OVERCOMING BACK *and* NECK PAIN

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All emphasis in Scripture quotations has been added by the author.

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Chapter 2

The Thing About Pain…

Why Do I Have It, and What Will Make It Go Away?

God created us with the ability to feel pain. Therefore, since God creates only good things, pain must somehow be good. (Sounds odd to say that, doesn't it?)

It's a Good Thing…

What can possibly be good about the pain you are experiencing? Well, primarily, it makes you aware that something has gone amiss in your body. Sort of like the warning lights on the dashboard of your car. A steady glowing light indicates trouble is brewing. This sends the driver a message to have the problem checked out sooner rather than later. Likewise, our bodies get our attention by creating pain. This pain (or even tingling or numbness) lets us know something is brewing. We usually respond by changing positions, stopping our present activity, or popping some over-the-counter medications.

Many car manufacturers go one step further in their warning system. When a system in the car is about to "blow," the glowing light begins to flash to ensure we turn our attention to the problem immediately. Our body's pain system responds in much the same way. When our pain becomes more intense or frequent, or even constant,

our body is saying, *I'm about to blow! You need to get help ASAP!* (This is the stage at which most of my patients call their doctor, begin prescription medications, and are referred to my office for treatment.)

People suffering from leprosy or diabetic neuropathy (nerve damage that results from long-term or uncontrolled diabetes) would be the first to tell you that pain perception is a gift. Both of these diseases rob them of their ability to feel pain. People lacking the ability to sense pain are unable to feel a pebble in their shoe or their finger being burnt on the stove. This results in damage to their body they're unable to stop because they're unaware it is even occurring. Pain's "gift" lies in the fact that it protects you against harm, limits movements that may produce further harm to your body, and eventually causes you to seek medical attention.

It's a Bad Thing…

Chronic pain changes your life. By chronic, I mean pain that has been present for longer than four to six weeks and is either staying at the same intensity or getting progressively worse over time. It may have started in a small, localized area and is now taking up more real estate on your body.

Whatever the case, the results of chronic pain reach far beyond the pain itself. During my 19 years of practice, I have witnessed many manifestations associated with chronic pain. Depression is a major one. Ellen arrived in my office one morning for her physical-therapy evaluation. Her blonde hair hung limp on her head, covering much of her face as she spoke to me. Her eyes had dark circles under them, and she wore no makeup to hide them. She was clothed in sloppy sweatpants and a wrinkled T-shirt. Her voice was flat as she answered my questions. I never saw a smile flicker across her face that day. At times she fought back tears. It was obvious the cloud of depression hung low over her life.

Other common signs of chronic pain, which you may be experiencing, are loss of sleep, irritability, loss of appetite, or its opposite, excessive eating. Emotional stress typically accompanies the chronically

ill for many reasons—beyond that of being in constant pain. As I noted in the previous chapter, many sufferers are out of work, sidelined from their calling or avocation, unable to perform their household or outside tasks, lift their children, be sexually intimate with their spouse, or participate in recreational sports or any other fulfilling activity. Depression takes away your outlook and replaces it with "in-look."

Keeping the Faith

Many people who are Christians really struggle when they experience depression. They start to question their faith. *Can I really be a Christian and feel so dark in my spirit?* You can be certain that King David felt dark in his spirit as he wrote these words:

> Lord, hear my prayer! Listen to my plea!
> Don't turn away from me in this my time of distress…
> for my days disappear like smoke.
> My health is broken, and my heart is sick;
> it is trampled like grass and is withered.
> My food is tasteless, and I have lost my appetite.
> I am reduced to skin and bones
> because of all my groaning and despair.
> —Psalm 102:1-5

Yet Scripture proclaims David to be a man after God's own heart. You who suffer with pain have not lost your faith, only your health. And I pray that you will soon be able to restore yourself to full health with the help of this book.

