STOPPING CARDIAC ARREST BEFORE IT HAPPENS

Imagine if you had LQTS — a rare, often genetic condition, which puts the perfectly healthy at risk of a sudden cardiac arrest and death — but didn't know it.

Heart and Stroke Foundation researcher Dr. Andrew Krahn

It's a tragic news story that often makes headlines – a young, healthy, fit athlete suddenly collapses and dies of cardiac arrest.

"Stricken in the prime of life" — that's how Heart and Stroke Foundation researcher Dr. Andrew Krahn describes the five out of every 10,000 Canadians who suffer from long Q-T syndrome (LQTS).

This rare, often genetic condition puts perfectly healthy men, women and children at risk of a sudden cardiac arrest — and death.

Imagine if you had LQTS but didn't know it. Or imagine if your child had LQTS, which Dr. Krahn calls the "lightning strike" of arrhythmia.

Either scenario is frightening. That's why Dr. Krahn is working to develop an effective testing method for this and other inherited abnormalities. He is also in charge of a national registry of patients who experience unexplained cardiac arrest.

For every individual identified with arrhythmia, four more at-risk family members or relatives with the gene mutation can be identified, treated and potentially saved from dying from a sudden cardiac arrest.

Family members identified to be at risk can then be given preventative treatments such as beta blocker pills or implantable defibrillators.

By studying these patients, Dr. Krahn is also hoping to uncover the DNA sequences responsible for the abnormalities, which can be used in diagnosis and risk prediction.

The aim is to better understand inherited electrical abnormalities, detect these conditions in vulnerable family members and protect them from sudden death.

FINDING **ANNA** IN TIME

Anna suffered a sudden cardiac arrest while working out. She didn't know she had an undiagnosed — and treatable — genetic heart condition.

Anna Shanh remembers nothing of her sudden cardiac arrest. Her last memory is climbing into her car after work. She woke up three days later in a hospital bed with her fiancé, family and friends by her side.

Anna's loved ones assembled the pieces of the puzzle for her. While working out at her local YMCA, she suddenly collapsed and hit her head on the floor.

Staff sprang into action, performing CPR and administering shocks from an automated external defibrillator (AED).

The situation was critical: she was rushed to the hospital, put into an induced coma, and had an implantable cardioverter defibrillator implanted in her chest.

No one was more surprised than Anna, a trained nurse. At 25, she was young, fit and healthy. She ate well, exercised daily and avoided drugs and cigarettes — nothing put her at risk for sudden cardiac arrest.

"The first thing everyone says to me is, 'You're so young,'" Anna says. "This can happen to anyone."

After a year of testing following the incident, Anna was diagnosed with Long Q-T syndrome. It results in an abnormal heart rhythm (arrhythmia) which puts people at risk for potentially fatal conditions like sudden cardiac arrest.

With no apparent symptoms for the condition, Anna never knew she was at risk.

Today Anna is happy and healthy, newly married, and joining forces with the Heart and Stroke Foundation to advocate for heart health and public access to AEDs.

Thanks to your support, research is creating survivors by enabling faster, better cardiac emergency response and treatment.

Help create more survivors. #CreateSurvivors

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