

Feinstein Institute clinical study reveals new approach to diagnosing low back pain

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Scientists at The Feinstein Institute for Medical Research have discovered a new, personalized approach to diagnosing low back pain. The findings from a clinical study show that serum levels of the proinflammatory cytokine interleukin-6 (IL-6) vary in individuals with lumbar intervertebral disc disease and that biochemical profiling of circulating cytokines may assist in refining personalized diagnoses of disc diseases. These findings are published in *Arthritis Research and Therapy*.

Low back [pain](#) is the second most common cause of physician visits in the US and contributes to an estimated \$100 billion in US costs per year, making it clear that it causes a significant burden on both the healthcare system and the economy. For physicians trying to diagnose [low back pain](#), they are looking at many potential causes and unpredictable responses to treatment. Low back pain is caused by multiple triggers that present in similar ways. Some of the most common diagnoses for low back pain include intervertebral disc herniation, [spinal stenosis](#) and degenerative disc disease.

Feinstein Institute researchers, in collaboration with Northwell Health, formerly the North Shore-LIJ Health System, clinicians in the departments of neurosurgery and physical medicine and rehabilitation, looked at the biochemical profile of participants with low back pain. They studied proteins known as cytokines, specifically IL-6, to determine how they influenced the behavior and pain levels of those with LBP. They also looked at whether body mass index (BMI),

symptom duration or age had any effect on those serum levels.

Nadeen Chahine, PhD, associate investigator at the Feinstein Institute who led the clinical study, said, "We're very excited by the results of this clinical study and will continue to study cytokine levels in the future." "Exploring the biochemical profile of those who suffer from low back pain will help the 40 to 80 percent of sufferers throughout the US."

Dr. Chahine and her team recruited 133 participants from Northwell Health who suffered from low back pain as well as a control group. Their findings determined serum levels of IL-6 were significantly higher in subjects with low back pain compared with control participants. Additionally, participants with low back pain due to spinal stenosis or [degenerative disc disease](#) also had higher levels than those with intervertebral disc herniation and controls.

Their findings suggest that patients with low back pain have low-grade systemic inflammation and that biochemical profiling of circulating cytokines can assist in diagnosing those with low back pain. This will help low back [pain sufferers](#) get the correct diagnosis in a shorter amount of time.

Provided by North Shore-Long Island Jewish Health System

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