Back in effect: kin prof sets you straight

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Ever had a sore back? Back injury? I'm sure if you haven't, you probably know someone who has. Backs are a difficult mystery to unravel. How is it that someone can lift heavy items all day and then all of a sudden, when bending down to pick up the TV converter, throw out their back? Stuart McGill, a professor in the Kinesiology department at UW, has been studying this phenomenon for many years. McGill and his team of graduate students have developed four exercises that can be used to rehabilitate an injured back, promote spinal health and/or train for performance. Ultimately, the exercises can help you reduce your risk of back injury.

Before discussing the exercises though, one should look at the history behind them. McGill argues that the common approaches currently used by many therapists to rehabilitate are actually detrimental to an injured back.

"These approaches aim at strengthening the muscles and increasing the range of movement," says McGill. "Instead, the focus in many cases should be on stability rather than mobility."

"The American Medical Association defines the disability of back injury as a loss of range of motion," says McGill. "Thus, to rehabilitate, therapists aim to improve the range of motion. However, the range of motion exercises actually put increased load on the spine and can cause further injury." In this case, science conflicts with politics. McGill cites studies that have shown that strength has no relation to back injury. In fact, the few studies that do exist seem to show that stronger backs may have a higher risk of injury than weaker ones.

McGill once challenged his grad students to find a scientific basis for exercises such as the sit-up. None could be found. The exercises have just evolved over time. Surprisingly, the sit-up actually puts more load on your spine than is allowed to be placed on a spine without special controls in a workplace, under the U.S. National Institute of Occupational Safety and Health guidelines.

To address the problems with existing therapy and exercise, McGill and his team of graduate students have scientifically developed four exercises. The exercises are the Cat/Camel, the Curl-up, the Side Bridge and the Bird Dog, done in that order. These exercises may look easy at first glance but when attempted, even the most die-hard gym rat can be left begging for forgiveness. Give these a try the next time you go to do some sit-ups or back extensions.

All of these exercises can be used to rehabilitate, promote spinal health and/or increase athletic performance. Each individual is different, so develop sets that challenge you and fit your goals. One should consider these exercises as recommended alternatives to traditional exercises such as sit-ups and back extensions.

Cat / Camel

The first exercise is the Cat / Camel. This is not a stretch but instead is a motion exercise. It flosses the nerves and limbers up the spine. This helps get the juices flowing, so to speak. Move smoothly from the Cat position (Figure 1A) to the Camel position (Figure 1B) and then back. Do this exercise five to seven times and then momove to the curl-up.

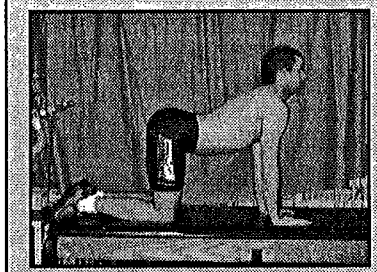

Figure 1 A: Before STAT 666.

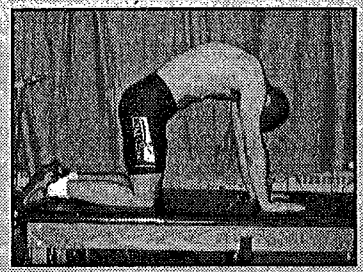

Figure 1 B: After STAT 666.

Curl-up

Lying on your back, place your hands, palm down, underneath the small of your back. Raise one knee up as pictured (Figure 2). Now raise your head and shoulders. To increase the difficulty in this exercise, tense your abs (called ab bracing) and complete the exercise. Repetitions for this vary depending on the person and the training goal. Move on to the side bridge.

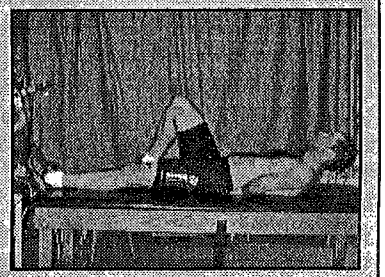

Figure 2: What Sports does on a Sunday afternoon of football.

Photos courtesy of S. McGill

Side Bridge

The object of the side bridge is to work your obliques or the muscles between your abs and back. It is way more difficult than it looks. Beginners should start by doing the side bridge from their knees (Figure 3A) while the more advanced can do it from their feet (Figure 3B). Place yourself in the position pictured. Hold for six to eight seconds. Your elbow should be parallel with your shoulder.

A further advancement includes rolling from side to side. Start with the position in Figure 3B with the top foot in front of the bottom foot. Now, after holding for six to eight seconds, roll over to the opposite elbow. During the roll you pass through a push-up position on your elbows. Then you continue the motion until you are on the opposite elbow. While rolling, keep your rib cage in line with your pelvis and your shoulders straight, abs braced. Do not twist your spine. Hold for six to eight seconds and roll back to the other side. The number of repetitions depends on the individual and their performance goals. Move on to the Bird Dog.

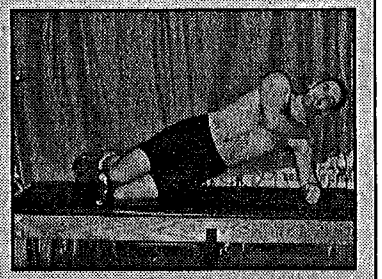

Figure 3A: First in...

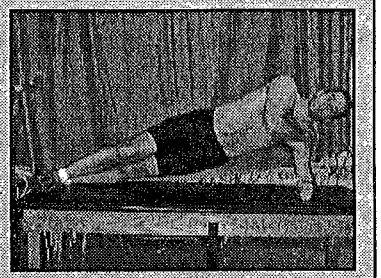

Figure 3B: ...then out...

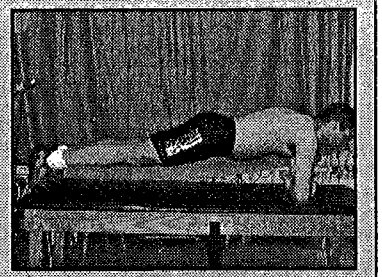

Figure 3C: ...then down.

Bird Dog

The final exercise, the Bird Dog, starts in the position pictured. One set of opposite leg and arm on the floor, the other set raised (see Figure 4). Hold this pose for a five count then bring both of the raised limbs (arm and leg) down to the ground and sweep the floor. Imagine you are brushing off the ground with your hand and leg. After doing several reps this way, switch your arms and legs so the opposite arm and leg are now raised. By raising one arm and leg you isolate two of the back muscles instead of all of them at once. Once again, vary the number of repetitions to suit your own needs.

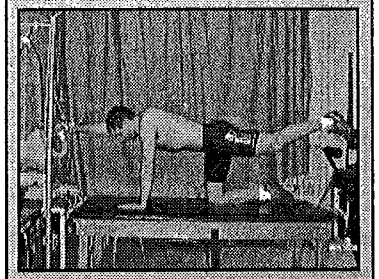

Figure 4: It hurts when I do this.

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