

NO MORE ACHING BACK

by Rick Sullivan

The odds are that if you haven't yet been visited with nagging back pains your time will come. Next to the common cold lower back pain (LBP) is the main reason Americans visit their primary care physician and the third most popular reason for surgery in western society. These spinal problems are the number one cause of disability in the workplace for persons under the age of 45 and are estimated to cost us somewhere between 20 and 50 billion dollars annually. What is particularly sobering about these statistics is the fact that many of these problems are preventable. In addition, the Agency for Health Care Policy and Research (AHCPR) reports that many common treatments such as surgery do not lead to an improved condition. In fact quite often back pain sufferers are more disabled following a surgical procedure than prior to it.

One out of one hundred Americans is chronically disabled by lower back problems and an equal number temporarily out of commission with this condition at any given time. No one is immune to the crippling effects of LBP. An aching back has incapacitated the young as well as the elderly, it does not discriminate between race or sex, and has sidelined the overweight and sedentary as well as athletic superstars like Michael Jordan, Mark Messier, and Don Mattingly. Although it may sound cliché, the best treatment for back problems is prevention.

The origins of lumbar spine problems are quite diverse and soft tissue weakness in the surrounding musculature is often mentioned as a primary risk factor. Likewise, strengthening the lower back musculature has long been recognized as an important component in a rehabilitation and/or prevention program for lower back pain. A strength training program will serve to increase both muscular strength, which refers to the maximum amount of force the particular muscle(s) can generate, and muscular endurance, which pertains to the muscle(s) ability to sustain repeated contractions of a submaximal nature. Each plays an important role in the treatment and prevention of lower back pain. In addition, other physiologic responses to strengthening exercises include

increases in muscle mass, bone mass, and connective tissue thickness all of which can dramatically reduce the likelihood of injury or recurrence of injury.

There are a number of strengthening exercises as well as exercise programs that have the intention of developing spinal muscles. Rather than go through the plethora of variation available to you, let's consider a few points in choosing the best resistance exercises:

1. *Consider the function of the lower spine musculature.* These muscles essentially serve to flex the spine forward (abdominal), extend the spine backward (erector spinae), rotate the lumbar spine (oblique), and stabilize and support an upright posture throughout the day. The exercises you choose should safely be providing resistance opposing the above mentioned motions.
2. *Determine the muscles Range of Motion (R.O.M.).* While there is some variation amongst individuals, normal range of motion is 72 degrees flexion/extension (forward/backward), without any pelvic movement. Normal trunk rotation is 120 degrees (60 degrees from the center to the right and 60 degrees from the center to the left). The importance of working through a full R.O.M. can not be over emphasized. Most LBP symptoms due to weakness are the result of a weakness at full lumbar extension (occasionally at full flexion) therefore if you merely work through the strong portion of your range of motion you will only exacerbate the muscular imbalance.
3. *Stabilize the hips.* In an effort to stimulate the muscles that act upon the spine you must first distinguish between hip movement and spinal movement. You can bend the torso forward or backwards at either the vertebrae of the spine or at the hip joint. If you are moving at the hip the primary muscles involved are the gluteus maximus and the hamstrings rather than the para spinal muscles that we're trying to strengthen.
4. *Perform every exercise under full muscular control.* All exercises must be performed in a slow and controlled fashion. Rapid, ballistic movements against resistance are associated with the development of momentum, which will minimize any

positive training effect. In addition, such rapid movements may create dangerously high impact forces, dramatically increasing the risk of injury.

5. *Work the muscles hard enough to stimulate strength gains.* Any form of resistance training must be progressive if you expect to make any appreciable progress. You need to continually strive to challenge the trunk musculature (safely) through increases in exercise intensity. Intensity increases can be achieved through added resistance and/or repetitions. Every exercise should be a maximum effort, exhausting the muscles in approximately 1-2 minutes.
6. *Stop exercising!* Once you stimulate the muscle (which should only take a single set per exercise) get out of the gym. Go read a book, watch a movie, or anything else that will allow the muscle to rest and recover. Most body parts can be worked 48-72 hours after your previous exercise session. However, current research has shown that when the lower back muscles are isolated and worked hard that optimal results will come from training this muscle group once per week.

Following the above guidelines when choosing your lower back exercises should help you distinguish between those lumbar exercises that are more effective than others when beginning a low back strengthening routine, or modify an exercise(s) you currently use (if necessary). Maintaining, or ideally increasing, the strength of the entire body (especially the lower back) can significantly reduce the risk of injuring the lower back, and will decrease the severity of LBP as well as speed up the healing process in the unlikely event that you do experience LBP. Begin your prevention program today or, as statistics suggest, you'll be involved in a rehab program shortly.

For those of you who are currently experiencing LBP here are a few pain management guidelines from Dr. Richard Deyo of the University of Washington, who heads a 5 year study on back pain treatment:

- *Brief bed rest.* More than 2 days in bed is usually counterproductive.
- *Nonprescription painkillers* can help to reduce inflammation and relax the lumbar

musculature. Physician prescribed muscle relaxants may be helpful in some cases and are normally taken for brief period of time .

- *Begin walking* as soon as possible.
- If you are over weight, *try to lose weight.* A combination of diet and exercise are the most effective means to losing weight.
- Studies have shown benefits from *chiropractic care* for acute low back pain.
- *Don't consent to traction*, which has not been shown to be beneficial for lower back pain.
- If your doctor suggests surgery, *get a second opinion*
- *Don't smoke.* Evidence suggests that it can aggravate back pain (It can also kill you). Once your back pain has subsided (not necessarily waiting for the complete absence of pain), and you have received medical clearance, you need to begin a program of lower back strengthening ASAP.

EVOLVE EXERCISE
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