OPTIMAL HEALTH UNIVER-™

Back Pain May Be in Your Genes

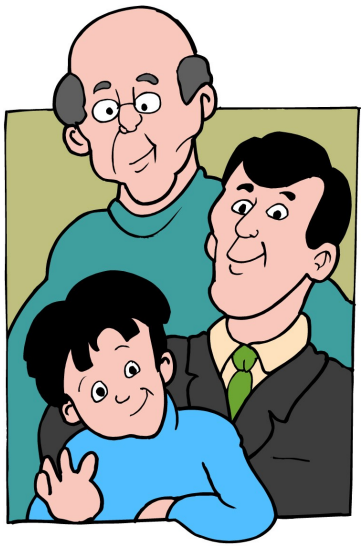
Even if you have never had a backache, if your parent, grandparent, sibling or other family member struggles with chronic back pain, new research shows that you are at heightened risk of developing similar symptoms. That's why regular preventive chiropractic care with YOUR NAME HERE is especially crucial for anyone with a family history of back pain.

Researchers are uncovering more and more evidence that genetics play a role in musculoskeletal disorders in general, and back pain in particular. **YOUR NAME HERE** is excited about the latest discoveries. The more doctors of chiropractic understand about factors influencing the risk of back pain, the better they can help patients.

The Role of Genes

Intervertebral discs are flexible, pillow-like structures between bones of the spine (vertebrae) that protect the spine and absorb impact. Investigations into disc degeneration reveal that the association with family history is as high as 61 percent (*Joint Bone Spine* 2008;75:383-7).

Another study revealed similar patterns of back pain symptoms among family members, even from an early age (*Ann Rheum Dis* 2010;69:2102-6).



There is often a connection between family patterns of back pain and family patterns of degenerative disease in the bones and joints — but not always. Here's the surprising conclusion of one study published last year: While propensities for low-back pain and disc deterioration are both hereditary, they are in fact carried on different genes. Consequently, these genetic predispositions may occur in tandem or separately (*Ann Rheum Dis* 2010;69:2102-6).

Evidence from Twin Studies

Twin studies are a gold standard in genetics research. Pairs of individuals with shared genetic make-ups are perfect research subjects for scientists seeking evidence of a genetic basis for a health condition. Several twin studies looked specifically at back pain, yielding fascinating results.

For instance, a just-published analysis followed 234 pairs of Australian and British twins over 10 years. Of these, 90 pairs were identical twins and 144 pairs were same-sex fraternal twins. The average age of the study participants was 53.3 years.

Doctors monitored the twins' spine health with magnetic resonance imaging (MRI). As the discs naturally degenerated with age, there were clear similarities in the degree of disc bulge — to what extent the soft inner material of discs bulges out from a tear in the tougher outer layer. Heritability was highest in twins who entered the study at ages over 60 (*Ann Rheum Dis* 2011;70:1203-7).

Another recent twin study looked at back pain in 1,250 pairs of twins, considering not only genetics but also other risks like weight and physical activity. Results showed that all other factors being equal, an individual is three times more likely to suffer back pain if an identical twin also suffers. And, having an identical twin with degenerative disc disease ups the risk of developing the disorder by six-fold (*Ann Rheum Dis* 2010;69:2102-6).

An earlier study in Finland looked at a group of 147 fraternal twin pairs and 153 identical twin pairs. Researchers wanted to determine the importance of genetic versus environmental causes of disc degeneration. Genetics accounted for a statistically significant proportion of disc height narrowing, hospitalization for back pain and duration of pain episodes (*Pain* 2007;131:272-80).

Specific Genes Involved

In recent years, specific genes have been linked with back pain and degenerative diseases.

For example, investigators compared the typical variations of a specific group of genes — or alleles — among a group of patients seeking treatment for lumbar disc disease. These particular alleles are associated with the make-up of cartilage, a flexible connective tissue found in joints throughout the body, including intervertebral discs. Particularly in patients under age 40, one allele predicted more severe disc degeneration than another (*Int Orthop* 2007;31:107-11).

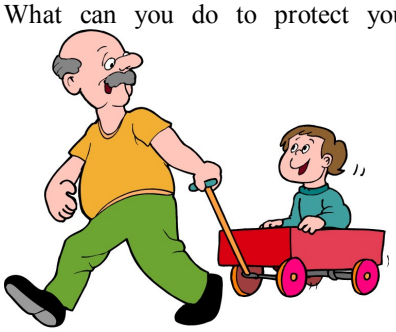
Other research relates disc degeneration to an allele that affects how the cells of the body take up vitamin D (*Ann Med* 2002;34:42-7).

Other analyses identified genes that may play a role in triggering osteoarthritis (OA), a disease in which the cartilage in the joints wears away, causing pain and stiffness. The same collagen-related gene described above is also associated with OA in that it affects the ratio of amino acids found in collagen (*J Rheumatol* 2011;38:747-52).

Other genes that control collagen volume and disease progression are also believed to contribute to OA (*Med Clin North Am* 2009;93:45-66).

A Proactive Approach

What can you do to protect your



health if you have a family history of back pain or degenerative disease? While your genetic make-up cannot be altered, don't throw in the towel yet. Just because an individual has a family history of back pain does not mean he or she is doomed to suffer as well. Many factors contribute to "switching on" a genetic trigger of disease. Chiropractic care keeps the spine in optimal alignment, offering significant prevention from back pain.

If you already live with back problems, chiropractic care can help ease or even completely relieve symptoms, even among individuals with a family history of the disorder.

For instance, a review of eighteen research trials shows that chiropractic care effectively manages symptoms of disc degeneration, without the potential hazards of surgery or medication (*Spine* 2010;35:E488-504).

Potential complications from surgery include adverse reaction to anesthesia and infection, while medications given for pain can cause gastrointestinal problems such as ulcers, liver damage, and a risk of dependence.

Drug-free chiropractic circumvents these concerns by strengthening the body's natural propensity to keep itself as healthy as possible. A spine that is in optimal condition is better able to weather degenerative disease, and that means less pain and better quality of life.

Chiropractic care protects patients' spines by identifying ***vertebral subluxations***. These are areas of dysfunction in the vertebrae — the small bones that fit together to form the spine, protecting the spinal cord and supporting the trunk. Vertebral subluxations are common problems in which the vertebrae are slightly out of alignment. People with a family history of back pain may be especially prone to developing this common disorder.

The doctor corrects vertebral subluxations with ***chiropractic adjustments***. These gentle, focused maneuvers safely put the spine back into proper alignment, easing discomfort. The well-being of the spine is a central component of the chiropractic lifestyle, an approach to health that emphasizes prevention to support the body's innate mechanisms. This unique approach is particularly helpful at warding off disease and injury. Other aspects of the chiropractic lifestyle include nutrition, exercise, stress management and ergonomics. Our office educates patients about all of these aspects of wellness.

If you have a family history of back pain or joint disease, or simply want to be the healthiest you can be, call today to schedule a chiropractic evaluation.

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