

PREFACE

This book addresses a complex problem and one of the major causes of permanent disability: common (nonspecific) low back pain. After years of effort by the medical profession, common low back pain—which is not caused by disease or major trauma—remains a medical crisis that continues to spiral out of control because of high costs and low success rates.

Back pain was a 20th-century medical disaster and the legacy reverberates into the new millennium....We can only diagnose definite pathology in about 15% of patients with back pain....Most back pain is benign and non-specific and all the serious problems put together are probably less than 5%.—Dr. Gordon Waddell

Voluminous literature on the problems of the low back has been written in recent decades with impairment primarily related to the disc of the spine and thus all studies and treatment protocols have been so directed....However, the results have been disappointing.—Dr. Rene Cailliet

Conservative care commends itself, when properly carried out, as the only kind of treatment that will be needed for 99% of your back pain patients.—Dr. Arthur White

Common (nonspecific) low back pain is not a disease because exact origins are unknown and the signs and symptoms are inconsistent. Diseases are characterized by a known pathogenesis and the signs and symptoms are consistent. When viewed objectively, common low back pain is a symptom, not a disease, and the symptom (back pain) is usually caused by soft-tissue impairments or mechanical dysfunctions that affect lumbopelvic rhythm.

HEMME Approach is a systems-theory method for simplifying and solving complex problems, such as common low back pain, by using logic and feedback from patients. The recommendations offered in this book are based on clinical experience, evidence-based research, and common sense.

This book offers a cost-effective approach for treating common low back pain. What makes this book unique is the way knowledge from many different health care fields has been pulled together to create an amazingly simple treatment protocol for millions of people who suffer repeatedly from nonspecific (common) low back pain and help them live a normal life.

For people with nonspecific LBP, stooping over may not be painful, but trying to stand erect after being stooped over may cause severe pain. You cannot stand erect until the pelvis tilts forward into a neutral position— anterior superior iliac spines and posterior superior iliac spines on the same horizontal line—and the pelvis cannot tilt forward if abnormal tension from the gluteus maximus prevents anterior tilt. Besides the pain caused by stretching a tight gluteus maximus, there may also be pain from stretching a tight psoas or from compressing the facet joints or the lumbosacral joint.

Even though understanding lumbopelvic rhythm is critical when you try to predict, treat, or prevent nonspecific low back pain, the real challenge is trying to understand the factors that disrupt lumbopelvic rhythm.

Muscle imbalances disrupt lumbopelvic rhythm more than any other cause, and the muscles that are usually involved are the psoas (iliopsoas), hamstrings, gluteus maximus, and multifidus. Other muscles that may be involved are the gluteus medius, rectus femoris, soleus, and piriformis.

The psoas can be difficult to treat unless you realize that it can flex or extend the lumbar spine, depending on the angle of the trunk. This property is called *inversion of function*. The psoas may increase lumbar kyphosis when the trunk is flexed or increase lumbar lordosis when the trunk is erect.

Although the hamstrings and gluteus maximus are often treated as a single unit because they are both hip extensors, if the lumbar spine cannot achieve neutral lordosis because the pelvis will not tilt forward into a neutral position, the hamstrings may be stretched and weak and the gluteus maximus may be short, tight, and weak. If you stretch both hip extensors, you may abnormally lengthen the hamstrings and make them even weaker.

If the multifidus is overstressed while the lumbar spine is trying to achieve neutral lordosis, it often becomes weak because of hypertonicity, pain, or disuse atrophy. Without specific intervention, such as manipulation or exercise, the multifidus seldom improves and it may get worse. A muscle that has far less effect on LBP than the multifidus is the rectus abdominis, and this muscle usually gets much more attention than the multifidus.

The four goals when treating nonspecific LBP are (1) reduce pain, (2) promote healing, (3) restore function, and (4) prevent LBP. Even if more people understood how to treat nonspecific LBP, which is more of a lumbopelvic problem than a low-back problem, the health care system in the US makes effective treatment difficult. Most people need a treatment plan that includes education, medication, modalities, manipulation, and exercise. If insurance barriers prevent people from getting the treatments they need, LBP will continue to be an escalating problem and a medical disaster.

The central concept that makes this book unique is the strong belief that correcting muscle imbalances is a safer and more effective way to treat nonspecific LBP than trying to correct unproven or insignificant discogenic abnormalities. If the discogenic approach was more effective, nonspecific LBP would not continue to be an escalating problem that reduces the quality of life for most patients because of pain, disability, and loss of income.

