

The discovery of modifying genes by Canadian Consortium for Cystic Fibrosis Genetic Studies could tailor treatment for cystic fibrosis patients and improve health outcomes.

July 2011 — Nearly a decade ago, the Canadian team, led by Dr. Peter Durie at The Hospital for Sick Children (SickKids) partnered with researchers and 37 cystic fibrosis clinics across the country and obtained DNA and information about the lungs, intestine, liver and pancreas of 75 percent of the Canadian cystic fibrosis population. After discovering that two U.S. universities were doing a similar study, they collaborated to form the North American Gene Modifier Consortium and created a study involving more than 3,400 patients.

Researchers were able to identify regions on chromosomes 11 and 20 that influence the severity of lung disease and its progression. Dr. Durie notes this is a major step toward finding new therapeutic targets for patients with cystic fibrosis and other diseases. “This is a paradigm shift in how to approach treating a disease. Historically, we have treated the consequences of the disease - the symptoms and secondary infections that develop - but we are now looking at treating the basic contributors to the disease at a genetic level. If we understand what the genes are, we can find ways to tweak the genes or the protein products using drugs.”

The ultimate goal with the advancement of newborn screening is to predict the severity of cystic fibrosis disease in individuals before they develop symptoms and to tailor treatments, thus preventing the progression of the disease.

“We know that cystic fibrosis affects each individual differently”, says Maureen Adamson, CEO, Cystic Fibrosis Canada. “This research helps us understand why some cases of cystic fibrosis are more severe. Cystic Fibrosis Canada sees this partnership approach as an essential step toward individualized treatment and improved quality of life for people with cystic fibrosis.”

This study is a shining example of how partnerships can create solutions for challenging the status quo on cystic fibrosis.

Thanks to our donors, volunteers and the patients involved in the study, our researchers were backed with the tools and resources to uncover this discovery. Thank you to everyone involved- research matters!