Your Pain Is Unique

Pain perception is unique to each individual. While the human body has been created with the same receptors (receivers) and transmitters (senders) of pain, each of us feels pain differently. Studies have revealed some general characterizations: 1) Women tend to be able to endure more pain than men, 2) individuals of Latin or Mediterranean

origin have lower thresholds of pain than those of Germanic or Scandinavian decent, and 3) emotional stress increases the intensity of a person's perceived pain.[1]

That said, in my professional experience, pain perception or tolerance is truly unique to the individual. Some people fear pain, while others look at it as an obstacle to be overcome. The one thing that is common with every patient I have ever treated is that each one believes they personally have a "high pain tolerance." Each time someone says this to me I always smile—on the inside. (You may be chuckling to yourself now, having either said or thought this yourself.) I believe there are two reasons for such a proclamation. First, my patients are trying to say to me, "I'm not wasting your time. I need to be here. I am really in pain!" Secondly, they need to feel as if mild to moderate pain can't boss them around. Only severe, intolerable pain gets their attention and brings them into treatment.

It doesn't really matter whether you truly have a high pain tolerance or "just" a low-to-moderate threshold of tolerance. The fact is, you have pain. And it is affecting your ability to live and move the way you'd like to.

The Spine's Design

Can I give you a quick anatomy lesson? No need for yawning here—I just want to give you a basic understanding of how wonderfully God has created your neck and back. You'll find this information forms a basis on which you can build your knowledge of the changes you need to make to overcome your pain.

The spine. Your *spine* is made up of 33 bones that are stacked upon each other much like a block tower.

- The top 7 bones (or vertebrae) make up your neck, or *cervical spine.* The cervical spine is designed for maximum motion, allowing your head to turn and your eyes to see what is going on around you.
- The next 12 vertebrae form your *thoracic spine.* Some might call this region the mid-back. In contrast to the cervical spine, the thoracic spine is built for rigidity. This rigidity

comes in part from the ribs that are attached to each of these vertebral bones—two at each segment, one on the right and one on the left. (The primary function of our rib cage is to form a "cage" of protection around our vital organs.)

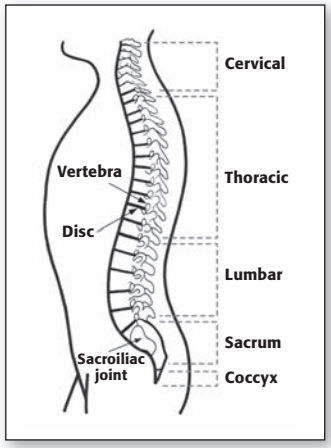

figure 2.1

- The next 5 vertebrae are those of your low back, or *lumbar spine.* These bones are large in comparison to the cervical and thoracic vertebrae because they are built for weight-bearing. They have to hold up your entire HAT—your **H**ead, **A**rms and **T**runk. They also allow for ample forward bending *(flexion)* and backward bending *(extension)* of your trunk.
- The spine ends with two final bony structures. The first is the *sacrum,* which is made up of five fused sacral bones. The junctions between the sacrum and the right and left *iliac* bones (which most people would refer to as their hip bones) make up your *sacroiliac joints.* These are key joints in the low-back region and are often a cause of low-back problems. Last in line is the tailbone, or *coccyx,* which is made from three fused bones.

The spinal cord and spinal nerves. Passing through the stacked vertebral bones in a bony canal (called the *spinal foramen**), is your *spinal cord.* The spinal cord is a highway of nerves beginning at the base of your brain and extending into the lumbar, or low-back, region. At every level, between each set of vertebral bones, *spinal nerves* branch off the spinal

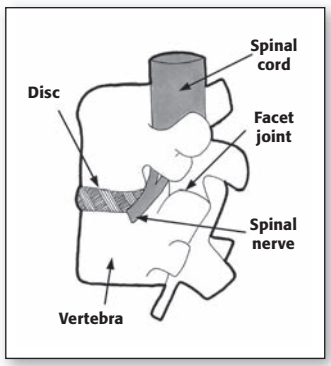

figure 2.2

* Pronounced *fuh-RAY-men.* The plural is *foramina* (fuh-RA-min-uh).

cord and exit the spine through bony openings called the *intervertebral foramina.* Sort of like the exit ramps off the main highway. The nerves then run their determined course and end at their final destination, maybe the skin on your left thigh or the muscles of your big toe.

Facet joints. Each vertebra (from the second cervical bone down to the sacrum) is connected to the vertebrae above and below it by two *facet joints,* one on the right and one on the left. These joints are movable junctions between the two vertebral bones, just like your knee joint is the movable junction between your thigh bone and your lower leg bones. Facet joints have three functions. They guide movement, they limit movement, and they act as weight-bearing structures.