Even though muscle imbalances can be caused by many factors, such as external trauma, poor use of body mechanics when lifting, or repetitive strain, the most common cause appears to be a decrease in neuromuscular efficiency that starts at age 30. This corresponds with the peak range for nonspecific LBP, which is 30 to 50 years of age.

Decreases in neuromuscular efficiency can be caused by (1) less contractile strength in muscle fibers, (2) inappropriate recruitment patterns, (3) weak facilitation, (4) slow reciprocal inhibition, (5) inefficient metabolic reactions that increase the risk of fatigue or cramps, (6) a loss of flexibility that increases the risk of microtrauma and hypertonicity, or (7) a decrease in general fitness that results from inactivity or improper diet.

After they occur, decreases in neuromuscular efficiency set the stage for internal microtrauma or macrotrauma that leads to inflammation, reflex spasm, and a loss of mobility. What complicates the problem when dealing with lumbopelvic disorders is that spinal movement depends on a complex interaction between the lumbar spine and the pelvis called *lumbopelvic rhythm*. If this rhythm is disrupted because pain inhibition or reflex spasm prevents the necessary movements that are part of the rhythm, the lumbar spine and the pelvis will not interact properly and the likely outcome will be additional inflammation, reflex spasm, and loss of mobility, which can trigger a cycle of trauma, inflammation, reflex spasm, and loss of mobility.

Were it not for the mystique surrounding the intervertebral disk, more physicians would recognize and acknowledge the obvious parallels between scapulohumeral rhythm and lumbopelvic rhythm. After you recognize the similarities, it requires very little imagination to realize that the treatment options for nonspecific LBP might be similar to the treatment options for nonspecific neck and shoulder problems.

Another similarity between nonspecific neck and shoulder pain and nonspecific LBP is the body's ability to perpetuate pain and disability long after the events that interfered with scapulohumeral rhythm or lumbopelvic rhythm have been resolved. In both cases, pain and disability will probably continue unless specific treatments are used to correct muscle imbalances that disrupt the rhythmic interactions between interrelated body parts.

A working theory is a combination of research, observation, logic, common sense, and speculation, which is sometimes the best you can do when there is not enough high-quality research to justify an evidence-based conclusion. The pain and disability associated with nonspecific LBP and the scarcity of effective treatments justify the need for a working theory that explains the mechanisms that perpetuate nonspecific LBP and proposes a treatment protocol based on an understanding of these mechanisms.

Regardless of what triggers an episode of nonspecific LBP, most episodes are characterized by one or more lumbopelvic muscle imbalances that cause a defect in lumbopelvic rhythm. The most common defect occurs when a person tries to stand erect after sitting or being stooped over and the pelvis cannot change from a posterior-tilt position to a neutral position. For the pelvis to achieve a neutral position, there must be enough anterior pelvic tilt for the lumbar spine to regain neutral (normal) lordosis.

The two main factors that usually prevent the pelvis from reaching a neutral position are abnormal tension from the psoas and gluteus maximus. The abnormal tension from these muscles increases lumbar compression, which affects the facet (zygapophyseal) joints and the lumbosacral joint, and tension from the psoas may increase anterior shear.

It is interesting to note that after people with nonspecific LBP manage to overcome the pain and stand erect after sitting or being stooped over, it is common to see their mobility dramatically improve after they stretch by raising their arms overhead and then walk for several minutes. Apparently the pelvic movement that causes the most pain is somewhere between a posterior position and a neutral position. Possible reasons for this pain are (1) lumbar compression with anterior shear, (2) stretching or compressing hypertonic muscles, (3) tension on muscle attachments, or (4) a downward displacement of the sacrum that stretches sacral ligaments.

If the pain is too great when attempting to stand erect after being stooped over, the person may return to a stooped-over position, which tends to reduce pain in the same way that being in a fetal position reduces pain. If the psoas is abnormally short, tight, and painful, one or both feet may be laterally rotated while a person is stooped over to keep the psoas slack.

If muscle imbalances cause or perpetuate defects in lumbopelvic rhythm that cause or perpetuate LBP, correcting muscle imbalances should be a major part of treatment, which is why a large percentage of this book focuses on locating, correcting, and preventing muscle imbalances.

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