

# Researcher tags genes linked to disc degeneration

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Michele Crites-Battie

(PhysOrg.com) -- Lumbar disc degeneration is an uncomfortable condition that affects millions of people, but two University of Alberta researchers have identified some of the genes that are causing problems.

Michele Crites-Battie and Tapio Videman, in the Faculty of Rehabilitation Medicine, have discovered eight [genes](#) that are directly related to [disc degeneration](#).

"We found more genes associated with disc degeneration than was discovered in 30 prior studies," said Videman. "This is very exciting."

The pair started by studying 25 specific genes they thought could be linked to the disease.

They picked these "candidate" genes based on the views of two leading experts in the field who Crites-Battie? and Videman have collaborated with through the years. They narrowed their search down using state-of-the-art DNA analyzers, then applying statistical methods and analyzing MRIs of twins' spines.

"Identifying genes involved can provide important insights into the biological mechanisms behind disc degeneration and a better understanding of what is going wrong in the system," said Crites-Battie?. "This can eventually lead to effective interventions for the problem."

The pair will now look at the interaction between these eight genes and their environment. This will help them identify what gene forms indicate susceptibility.

"This will tell us who should avoid physical loading, and in which people obesity could be a risk factor for [spine problems](#)," said Videman.

But this could be a long process as disc degeneration is what's called polygenic, meaning it involves more than one gene.

"There are likely to be quite a number of genes involved and a system of complex gene-gene and gene-environment interactions," said Crites-Battie. "Obtaining a full appreciation of the [genetic architecture](#) of disc degeneration is likely to be a very lengthy, involved process."

This discovery comes about a year after the pair's award winning 10-year international twin-spine study proved that disc degeneration is affected largely by genetics.

"For years it has been thought that wear and tear was the main cause," said Crites-Battie?.

The U of A researchers have made huge strides in the field and are determined to put an end to lower-back pain.

"This study could lead to interventions and actions individuals could take to minimize disc degeneration to which [patients] might be particularly prone," said Crites-Battie?. "We are very excited about continuing down this trail and believe there is still much more to be learned."

Provided by University of Alberta

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