Ligaments. The facet joints are reinforced by joint capsules and by *ligaments.* Ligaments are extremely important in the spine, as they not only protect the facet joints, but also act as a "retaining wall" for the discs in the spine. (What are discs, you ask? Oh, I just love questions.)

Discs are like small radial tires stacked up between each bone in your spine. Instead of being filled with air, they are filled with a gelatin-like material whose texture a surgeon once described to me as like "crabmeat" in consistency. *Discs* function to absorb shock, distribute weight-bearing forces, and aid in the motion of the spine. The height of the discs also preserves the opening diameter of the intervertebral foramina (where the spinal nerves exit the spine).

Muscles. Last, but certainly not least, are the *muscles* of the spine. They are the first responders. They initiate and control movement, protect the facet and sacroiliac joints against excessive forces, give the spine stability, and protect the facet joint capsules from injury.

When the Design Is Damaged

Many of you have been through the medical mill with your pain. You've had evaluations by physicians (both general and specialists). You've had X-rays, MRIs, CT scans, and the like. Ultimately you have been given a diagnosis. However, perhaps it hasn't been clear to you exactly what parts of your neck and back are affected, or what the nature of your pain is.

From the first part of this chapter, you understand more about the design of your back and neck. If you also know something more about the damage you've suffered and what the cause of your pain is, it can help you make good decisions about how to proceed with the self-treatment I describe in the following chapters.

Defining the Diagnosis

It's good to understand your body's state of affairs. Following are a number of the most typical conditions that underlie neck and back pain, grouped by the type of body part they most affect.

Joints and bones:

- *Degenerative joint disease (DJD); arthritis:* an inflammation of a joint with breakdown of the surface cartilage, and in severe cases the bone underlying the cartilage.
- *Fractures:* stress fractures (commonly due to osteoporosis); or those traumatic in nature, crack in the bone itself.
- *Spondylolisthesis:* a fracture in a vertebra that separates the front half from the back half of the bone and can lead to a forward slip of the front of the vertebra relative to the back.
- *Osteophytes:* bony growths, much like the stalactites in a cave, which can crowd the spinal nerves, causing a "pinched nerve." Often called *bone spurs.*

Nerves:

- *Radiculopathy:* Pressure on a spinal nerve, usually caused by disc bulging or herniation or a narrowing of the lateral bony exit canal (intervertebral foramen) through which the spinal nerve passes.
- *Stenosis:* Narrowing. Can be *central* (narrowing of the spinal canal in which the spinal cord runs) or *lateral* (narrowing of a lateral canal in which a spinal nerve runs).

Ligaments:

- *Sprains:* small fiber damage due to overstretching.

- *Tears:* full rupture due to repeated, prolonged, or traumatic forces.

Discs:

- *Degenerative disc disease (DDD), bulge, or herniation:* Just like an overinflated tire, discs wear out from the inside out. You will see a bulge in the outside wall before a full tear occurs. This bulging, or for that matter a full tear where the inside "gelatin" has escaped, can press against either the spinal cord or the spinal nerves as they exit from the spinal cord.

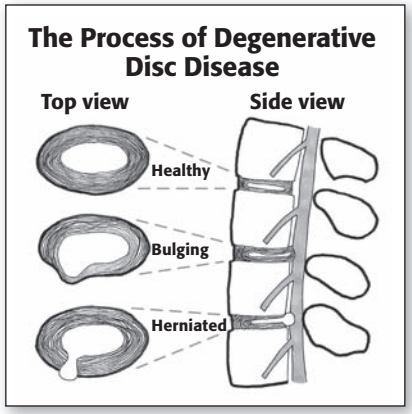

figure 2.3

Muscles:

- *Sprains:* minor to moderate muscle fiber damage due to overloading.
- *Spasms:* a constant state of contraction in response to pain sensation, which in effect shortens the muscle.

