

Self-Care Interventions for Back Pain

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Community pharmacists are often asked to assist patients seeking to treat back pain. Back pain is innocuous in the majority of cases, but it can indicate serious underlying medical conditions. For this reason, pharmacists must be aware of danger signals that mandate a physician referral. They must also have a grasp of nonprescription products and devices that may alleviate uncomplicated back pain.

INCIDENCE AND EPIDEMIOLOGY

Low back pain and thoracic pain affect 54% to 80% of people at some point. (1,2) Research has confirmed that 25% of American adults experienced 1 or more days of back pain in the past 3-month period. (3) Some groups are more likely to be affected, including those who are aging. (1) For example, the first episode of back pain most often occurs between the ages of 30 and 40 years. (3) Those who are not physically fit develop weakness in the back and abdominal muscles that provide spinal support, leading to back pain. (3,4) Some of those patients relate a history of working out heavily on the weekend in a misguided attempt to make up for physical inactivity Monday through Friday. (3) Thus, “weekend warriors” often suffer from painful back injuries. They should be advised to engage in moderate amounts of low-impact aerobic exercise every day, rather than only working out 1 or 2 days a week.

Obesity increases the weight the back must bear, leading to back pain. (5) Racial background is contributory, as African American women experience a higher incidence of spondylolisthesis, a condition in which lower spinal vertebrae slip out

of place. (3,4) Patients may have a genetic predisposition to conditions such as arthritic ankylosing spondylitis that cause back pain.

Job-related issues can cause back pain, such as sitting all day in a poorly designed chair, sitting or standing with poor posture, repeated twisting or bending of the spine, inactivity, heavy lifting or repetitive pulling, and the use of vibrating equipment. (3,4,6)

Smokers are about 30% more prone to suffer from back pain for several reasons. (3,4,7) One is a reduced delivery of nutrients to the lower back disks. Another is the repeated coughing experienced by smokers due to reduced mucokinesis. Smoking also increases the risk of painful osteoporotic spinal fractures. Epidemiologic studies also confirm that smokers are less physically fit and less healthy than nonsmokers, both of which increase the risk of back pain. Smokers also have impaired healing, which prolongs the duration of back pain.

Competitive sports can cause back pain. (8,9) A large study of college students confirmed that being involved in sports since the elementary school years increased the risk of back pain. (10) These students also experienced higher rates of serious, debilitating back pain than their peers.

Backpacks are the subject of increasing scrutiny as causes of back pain. (11) Parents are urged to ensure that a child’s backpack weighs no more than 10% to 15% of the child’s weight. Children should be encouraged to leave all nonessential books and supplies in their locker rather than attempting to carry around unneeded and superfluous items. (12)

RANGE OF SEVERITY OF BACK PAIN

Back pain presents in a variety of ways. (13) Some patients experience an acute, sharp, stabbing, shooting pain of sudden onset. This type is usually short-term, lasting from a few days to a few weeks. Other patients complain of a constant, dull, aching pain, perhaps due to repetitive motion or age-related spinal changes. (3) Patients may relate that they have limited flexibility in the back, that their range of motion is restricted, and/or that they cannot stand upright and straight. (14) If the pain persists for 3 months or more, medical authorities label it as *chronic* back pain. Chronic back pain may lead to progressive loss of function, and a specific etiology is often elusive. (14)

PROGNOSIS OF BACK PAIN

The prognosis of a specific patient's back pain is wholly dependent on its cause. However, most back pain is minor in etiology, and patients with this type of pain can be expected to recover without loss of function. (14,15)

WHEN TO REFER BACK PAIN

If back pain is due to trauma or has lasted for more than 72 hours, the patient should be referred to a physician. (16) A physician referral is also necessary in the following situations: the patient is under the age of 20 or over the age of 55 years; the patient also complains of numbness, weakness, or tingling in any part of the body, or the presence of bowel or bladder incontinence, gait abnormalities, fever, chills, or pain in the lower back or hip that radiates down the back of the thigh to the leg; the patient has persistent, progressive pain unrelieved by standard therapy; the patient has systemic weight loss, systemic illness, past history of cancer, chronic diseases, urethral discharge, or burning on urination; the pain worsens at night or when lying down; the patient uses IV drugs or frequently ingests alcohol; and the patient is immunosuppressed. (16,17)

SELF-CARE INTERVENTIONS

If patients do not require referral, the pharmacist may assist them in their choice of possible self-care interventions. Nonprescription interventions include oral medications, topical external analgesic products, and thermotherapy (locally applied heat).

Internal Analgesics: Internal analgesics carry labeling for treatment of acute back pain. (16) They should not be used for a period exceeding 10 days

when used by adults. Pharmacists can recommend acetaminophen (e.g., Tylenol), ibuprofen (e.g., Motrin IB, Advil), or naproxen (e.g., Aleve). The latter two may be preferable, due to the added anti-inflammatory effects. Manufacturers also market products containing magnesium salicylate tetrahydrate (e.g., Doan's Extra Strength Pain Reliever, Momentum) specifically for back pain, although they are not known to be more efficacious for back pain than other nonprescription analgesics. If acetaminophen is chosen, pharmacists must take care to warn patients not to ingest additional acetaminophen, also known as *APAP*. Patients should be urged to inspect the labels of all nonprescription products to ensure they do not contain APAP. Patients should also check with their pharmacy to ascertain whether any prescription products that will be taken at the same time might contain APAP.

