

A patient asked me the other day if her back problem would improve completely. It was a very good question. After I answered her question, I realized this would be a good topic to share with my readers. First I need to describe the basic anatomy of the spine and then I will discuss how the spine gets injured and heals. This will take more than one column so stay tuned.

Sometimes back pain is related to a problem with a spinal bone or vertebra. Most of the time, however, it is related to a problem with the soft tissue that connects the bones. There are two primary types of tissues that connect the vertebrae; ligaments and muscles.

There are very small and very large muscles that attach to the spine. The large ones are responsible for major movements of the spine. The smaller ones help to stabilize the movement and help maintain posture.

Ligaments are tough fibrous cords that connect bones together. They do not contract or stretch like muscles. There are a number of different types of ligaments in the spine but the two primary types are the spinal discs and the ligaments that make up the spinal joints.

Each spinal bone is connected to the next primarily by a disc and two joints. The disc is the fibrous cushion that holds the bones apart. It also connects them together and provides a pivot point to allow spinal motion. In the center of the disc is a jelly like substance. This is what the vertebrae pivot on, behaving almost like a water balloon.

The joints help to guide the motion and provide stability. Without the joints the spine would be very wobbly and it would be very difficult to stand still.

Most people think that when they have back pain that it is a muscle problem. While spinal muscles can be injured, most of the time back pain is caused by damage to the ligaments, either the joints or discs. As I mentioned previously, muscles stretch much more than ligaments. When the spine is over stressed it is usually the ligaments that are damaged. The muscles may also spasm, but this is usually a reaction to the ligament damage. The muscles contract in order to prevent further damage to the ligaments. If the muscles stay contracted long enough, they can hurt as well.

Next week I will write about how damage occurs and why different conditions and different people heal at different rates.