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The association of disc degeneration with obesity

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Abstract

Low back pain (LBP) is a most debilitating condition. Obesity has been recently recognized as a risk factor of LBP. Lumbar intervertebral disc degeneration has been associated with LBP especially in younger population and recently the association of lumbar disc degeneration with obesity has been reported.

There are several mechanisms through which obesity can impact the lumbar intervertebral discs. The mechanical loading caused by extra weight on lumbar discs may compromise disc nutrition and cause degradation of the extracellular matrix of the lumbar disc and, thus, cause disc degeneration. High body mass index, high waist circumference and abdominal obesity measured in magnetic resonance imaging are associated with lumbar disc degeneration among young males. Obese people are also usually less physically active and sit more during the day, which can compromise the blood supply and nutrition of the disc. This may cause increase of pH and cell death in the disc. Obesity is a risk factor for cardiovascular disorders and through dyslipidemia can cause atherosclerosis. Atherosclerosis by itself is a risk factor for lumbar disc degeneration because the blood and nutrient supply into the disc is diminished. Recently the obesity has been found to be a low-grade systemic inflammation condition in which adipocytokines stimulate hepatocytes to produce C-reactive protein. C-reactive protein can cause endothelial dysfunction and subsequently atherosclerosis.

From another perspective, low back pain, which may be caused by disc degeneration but many other reasons as well, can be so debilitating condition physically and mentally, that it may lead to obesity.

Biography

Jani Takatalo graduated as Physical Therapist in 2002 from Rovaniemi University of Applied Sciences (Finland) and Master of Health Sciences (Physical Therapy) at University of Jyväskylä (Finland) in 2006. He has been working as a part time Physical Therapist since graduating and graduated as MD in spring 2012. Nowadays he is working as a doctor for patients with musculoskeletal disorders and he is specializing for Physical Medicine and Rehabilitation. He will complete his PhD (Medicine) on disc degeneration by the end of 2013.

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