External Analgesics: These topically applied creams, ointments, or liniments usually contain one or more counterirritants, a group of chemicals that act through stimulating receptors in skin, such as those for cold or heat. (16) The resulting sensation makes the underlying pain more bearable. If the condition worsens or if the back pain persists for more than 7 days, the patient should cease their use. These products are not to be applied to those under the age of 2 years, and they must not be applied to wounds or damaged skin. Typical ingredients include those that redden the skin (e.g., methyl salicylate) and those that cool the skin (e.g., menthol, camphor). Products containing these ingredients include BenGay, Icy Hot, and Flexall 454. These products are odorous, and they do nothing to affect the underlying tissue. Patients allergic to aspirin should avoid methyl salicylate. The products must not be applied more often than recommended to avoid toxicity. To prevent burns, never use them with a source of external heat (e.g., a heating pad). Products containing trolamine (e.g., Aspercreme) have not been proven effective. (16)

Thermotherapy: Used carefully and as directed, thermotherapy can provide sustained relief of back pain, soreness, and stiffness. (16) Most patients automatically assume that a heating pad is the best method of achieving pain relief, but there are many factors to consider. Heating pads operate through electrical resistance, using electricity to heat wires embedded in insulating material inside the pad. They have several settings, but at the highest setting, they produce potentially dangerous temperatures until they are manually turned off, possibly causing serious burns. (16) Even at lower settings, they can be dangerous if the patient does not follow all

directions. For instance, the cover must be in place during the entire time of use. Patients must not lie on the pad to treat the back, as heat trapped between the patient and the bed can rise to burn levels. The pad must not be applied to areas of the back that lack feeling, as the patient cannot perceive a burn in progress. Patients must take every precaution not to fall asleep while the pad is being used. If the patient sleeps while the heating pad is actively delivering heat, the patient may fail to realize that a burn is occurring. As previously mentioned, heating pads should never be used with any counterirritant product.

A safer method of delivering heat is with the use of a therapeutic heat wrap (e.g., ThermaCare). Patients may choose one that is specifically designed to deliver heat to the back. These products function through incorporating several discs of iron powder. (16) When the outer wrap is opened, the iron begins to oxidize. After about 30 minutes have passed, the patient perceives a safe heat radiating from the wrap. The heat produced is not likely to harm the patient, as it does not exceed 104°F. This constant, low-level heat is applied for 12 hours and provides relief for 24 hours. The product may be used while sleeping in many cases, but patients aged 55 or older have an increased risk of burning and should only wear the wrap while awake. Heat wraps should not be used by patients with diabetes, poor circulation, heart disease, or rheumatoid arthritis, or by women who are pregnant. Heat wraps should not be used with external analgesics, on unhealthy, damaged, or broken skin, on areas of bruising or inflammation that have occurred within the past 48 hours, on insensitive areas, in combination with other forms of heat, or in patients who are unable to remove them (e.g., babies, children, some elderly patients). (18)

INTERVENTIONS LACKING EFFICACY

Among interventions suggested for back pain are reflexology (massaging the feet) and wearing shoe insoles. In the case of reflexology, investigators evaluated evidence of its efficacy in numerous disorders, finding no reliable evidence of efficacy for any medical condition. (19) Similarly, researchers evaluated all randomized controlled trials of insoles in nonspecific back pain, finding strong evidence that the use of insoles does not prevent back pain, and little evidence that insoles alleviate back pain. (20)

WHAT CAUSED THE PAIN?

Back pain can be caused by a host of issues, including advancing age, inactivity, obesity, and participation in competitive sports. Some factors are related to work, such as lifting heavy objects, use of vibrating machinery, repetitive motions and actions, and bad posture while performing tasks. In these cases, it may be preferable to speak with the employers to determine whether they can alter the workers' circumstances to help prevent future back problems. If management in that workplace is concerned about preventing injury, they could be persuaded to invest in special assistive tools and devices or ergonomically designed furniture.

WHAT SHOULD YOU DO?

The first decision is when to seek the care of a physician. A good rule is to consider the cause. If the pain was due to trauma (e.g., an automobile accident, a fall), making an immediate appointment is a good idea. Another rule is to consider the amount of time. If you do not notice considerable improvement in the pain after 72 hours of treating it on your own, you should see a physician.

WHAT TREATMENT OPTIONS ARE AVAILABLE?

Most pain in the lower back is minor in nature, will go away without any loss of function, and can be treated without surgery. For the first couple of days of nontraumatic back pain, try taking recommended doses of nonprescription products. Acetaminophen (e.g., Tylenol) helps relieve pain, while ibuprofen (e.g., Motrin IB) and naproxen (e.g., Aleve) both help pain and relieve swelling (inflammation). Be sure not to combine nonprescription Tylenol with prescription pain relievers you may have around the house that also contain acetaminophen, such as hydrocodone-acetaminophen combinations (e.g., Lorcet, Lortab). Doing so may cause a dangerous overdose of acetaminophen.

You may wish to try placing ointments or creams on your back, such as BenGay or Icy Hot. However, these products only help mask the pain by heating or cooling the upper layers of skin. They do not help the underlying inflammation. You may choose to try local heat applied to the back through the use of a heating pad or a heat wrap (e.g., ThermaCare). You must not combine local heat with an ointment or cream such as BenGay, or you may burn the area.

WHAT ABOUT BED REST?

Bed rest can be tempting, but you should try to resume your normal activities as soon as possible. Do not rest in bed for more than 1 or 2 days. Getting back to normal hinges on working through the pain.

WHAT ABOUT NONPHYSICIAN PRACTITIONERS?

The role of chiropractic in back pain is controversial at best, and the patient should explore

several resources before making this important decision. They include the American Chiropractic Association (www.acatoday.org) and Chirobase (www.chirobase.org). The same advice applies to acupuncture, reflexology, and other medical interventions that are not yet fully accepted by traditional health care practitioners.

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