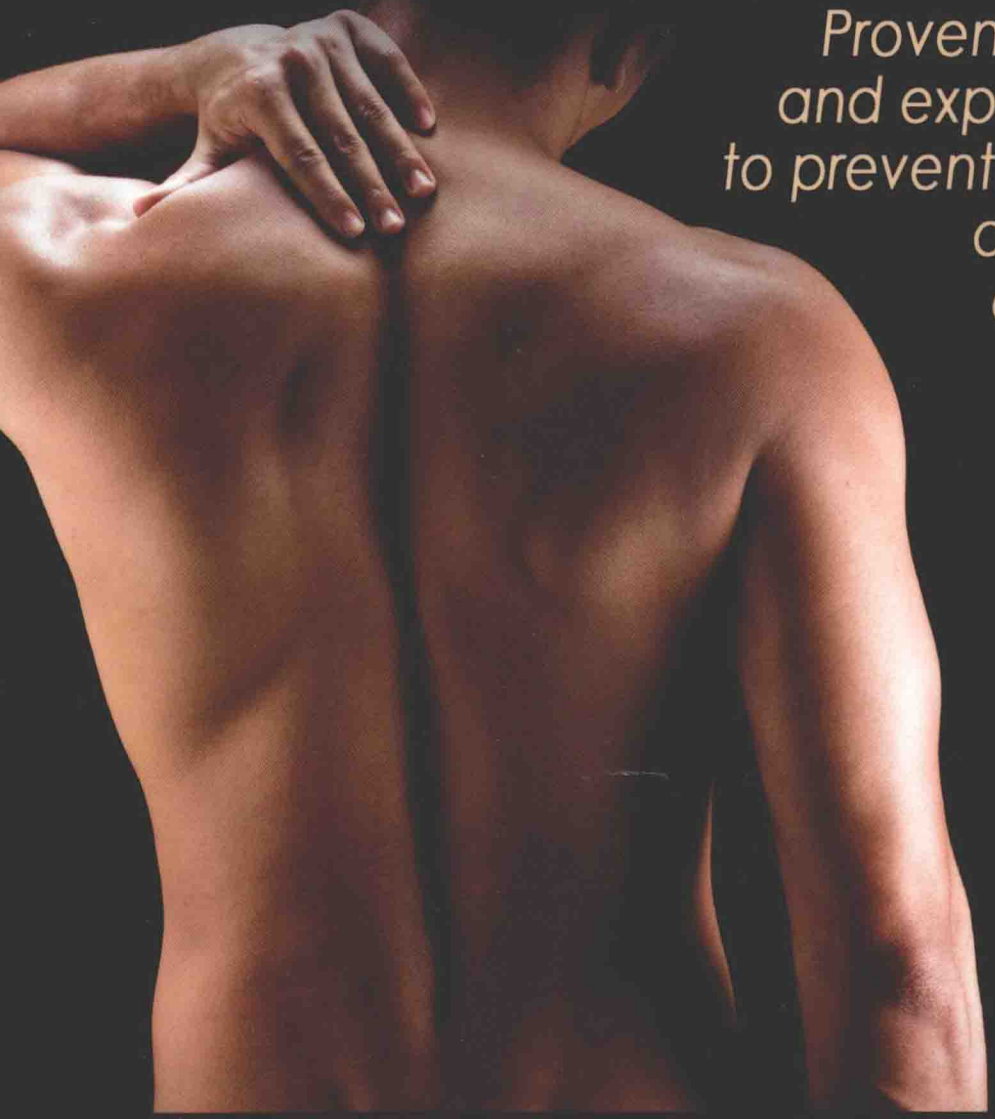
END BACK & NECK PAIN

Proven programs and expert advice to prevent, minimize, and relieve discomfort



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Human Kinetics

Library of Congress Cataloging-in-Publication Data

Fortanasce, Vincent.
End back & neck pain / Vincent Fortanasce, David Gutkind, Robert G. Watkins, III.
p. cm.
Includes index.
ISBN-13: 978-0-7360-9528-0 (soft cover)
ISBN-10: 0-7360-9528-4 (soft cover)
1. Backache--Treatment. 2. Neck pain--Treatment. 3. Self-care, Health. I. Gutkind, David, 1964- II. Watkins, Robert G. III. Title. IV. Title: End back and neck pain.
RD771.B217F67 2012
617.5'64--dc23