Mechanical Pain

We are made aware of pain by way of tiny nerve endings which are present in all the structures of the musculoskeletal system (muscles, ligaments, bones, discs). These nerve endings send "pain telegrams" to the brain in response to either mechanical (physical) messages or chemical (inflammatory) messages. *Mechanical pain* can often be distinguished from chemical pain by its behavior or nature. It is typically intermittent in nature. The pain will come and go throughout the day or week. Typically also, it has aggravating and easing factors—meaning the pain experienced is usually worsened in some positions and lessened or alleviated in others. For instance, my patient Carlos, who suffers with mechanical low-back pain, finds that his back becomes

increasingly stiff during his long drive to work. Once he gets there and begins to walk around (he is a floor manager in a department store), his back begins to loosen up and he is much more comfortable.

According to Robin McKenzie, a New Zealand physical therapist and founder of The McKenzie Institute for Mechanical Diagnosis and Therapy, all mechanical pain can be divided into three categories.[2]

1. Postural syndrome. A patient experiences pain when normal, healthy body tissues (muscles, ligaments, discs) are held at end range (fully lengthened position) for a prolonged time. An example of this would be a teenager who is slumped at the computer for an hour while instant-messaging his buddies. His muscles, ligaments, and discs are healthy. Even so, his body doesn't like its healthy structures to be pushed (or slumped) to their limit and held there over time. The slumped position will eventually cause this teenager to experience pain. Pain, in his case, is easily relieved—simply by changing positions.

In order to feel this for yourself, take hold of your index finger. Now slowly bend it backward. You will feel a stretching sensation once you've reached the end of your available motion. If you were to continue to hold your finger in this position, you would eventually feel the pain caused by this stress. This is how postural-syndrome pain occurs.

2. Dysfunction syndrome. According to Robin McKenzie's definition, *dysfunction* indicates that some structure in the body (muscle, joint capsule, ligament, even scar tissue) is shortened in length, tight, and therefore lacking flexibility. When a person stretches or slumps this tight or shortened structure to its *dysfunctional limit,* pain is registered in the brain immediately.

Now, in order to understand the dysfunction syndrome more clearly, let's repeat the finger scenario we just used, this time with an added twist. Pretend you have just had surgery on your index finger. You are sporting a new, shiny, tight scar on the palm side of that finger. First of all, you would not be able to bend that finger as far back. Second, your pain, rather than occurring after some time had passed, would instead be felt immediately. The pain in the scarred

finger is caused by attempting to push the tight scar beyond its shortened limit. So it is with the dysfunction syndrome. Something is tight. It isn't free to move as it did when it was healthy and flexible. And now you are forcing it to do what it can't—and it instantly rebels, crying out in pain!

3. Derangement syndrome. This is the most serious syndrome and the most difficult to recover from. It will often require intervention from a medical professional. According to the McKenzie classifications, the term *derangement* describes a disruption (tear) or displacement (migration), or both, of part of a disc. Derangements often occur as a result of long-term improper posture, although they can also result from trauma, such as falls, heavy lifting, car accidents, and so on.

Disc derangements that occur over time begin the road to destruction by becoming deformed, then finally becoming damaged. *Deformation* occurs when a position is held over time and the tissues are stretched beyond their normal length. Maintaining this stress can lead to permanent changes. This is what happens, for instance, if you hold a metal Slinky by one end and let the other end hang for an hour or so. When you try to close it up again it is unable to resume its previous shape. Its physical structure has been altered.

Finally, *damage* occurs when there is structural tearing, either on a small or large scale. Damaged structures tend to have a longer recovery time than deformed ones. A damaged structure may have the capacity to heal on its own, or it may require the professional expertise of a skilled physical therapist or surgeon. (And unfortunately, some mechanical damage is so severe it may never be able to be repaired.)

Chemical Pain

Chemical pain, in contrast to mechanical pain, is usually constant in nature. Patients with chemically transmitted "pain telegrams" do not report having positions of ease or comfort. Regardless how they position themselves, there is no escaping the pain stimulus. The pain may worsen at night, and it may even be associated with a fever. If a

disease is present, the pain may also be accompanied by unexplained weight loss. Swelling or redness over an area is one sign that a chemical-inflammatory process is under way. While not commonly seen in the areas of the neck and back, it is more likely to be noted in the joints of the arms and legs.

