

# Teen helps to untangle a genetic mystery

## Summer job find links gene to kidney disorder

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A 17-year-old high school student working in a Toronto hospital laboratory has helped decode a gene responsible for a rare kidney disorder.

In what could hardly be called a run-of-the-mill summer job, Jonathan Grover spent the last few months staring at DNA sequences, looking for signs that could point to a disease gene.

Under the watchful eyes of renowned geneticists Dr. Lap-Chee Tsui and Dr. Stephen Scherer, Grover was part of a team of researchers at the Hospital for Sick Children who identified the genetic mutation responsible for distal renal



CHRISTINNE MUSCHI/TORONTO STAR

**RESEARCH:** Jonathan Grover, left, and Dr. Steve Scherer examine images of chromosome 7 genes.

tubular acidosis, a condition that makes the kidneys unable to excrete acid.

"He was the first person in our lab to start on the project," Scherer said. "He proved himself. He's a really great student, so we let him try it."

He and Jennifer Skaug, a senior research assistant, worked on the project until the discovery, Scherer said.

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## Discovery leads to diagnostic test

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"Grover made several contributions that really reflect his hard work and dedication — he worked a lot of weekends and nights."

The research is published in September's edition of the scientific journal *Nature Genetics*. An inherited disorder, the kidney condition begins in infancy. But it's not usually detected until children grow and show signs of dehydration, weakness and slow growth.

Left untreated, calcium wasting sets in, leading to poor bone calcification, or rickets, distorted growth and calcium deposits in the kidneys.

Until now, diagnosing the condition has been difficult.

But a genetic test developed by the Sick Kids team will easily and quickly identify it.

It's thought that Tiny Tim, the poignant fictional child in Charles Dickens' 1843 classic *A Christmas Carol*, was modeled on children with the condition, even though it was not officially recognized as a disease until the early 20th century.

Earlier this year, a research group from Cambridge University brought clinical data on the kidney disorder to the Centre for Applied Genomics — Tsui and Scherer's lab.

The British hoped the Toronto group could identify the gene mutation involved.

Grover, who's entering the OAC year at University of Toronto Schools, started volun-

teering in the lab late last summer, 20 hours a week. He is one of a few carefully chosen high school students picked to help out there each year.

A scholarship turned the volunteer position into a summer job.

"This doesn't seem so much like work," Grover said yesterday. "This (research) is something that fascinates me."

He plans a science career.

Scherer and Tsui, best known for helping to discover the cystic fibrosis gene, are working on completing identification of the suspected 5,000 genes found on chromosome 7. Sick Kids is the world headquarters for the Human Genome Project's chromosome 7 research.