2011017968

ISBN-10: 0-7360-9528-4 (print)
ISBN-13: 978-0-7360-9528-0 (print)

Acquisitions Editor: Tom Heine; **Developmental Editor:** Cynthia McEntire; **Assistant Editor:** Elizabeth Evans; **Copyeditor:** Bob Replinger; **Indexer:** Dan Connolly; **Permissions Manager:** Martha Gullo; **Graphic Designer:** Joe Buck; **Graphic Artist:** Kim McFarland; **Cover Designer:** Keith Blomberg; **Photographer (cover):** iStockphoto/ALEAIMAGE; **Photographer (interior):** Neil Bernstein; **Visual Production Assistant:** Jason Allen; **Art Manager:** Kelly Hendren; **Associate Art Manager:** Alan L. Wilborn; **Medical Illustrations:** © Human Kinetics; **Charts and Graphs:** Tammy Page; **Printer:** McNaughton & Gunn

We thank Fortanasce and Associates in Arcadia, California, for assistance in providing the location for the photo shoot for this book.

Printed in the United States of America 10 9 8 7 6 5 4 3 2 1

The paper in this book is certified under a sustainable forestry program.

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E5180

End Back & Neck Pain

Preface

End Back & Neck Pain focuses on the nature of, natural course of, and helpful remedies for the most common spinal pain problems. With an emphasis on education, diagnosis, prevention, and self-care, this book empowers you to participate actively in the healing of your spinal pain and keep it from recurring.

We do this in several ways. First, we provide the information that you need to understand your symptoms. Is it time to go to the emergency room or take out an ice pack? Second, we provide numerous recommendations for self-help, from medication choices to exercise to tips on body mechanics and ergonomic adaptations. The goal is to help you ease the suffering from ordinary and recurring spinal discomfort. Third, we teach you to evaluate your health care professional; can the person back up his or her credentials? Finally, if all remedies fail, we discuss the indications, risks, and expected benefits of spinal injections and surgery.

By the time an average patient finally sees a spine specialist, she or he has been to at least three doctors, tried five medications, and has seen other nonmedical specialists. The person has tried chiropractic treatments, physical therapy, acupuncture, and back and neck devices such as pillows and gravity machines. And the pain persists.

Written by three of the most prominent names in spine health, ***End Back & Neck Pain*** addresses the sharp, shooting, nagging, burning, aching, tight, stiff, and throbbing types of discomfort, whether they arise from a specific trauma or a vague, unknown origin. In this book, you will find relief from that nagging discomfort that you feel between your shoulder blades, the never-ending stiffness on the side of your neck, and the lingering leg pain that just won't go away.

This book covers the likely causes of 95 percent of nonthreatening spinal discomfort conditions and suggests ways to relieve that discomfort. In addition, it discusses the 5 percent of conditions that urgently need attention. ***End Back & Neck Pain*** is an essential guide for those suffering from complex conditions that compromise bowel or bladder function or appear suddenly with numbness and weakness in the arms, legs, or both. In these cases, the most prudent course of action is to obtain direct medical attention through a visit to your physician or local hospital.

The medical community has developed many ways to categorize and conceptualize the origin of spinal discomfort. Physicians, therapists, chiropractors, acupuncturists, and other caregivers focus on different aspects of discomfort and view the same discomfort in unique ways. Within our individual professions, we encounter a variety of opinions, which lead to vastly different approaches to care of the same spinal pain condition. You will need to consider a variety of options and theories when contemplating treatment or seeking a diagnosis. We know that what works for some will not work for all. In the area of spinal pain, no one remedy solves all

problems. Unfortunately, many in the spine business believe in a one-size-fits-all cure. Therefore, you need to know what remedies are appropriate for your unique problem.

Even so, commonalities among conditions make managing spinal pain highly successful for most people. In this book we'll discuss how factors such as your office workstation setup (office ergonomics) or the ways in which you lift, carry, push, and pull (body mechanics) influence your discomfort. Similarly, your diet, level of fitness, smoking and sleeping habits, and stress management influence the prevalence of spinal pain. We'll discuss first aid for fast relief and provide stretches and exercises for common spinal maladies. In a completely accessible way, we'll discuss what structures are likely causing discomfort, how your body works to perceive the discomfort, and why it hurts in the first place. The chapter on medicines to treat spine disorders (chapter 10) will shake you up as you learn what works, what doesn't, and when medication makes it worse.

