Back Pain

An elderly gentleman went to his doctor to get checked out for the pain that he had in his back for some time. After a quick examination, the doctor said, “I can’t find a cause for your complaint. Frankly, I think it’s due to drinking.” “In that case,” said the elderly gent, “I’ll come back when you’re sober.”

Your spine is made of 33 separate vertebrae. Each is slightly different with a slightly different role to play. Between each of these bones, there are intra-vertebral disks. These disks account for about 30 percent of the height of the spine. While these disks help to keep the vertebral bones apart, they also help with the motion of the back and act as shock absorbers. The bones of the spine are strong, which makes them unable to change with the weight that we put on our backs each day. The disks are needed to adjust to the compression on the spine. These disks are made of a strong ring around the outside. This is a strong fiber ring that sticks to the vertebral bodies above and below. Trapped inside the fiber ring is a thick fluid. This is a jelly that helps to give flexibility and accommodate changes in motion and weight. This jelly is made mostly of proteins that soak up a large amount of water.

When your back is carrying a heavy load, pressure squeezes these jelly disks. The disks then function like a shock absorber and some water is pushed out of the jelly as the load is increased. When the load is removed, the jelly absorbs the water again and the disk returns to its original size. The disks help with structural support and motion. For example, when you are lying down, one of the disks in the back will have about 60 pounds of pressure on it. However, when you stand and lift 40 pounds, the pressure on a disk in the lower back can be greater than 600 pounds. Did you know that you are at your tallest when you first wake up in the morning? Your height can change a couple of centimeters over the course of the day. During the day, your back is put through a rigorous workout. As fluid is pushed out and reabsorbed by these disks, they are strained.

Not all of the fluid is able to be reabsorbed while weight remains on the spine. This is why you are taller in the morning. After a night of lying down, the disks are able to recuperate and become fully recharged for the next day. As we age, the jelly material in the disks changes. With increasing age, there is less water and more fibrous material. This makes the disks stiff. The ring around the outside of the disks also stiffens, which can result in small cracks. This is one reason for the lack of motion and stiffness in the backs of the elderly.

Justin Newman is originally from Holyoke and is attending medical school at the University Of Chicago Pritzker School Of Medicine. This column is about health related issues with a focus on a rural community. The purpose of this column is to be informative and to comment on interesting medical and health related topics. Any questions or concerns that may arise regarding topics covered by this article should be addressed to your primary care doctor.

Justin can be reached by email at Justin.Tyler.Newman@gmail.com with comments or ideas for topics that you may desire to be addressed in this column. The goal of this column is that you find it not only entertaining and informative but also that it creates a desire to take a life-long interest your health and body.