



Back Pain and The Brain

A new study at the University of Michigan Medical Center found that patients with lower back pain that cannot be linked to a physical cause may have abnormal pain processing pathways in their brains.

To determine if the pain is linked to the brain, researchers used a form of magnetic resonance imaging of the brain to determine what lower back pain patients feel and what is going on in their brains at the precise moment they feel it.

Similar findings have been recently noted in patients with fibromyalgia.

To correlate pain sensation with objective views of brain signals the researchers used a super fast form of MRI brain imaging called Functional MRI.

This study is an objective method for confirming what lower back patients report they feel and what is going on in their brain at the time they feel it. It is a road map of the areas of the brain that are most active when the patients are feeling pain.

This MRI technology has given an opportunity to look at the neurobiology underlying tenderness, which is a hallmark of both lower back pain and fibromyalgia.

There would seem to be some pathologic process making these patients more sensitive.

Lower back pain is a huge problem affecting nearly every American from time to time. I have taken care of patients with lower back pain treating them conservatively in the majority of cases, throughout my entire practice life. I also have performed spine surgery when conservative treatment has failed. I am certainly aware that lower back pain especially affects patients who are overweight, sedentary, or those who work in very physically demanding occupations.

Back pain interferes with life and work and is the second most frequent cause of lost work days in adults under age 45. It ranks only below the common cold.

Often times lower back pain is due to pulled muscles, ligament strain, damaged facet joints or small tears in the disc, which acts as a cushion between the bones of the spine (vertebra). These things do not show up on plain x-rays, but sometimes can be seen on CT or conventional MRI scans.

The physical cause of the pain often disappears after several days to a few weeks, but many patients have chronic or recurring lower back pain.

In the study a group of lower back pain patients were studied and compared with a controlled group of patients both of whom were subjected to the same painful stimuli.

The study found that it took much less stimulus to produce pain in the lower back pain patients than in the control subjects who tolerated the same stimulus with little pain.

The same kind of brain response was not seen in the back pain patients and the control



group. The control group required much more stimulus to have a brain response than the back pain patients.

The study suggests that lower back pain patients have enhanced response to pain in some brain regions and a diminished response in other areas that is very different from the control group of patients.

I have seen literally thousands of back pain patients over the years and have been as perplexed as any other physician when the objective findings that you would expect are not present, but you know very well that the patient is having pain and is not trying to misrepresent his or her symptoms.

Some doctors are quick to label patients "a crock" or a malingerer if they are complaining of pain in the lower back and possibly the hips and lower extremities, if there is no objective evidence on exam or studies that the patient should be having the pain.

Studies such as this definitely will help to explain why some patients have more back pain than other patients even though there is little objective evidence for it.

I personally have never labeled a patient a crock or malingerer in my years of practice, because I have always given them the benefit of the doubt that there probably is something going on that I am not able to specifically identify.

On a rare occasion patients will misrepresent and amplify their symptoms for different reasons.

I choose to feel that in the vast majority of patients there is a reason that they are experiencing the pain that they have even though we may not be able to specifically identify it.

This could be a very helpful study for all of us who treat the very major problem of lower back and leg pain in our practices.



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