Along the way, we debunk some common myths associated with spinal pain. For example, many who have arthritis think that exercise is not appropriate. We show you why that is not so and what you can do about it. Some think that because they move all day at work they get enough exercise. We show you why that is not correct. Some think a big, soft, cushiony chair with armrests is appropriate for computer work, but that is not so. Some of you may fear that your discomfort is untreatable, that because injections or therapy or chiropractic care didn't help the next step is surgery. We discuss the details and show you why that may not be true.

In this book you will learn logical and simple self-care concepts that address the more common causes of spinal discomfort. When you have finished reading the book, you should be able to do the following:

- Understand the basic anatomy and function of the spine.
- Understand the origin of spinal pain and the symptoms that communicate what structures are most likely contributing to your spinal pain.
- Understand postural, adaptive shortening, and derangement syndromes.
- Recognize the psychological complications of back and neck pain.
- Be empowered to find and select the physician who will best be able to help you.
- Interpret the voices of pain.
- Know when to see a physician and recognize when the situation is urgent and when it is not.
- Understand what a competent physician should do when taking a history and doing a physical exam.
- Know what questions to ask your health care provider regarding the cause, treatment, and prevention of pain.
- Recognize when medication is needed, which are the best and safest options, and when they cause more harm than good.

- Understand what tests should be ordered and how to prepare yourself for those tests, taking fear out of the unknown.
- Perform emergency self-help interventions when sudden pain occurs.
- Describe and demonstrate how to set up a home or office workstation that minimizes the effects of repetitive motion and accumulative trauma.
- Perform appropriate stretches, exercises, and conditioning activities to treat your specific complaints.
- Understand surgical considerations and the conditions that are appropriate for surgical consideration and intervention.
- Know the questions and answers that you should expect from your surgeon and the risks, complications, and benefits of those interventions. Recognize that your surgeon should discuss which procedure is the best for you and carries the least risk.

For all who suffer from daily, episodic, and recurrent spinal discomfort, we provide a source of information to help you identify common causes, implement simple solutions, and begin straightforward self-help activities. You want to know what is wrong and how to fix it. This book will empower you to understand your pain and take steps to relieve it and prevent it from coming back. This approach makes the book unique. We hope that you find this book a positive step toward maintaining a happy and healthy lifestyle.

Acknowledgments

We would like to thank some of our colleagues who contributed to the development of this book and provided invaluable assistance in presenting this information. David Chang MD, who is a Princeton graduate and who works with Dr. Fortanasce and Dr. Watkins, collaborated with Dr. Watkins on the spinal injection chapter. Thanks also to spinal surgeon Robert Watkins Jr. MD; Lillian Chen DPT; and Michael Fortanasce DPT for their assistance.

Others who have greatly influence our opinions on diagnosis and treatment are our professors and colleagues: the late Vert Mooney, chief of the spinal pain services at Rancho Los Amigos Hospital (USC); Dr. Joseph Van Der Mueler; and Leshe Weiner, department chairs of neurology at USC.

Others who helped with research, typing, and preparation of the book: Laura Kennedy, Chris Foss, Annie Kershaw, Jessica Ruiz, the Dandacar brothers, Tammy Kempton, and Kathy Williams.

My wife Gayl for her psychological insights on pain. Friends who read and gave insights: Didi Astraw, Bob Bancroft, and Jeff Drier. My sisters Joan Donafrio and Elaine Fellows, and nephew Mark Fellows DPT.

A special thank you to our editors Tom Heine and Cynthia McEntire and the Human Kinetics team who worked so diligently on this project.

To my family, for whom I have always tried to do my very best, and to my parents, to whom I am extremely grateful for all they have provided for me. Thank you.

Contents

PART

I

Why Does It Hurt?

CHAPTER

Understanding Back and Neck Pain

You wake up one morning and try to get out of bed, but a sharp, knifelike pain in your back makes you freeze. The warmth of the shower eases the pain a little, but periodically throughout the day you feel a dull ache. You begin to worry that you are getting old, that you have a serious condition that might need surgery, that this is the beginning of the end. You are not alone.

Spinal discomfort and pain are part of the human experience. We health care professionals, experts in back and neck pain, even experience it, too. Estimates are that 95 percent of the population will have at least one serious episode of spinal pain in their lives, and 84 percent will suffer multiple episodes. Of those, 33 percent will suffer from chronic pain, and 7 percent will be substantially limited in their ability to work.

