

## **World Heart Rhythm Day; Wednesday 13<sup>th</sup> of June 2007**

June 13th is World Heart Rhythm Day. Heart rhythm disturbances can be fatal and can strike young people. On June 13th World Heart Rhythm Day will be commemorated across the globe. In New Zealand, the emphasis should be on education, says Associate Professor Jon Skinner, specialist Heart Rhythm doctor at the Starship Childrens Hospital in Auckland.

Michelle at 37 had suffered from three seizures over a 10 year period, had been diagnosed with epilepsy, despite all the tests being normal, and had taken anti-epileptic medication. The seizures came on during the night or when aroused from sleep. It was only when she was reading an article in the Woman's Weekly about a 12 year old boy called Ben Frost that she realised her problem might be due to her heart and not due to epilepsy. She read that Ben had died at the age of 12 warming up for a game of hockey. He also had been diagnosed with epilepsy and treated with many different medications which had not worked. He also had had seizures during or after exercise and on one occasion had nearly drowned in a swimming pool, despite being a strong swimmer. After his death Dr Skinner met his family and, from the history alone, suspected a condition called Long QT syndrome had caused his death. Ben's neonatal screening (Guthrie) card, saved from when he was only a few days old, was retrieved from the national testing centre, DNA was extracted, and with funding from Cure Kids, molecular geneticists in Auckland confirmed the diagnosis of long QT syndrome. Ben's family had to face the knowledge that his death could have been prevented, and wrote his story hoping that it may save someone else's life if they recognise the symptoms in themselves.

Michelle was now sure that she also had long QT syndrome. Her GP performed an ECG (electrocardiograph), and interpreted it as normal- not showing a long QT interval. Her neurologist wasn't convinced either. Michelle persisted and went for a second neurology opinion, who considered that long QT syndrome was a high possibility and referred her to a specialist rhythm cardiologist (Dr Warren Smith) at Auckland City Hospital. He felt the ECG showed obvious long QT syndrome. She was started on beta blocker medication and had a pacemaker defibrillator implanted. Since that time she has not had any seizures at all.

Recurrent collapses, seizures and even sudden death due to conditions like long QT syndrome are not uncommon. Researchers estimate that about 100 1 to 40-year-olds die suddenly and unexpectedly in New Zealand each year from unexpected heart rhythm problems. 10-15% of sudden infant deaths are due to long QT syndrome. These conditions usually run in the family, with half of the family members carrying a defective gene. Clinicians such as Dr Skinner and the New Zealand Pacing and Electrophysiology Group (NZPEG), currently chaired by Dr Warren Smith, want patients and medical practitioners throughout New Zealand to be aware of these conditions because such young sudden deaths can be prevented with relatively simple medical interventions. The key is to recognise them in the first place.

June 13th is World heart rhythm awareness Day. This initiative was started in the United Kingdom by a group of charities supporting work into heart rhythm conditions. The arrhythmia alliance is one ([www.heartrhythmcharity.org.uk](http://www.heartrhythmcharity.org.uk)), CRY and STARS are others (cardiac risk in the young, [www.c-r-y.org.uk](http://www.c-r-y.org.uk), Syncope Trust And Reflex anoxic Seizures [www.stars.org.uk](http://www.stars.org.uk)). Whilst much is written in the media about the importance of coronary artery disease, and surgical interventions such as coronary bypass surgery and coronary angioplasty, relatively little is written about heart rhythm problems in the media.

In New Zealand each year around 1500 cardiac pacemakers are implanted for people who have hearts which go too slow. Around 200 pacemaker defibrillators are implanted for people at risk of cardiac arrest from a heart rhythm problem- budget limitations constrain the number of these defibrillators implanted in New Zealand, and the rate of implantation is lower than in Australia. Another common problem is attacks of very fast heart rhythm known as ' SVT ' which, while not usually life threatening, affect people of all ages. Many of these conditions can be cured using a keyhole entry technique known as catheter ablation; about 300 of these procedures are done in Auckland each year, and they are also performed in Hamilton and in Christchurch. New technologies have opened up the possibility of curing even more people with such heart rhythm problems; a new computer-based system allows a three-dimensional construction of the heart and this allows specialist heart rhythm doctors to treat very complex rhythms which before were untreatable. Examples include atrial fibrillation, the commonest heart rhythm problem; affecting thousands of New Zealanders and a major risk factor for stroke. Ablation of atrial fibrillation was introduced to New Zealand by Dr Ian Crozier in Christchurch over six years ago. Such procedures are time-consuming and the equipment is expensive. The system in Auckland was purchased by the Starship foundation, but each catheter that is used can cost \$6,000, and it may only be used once.

On World Heart Rhythm Day, Drs Skinner, Smith and Crozier say we should celebrate the expertise we have in New Zealand and we must continue to campaign for adequate resources to help the thousands of New Zealanders with heart rhythm problems.

Michelle and her family will celebrate World Heart Rhythm Day because she is alive. Her life has been saved by a magazine article. All of us should be aware of the features of collapse caused by a heart rhythm problem rather than epilepsy or a common faint, so these are shown below. If you are unsure, seek advice from the website of the Cardiac Inherited Disease Group New Zealand who are sponsored by Cure Kids ([www.cidg.org](http://www.cidg.org)), or visit [www.sads.com.au](http://www.sads.com.au). Your local cardiologist will be pleased to see you.

Faints, collapse and seizures.

Many people- perhaps as many as 25% of us, will have a faint at sometime in our life. Most are not life-threatening. A common faint usually starts with a feeling of nausea or dizziness, most commonly occurs when we are hungry, hot, or thirsty, after standing for a long time, or after a severe pain. Such faints are not dangerous, and can be managed with adequate food and fluid intake- and early recognition of the warning signs so you can sit or lie down until they settle down. Epilepsy seizures usually start with stiffness and

twitching of the arms and legs. The dangerous, heart rhythm type of collapses, usually have a sudden onset, little or no warning, with a sudden collapse to the ground. The person may be unconscious before hitting the ground- so facial injuries sometimes occur. A seizure may follow due to shortage of blood getting to the brain. Sudden collapses during or after sporting activity, especially swimming, are very suspicious, as are seizures which occur during the night. For further information, visit the websites listed in this article.

---

**Associate Professor Jon Skinner**

Chairman: Cardiac Inherited Disease Group

Chairman: Trans-Tasman Response Against Sudden Death in the Young

Paediatric Cardiologist/Electrophysiologist

[www.cidg.org](http://www.cidg.org)