

Spinal Anatomy

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Our Human Body is the most intricate and unique system that has ever been created. It is truly remarkable how each bone, muscle and organ functions to reach one goal, LIFE. One of the most important systems in our body is our nervous system. It is so important that the root of it, the brain and spinal cord, are encased with bone. Our skull protects the brain and our vertebrae encase the spinal cord.

Spinal anatomy is a remarkable combination of strong bones, flexible ligaments and tendons, large muscles and highly sensitive nerves. It is designed to be incredibly strong, protecting the highly sensitive nerve roots, yet highly flexible, providing for mobility on many different planes. Most of us take this strength, structure and flexibility for granted in our everyday lives—until something goes wrong. Once we're in pain, we're driven to know what's wrong and what it will take to relieve the pain and prevent a recurrence.

So what can alter this remarkable feature that we all have been born with? First we must look at how it works. There are 24 vertebrae that articulate with a disc between each one. These vertebral discs are unique in its structure. Its primary purpose is to act as a shock absorber between adjacent vertebrae. Spinal discs also act as ligaments that hold the vertebrae of the spine together and as cartilaginous joints that allow for slight mobility in the spine. There are a total of twenty-three vertebral discs in the spinal column.

Discs are actually composed of two parts: a tough outer portion (annulus fibrosus) and a soft inner core (nucleus pulposus) and the configuration has been likened to that of a jelly doughnut.

At birth, eighty percent of the disc is composed of water. In order for the disc to function properly, it must be well hydrated. The nucleus pulposus is the major carrier of the body's axial load and relies on its water-based contents to maintain strength and pliability.

So what can cause a fault in this complex mechanical system?

- Age
- Improper Joint Biomechanics
- Trauma or Infection
- Arthritic Diseases

As you age, your annular fiber become weaker and your nucleus pulposus becomes less hydrated. This is due to the affects of gravity, normal wear and tear and incorrect posture.

Improper joint biomechanics is one of the most common and instigative roots that affect the breakdown of this mechanical system. When these joints are articulating incorrectly the degenerative process begins immediately, otherwise known as osteoarthritis or disc degeneration. The long terms affects of this process is life threatening. Each disc needs proper motion severely. If joint motion is altered, hydration of the disc is affected. Each vertebra has end plates that have pores to release water and nutrients into the disc to provide hydration. Once a disc begins to degenerate, or dehydrate, it is merely impossible to rehydrate them. So what needs to be taken from this is to make sure that your vertebrae are in correct alignment

and have proper motion to keep the discs healthy. This is accomplished through chiropractic care, good posture and general overall health awareness.

Good spinal health and awareness can be your pathway to great health now and in the future. Aside from eliminating pain factors that are so prevalent in our society, proper alignment aids in your ability to affect you body as a whole by allowing your nervous system to function at its optimum. Begin a preventative life style now and seek good spinal health through chiropractic care.

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