Spinal pain is the second most common reason for a medical office visit and the most common reason for emergency room consultations in the United States, totaling 6 million visits per year. Spinal pain costs an estimated $110 billion per year, and another $40 billion is accrued in business expenses.

The incidence of spinal pain and location varies by occupation and gender. The low back area constitutes 70 percent of all cases, the neck 22 percent, and the midtorso 8 percent. Men are twice as likely as women to have repeated attacks, and they occur in 50 percent of those who do hard labor. Women in the white-collar workforce (secretaries, lawyers, and teachers, for example) more often have neck and shoulder blade pain. An estimated 50 percent of them have other difficulties as well, such as chronic headaches, carpal tunnel syndrome, and thoracic outlet syndrome. A spine specialist and a neurological assessment are needed in these cases. Otherwise, a non-neck problem may be mistakenly diagnosed. The number of people with spinal pain at any one time is about 60 million. An estimated 40 million suffer from chronic spinal pain.

BACK AND NECK ANATOMY

The spine is like a row of houses. Each house is a vertebra. There are 7 cervical (neck), 12 thoracic, 5 lumbar, 5 sacral, and 4 coccyx vertebrae (figure 1.1).

Feel the bones at the back of your neck and lower back. These bones, the spinous process, are like the steeples of houses. The spinous process comes off the roof of the spine, the lamina. A laminectomy is an operation in which the lamina is removed. The spine is not solid bone. It is mobile. Ligaments are present between the laminas at each level. The walls of each house are made of pillars, the pedicles.