Chemical pain can be associated with both disease processes and inflammation caused by injury. Some common disease processes that create chemical pain are rheumatoid arthritis, lupus, Lyme disease, and cancer. When you consider treatment for these and other disease-based chemical pain sources, prescription medications are your best defense. However, that is not to say that mechanical self-treatment holds no value for people suffering from such diseases. On the contrary, the sections of this book dealing with posture, body mechanics, and ergonomics may offer quite a bit of relief and comfort to someone who is dealing with chemically based pain.

The chemical pain of *inflammation* often accompanies mechanical pain caused by traumatic injury. During the early stages of its response to an injury, the body sends inflammatory cells to the injury site. They are part of the body's healing process. These inflammatory cells also send "pain telegrams" to the brain.

This early chemical process, however, is usually short-lived (less than one month). As repair and healing take place, the chemical telegrams decrease. In the later stages of recovery the injured patient is left primarily with mechanical pain. When inflammation due to injury is present, physical-therapy modalities such as ice, heat, electric stimulation, and ultrasound can be very beneficial. They have been proven to decrease the inflammation and quicken the healing of the affected structures.

Will This Book Help *My* Pain?

If you are suffering from physical pain right now, how do you know if these instructions and exercises will help *you?* The answer to that question will depend greatly on the source of your pain complaints. People who have purely mechanical pain can be greatly

improved or even fully relieved by applying the basic information discussed in this book. Sometimes, following evaluation I have sent such a patient home with a simple program consisting of some basic posture and flexibility exercises. Within a week their pain is gone, and I have barely even begun to treat them.

If your pain source was initially mechanical and has now progressed to a disease state (chemical in nature), there is still a good chance these exercises will have potential for partial, possibly even full, healing. Herniated discs are an example of mechanical pain that has progressed to a disease state (the outer disc is torn and the disc's gelatinous insides have ruptured). You yourself may have received this grim news following an MRI: "You have a herniated disc." Your doctor explains that this is a permanent condition. You are told you will have to learn to live with the pain and subsequent disability. "Here is some medication to relieve your symptoms," he adds. Your physician may not feel you are a candidate for surgery, or you simply may not want to pursue that option. Don't let this diagnosis be a life-sentence. *There is hope for you.*

Vicky was a recent patient of mine who, following her MRI, was diagnosed with three herniated discs in her neck. In addition, her X-rays showed she had arthritis. She had suffered daily for nine years with neck pain and headaches. Because the source of her pain complaints was diseased discs and deteriorated bones, her doctor told her she would always be in pain. When she asked if physical therapy might help, he told her, "Well, you can try it…" with a less-than-enthusiastic tone in his voice. I am happy to share that in just three months, Vicky was pain free! It has been nearly three years since that point, and she continues to follow the basic physical-health guidelines presented in this book. She hasn't had a day of neck pain since she began to do this.

I recount this experience in order to encourage you. Don't let someone's grim prediction dictate your future. Ignorance is not bliss. Educate yourself. I have treated countless other patients with the diagnosis of herniated discs in their neck or back. I have also seen them

fully recover their active lifestyles. All of them owe this, in large part, to following the education and instruction contained in this book.

Before You Read Any Further

In some situations, self-treatment can cause more harm than good. As a physical therapist I am very aware when to use extreme caution—or when to not treat a patient at all with physical exercises. Following are some of the factors I urge you to consider. They should disqualify you from following the steps in this book until you've been cleared by your physician:

- constant pain below your elbow or knee
- this is your first time experiencing pain, with no improvement after 10 to 14 days
- known disease: cancer, rheumatoid arthritis, lupus, unhealed fracture
- headache of new onset that is constant or worsening, and not responding to over-the-counter medications
- general malaise (unwell feeling), fever, pain that increases significantly during the nighttime hours, unexplained weight loss, or a combination of these

Ask Yourself

- Do you understand the basic workings of your spine?
- Does your diagnosis make sense to you now?
- What kind of pain do you think you have—mechanical or chemical?
- If mechanical, do you think your symptoms point to postural, dysfunction, or derangement problems?

Action Points

- If you believe you have chemical-based pain, make an appointment with your doctor.
- Become a student of your pain. Get to know its "personality."
- As you work through the different sections of this book, pay close attention to how applying their instructions affects your symptoms.