognosis is conferred by several factors, including: a low educational level, substance abuse, whole leg pain, constant pain, excess bed rest, emergency hospitalisation, psychological distress and an attitude of illness conviction.

The management of back pain appears to follow fads, yet our knowledge remains poor.<sup>11</sup> Our studies are plagued by diagnostic ambiguity and a lack of randomised controlled trials or uniform outcome measures. In addition, psychosocial factors are usually inadequately assessed, in both trials and clinical settings, despite growing evidence of their importance.

### Key points

- A precise diagnosis of back pain is rarely possible.
- Imaging is rarely needed.
- Bed rest, if any, should be kept brief.
- Surgery should be viewed as a specific therapy for a specific lesion. It should not be considered a treatment of last resort.
- Most back pains resolve spontaneously.
- Beware the desire to 'do something'. **MT**

*A list of references is available from the editorial office.*

Australian Rheumatology Association

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