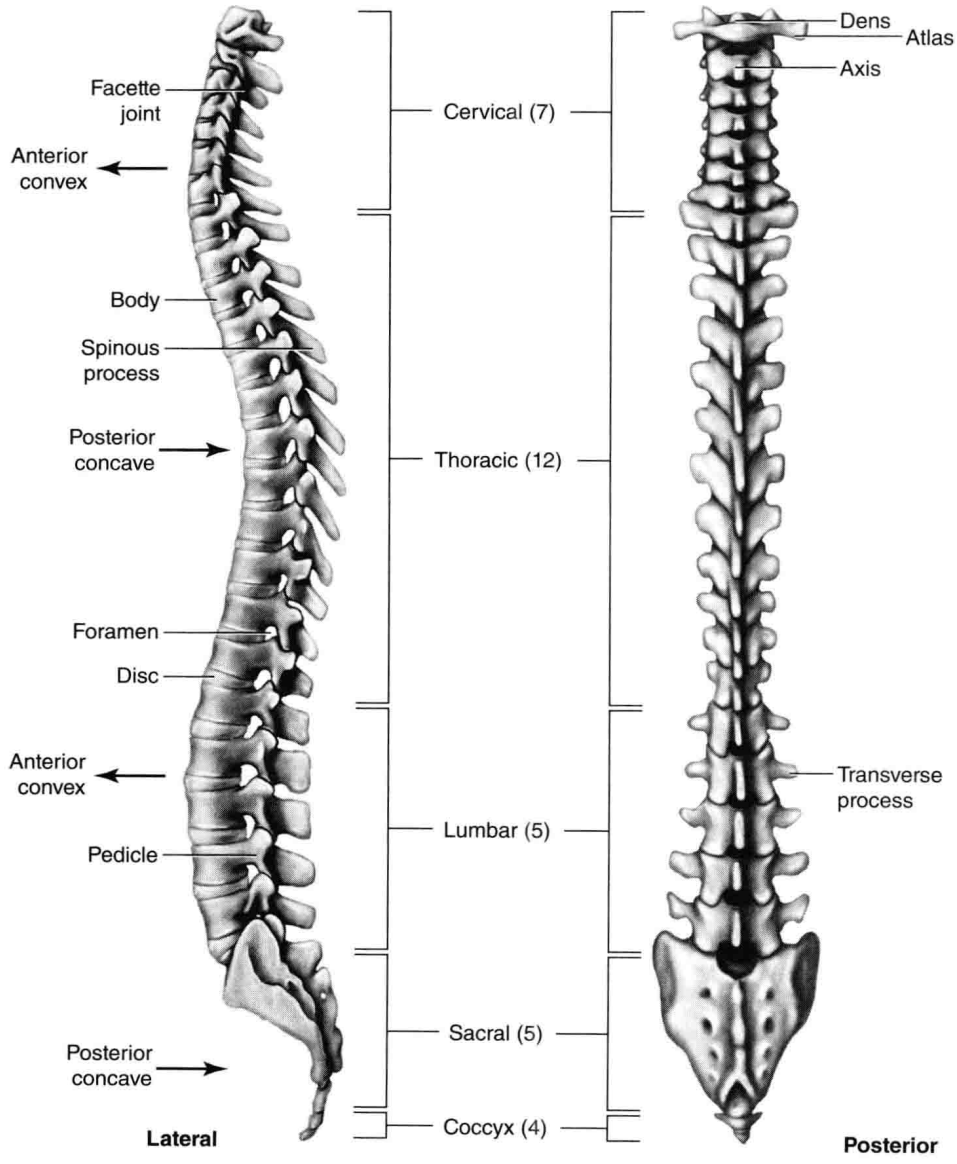

Figure 1.1 The spinal column.

The foramen is like the window of a house. The nerve exits the spinal cord through the foramen to go to the arms or legs. A foramenotomy is a surgery on the window to relieve nerve pain. The facette joints attach one vertebra to the next. Each vertebra is numbered: C1 to C7 in the neck and L1 to L5 in the lumbar region. Joints, intervertebral discs, and ligaments are located between the vertebrae. Each vertebra has some mobility because of the facette joints and ligaments. The pedicles attach to the vertebral bodies, which attach to the intervertebral discs. An intervertebral disc is a multilayered ligament that looks like a woven basket. It is laminated with multiple layers like the belts on a truck tire. The disc attaches to the vertebra above and below and allows motion between the vertebrae. Two facette joints behind the intervertebral disc make up a joint. For example, L4–L5 has a disc, two facette joints, and its own nerves. If it is injured, it hurts. The joint will swell and become inflamed like any other joint. The spinal canal runs through the vertebra. The spinal cord passes the neck, ending as the cauda equina in the low back. Ligaments under the roof and floor of the vertebra allow movement and provide structural strength and protection of the spine.

If the intervertebral disc develops a tear between its layers and its dense liquid center, or nucleous pulposa, bulges out, a disc herniation has occurred. A fragment of the disc that extrudes into the spinal canal in the neck can be extremely dangerous and may cause paralysis. A combination of the disc bulge, ligament buckling, and joint arthritis can seriously narrow the spinal canal, the living space for the spinal cord and cauda equina. The result may be a slow or sudden loss of strength, bladder control, and sensation. This condition is called spinal stenosis, a narrowing of the spinal canal.

The nerves run through the body, starting at the brain and extending all the way down to the bottom of the toes. The nerves help the doctor pinpoint the level of the spine at which the problem occurs, identify the nerve involved, and determine the specific problem, based on patient history and the physical examination.

MOVEMENTS OF THE SPINE

The spine can flex, extend, bend laterally, and twist. It is a wonderful feat of engineering. These movements change the relations of the spine anatomy. Anyone with back or neck pain knows that certain movements provoke or worsen the pain. These biomechanical functions—flexing, extending, lateral bending, and twisting—are used during the physical examination to diagnose the cause of pain. When you bend forward (flexion), the spinal canal and foramen open. When you arch your neck or back backward (extension), the spinal canal and foramen close. Patients have various symptom complexes, symptoms based on spinal motions, that take these biomechanical factors into account.

WHY DOES IT HURT?

The transmission of pain involves the exchange of chemicals within three major components of the nervous system: the peripheral nerves, spinal cord, and brain.

Origin of Anatomical Terms

Do not be intimidated by the medical anatomical terminology in this book, words such as *cauda equina, sciatica, stenosis, cerebrum, cerebellum,* and *medulla oblongata*. These terms were coined by the early fathers of anatomy. What were these great minds thinking when they came up with these tongue-twisting multisyllabic terms?

Consider the brain. The brain consists of three parts: a large part; a small, delicate, and intricate part just under the large part; and a center like a middle stalk going through the brain. The cover of the large part is yellowish, shiny, and gray, much like a candle. *Candle* in Italian is *cere*, meaning "wax." *Brum* means "big," so *cerebrum* means "big wax." The smaller delicate part, shiny and bright, is the cerebellum, from *cere* for candle and *bellum*, which means "beautiful," so cerebellum means "beautiful wax." The long middle part is the *medulla oblongata* from the Latin meaning "the long middle thing." The terms aren't so intimidating in this context.

What about the term *cauda equina*? *Cauda* means "tail," *equina* means "horse," so *cauda equina* means a "horse's tail." At the end of the spinal cord is the lumbar sacral spine. Because it gives off the nerves that become the sciatic nerve, it looks like a horse's tail.

The word *sciatic* or *sciatica* originates from the Italian word for skiing, *sciare*, which means "to cascade." The nerve cascades down from the horse's tail like a ski slope. Medical terminology is simple if you understand the language, which is Latin in this case. Pain, however, is a universal language ("Ouch!"). Each anatomical part has a particular symptom or pain, its language.

At various stages, these three components trigger, transmit, and receive electrical impulses that we perceive as unpleasant. The three types of pain-provoking stimuli are chemical (swelling), temperature (hot or cold), and direct mechanical pressure. Pain-transmitting nerve fibers have an extremely small diameter. They originate from almost every structure in the body, eventually joining with the spinal cord as it travels up to the brain.

The pain impulse instantaneously enters the thalamus, the brain's switching and sorting center. From here, the information immediately passes to three specialized areas of the brain. From the thalamus, pain impulses move to the somatosensory cortex. This area allows you to interpret physically where the discomfort comes from—your toe, lower back, or deep in your chest. This interpretation of location is important. Generally, we give more significance to symptoms that are perceived to be deeper than to those that seem more superficial. Identifying the area of discomfort is especially important when you describe your pain to your doctor or therapist. As you will learn in chapter 2, each pain-producing structure has a voice. By giving an accurate history and description of your pain, you help your doctor or therapist know which structure is talking to you.

The cerebral cortex, the active thinking part of your brain, helps decipher the urgency or severity of your symptoms and directs you to a course of action. Impulses pass to the frontal cortex as well. This area in your brain allows you to give meaning

to the experience, as in "This is no good," "This really hurts," "This will go away soon," or "This needs to be addressed." This response stimulates the decision-making process so that you can decide whether to seek care. Do you miss work, skip the game, go to the hospital, or simply carry on cautiously? This decision will vary from person to person. You may already have seen your health care provider for a similar discomfort in the past and learned to be patient, confident that it will pass with a little self-help. Or you may be experiencing neck discomfort for the first time and, based on other influences such as your uncle's bad experience or a neighbor's well-intentioned advice, decide to make an urgent trip to the emergency room. The significance that we place on the spinal pain that we feel in large part dictates how we respond to it. Throughout the book, we'll provide some guidelines on what is urgent and what is not.

The pain impulse also travels to the limbic area. Here the brain assigns an emotional significance such as suffering, frustration, anxiety, or fear to the impulse. Because emotional significance is part of the pain-perception process, similar types of stimuli cause different reactions in different people. For example, the anxiety felt by someone who has never been to a dentist when he hears the drill or sees the cleaning probe may accentuate his sensation of discomfort. Or the stress and fear of losing a job or athletic ability may complicate the healing process of an otherwise manageable spine injury. Conversely, some people, such as athletes, use the emotional significance of winning to block out and endure more discomfort.

Within the brain, chemicals moderate the incoming pain signals, either dulling or amplifying the experience. These chemicals are released by the cells in the brain and are influenced by the self-help recommendations provided in later chapters. Following the guidelines that we provide will help you increase the release of pain-dulling chemicals and reduce the presence of pain-amplifying chemicals.

Emotions, fears, anxieties, and apprehensions can either open or close the valve controlling these chemicals, thereby assisting or complicating the perception of pain. Depending on a variety of factors, especially their experiences, some people have a better override mechanism than others do. This trait helps them heal and recover more quickly.

Inflammation also influences your perception of pain. In part, chronic pain arises from inflammatory processes that sensitize the nervous system, causing the nerve fibers that send pain impulses to fire more easily, frequently, or intensely. This process can occur within all centers of the pain pathway and may explain why small events can have a significant effect on those already experiencing chronic spinal pain. Modulating inflammation through exercise, diet, sleep, and relaxation, as discussed in chapter 5, is key in the overall management of chronic spinal pain.

EVALUATING YOUR PAIN

Patient attitudes have changed. In the past, patients simply said, "Fix it, doc." Now they ask, "What is my problem, and what can I do about it?" This book is about empowering you to understand why you hurt and what you can do. ***End Back & Neck Pain*** will be your companion. Let's begin by identifying what your spinal pain is telling you. Take the spine pain test.