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Making Disease Detection Sooner... and Better

An Interview with **Hai-Ling Margaret Cheng**, Biomedical Engineer, Ted Rogers Centre for Heart Research
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I'm an MRI physicist by training, and an engineer by training as well. My research is focussed on developing new magnetic resonance imaging technologies, particularly technology to look at function of tissue and also looking at the viability of living tissues inside the human body. The main focus of my research is to extend those imaging capabilities in order to help with earlier, more accurate diagnosis that would lend themselves to more accurate detection of disease, and hopefully better treatment.

How can you detect disease?

Many diseases really start out with small functional changes, and these functional changes take place long before anatomical morphological differences start to appear. For example, when people develop a tumour, you don't get a huge lump of tumour right at the outset. What happens is you start to get abnormalities at the cellular level, and these cells start to proliferate or grow out of control. So being able to detect these functional changes in the body is really important because we want to diagnose disease earlier on. It also works the same way in terms of monitoring treatment. Is the treatment working? And a lot of times, we know that a treatment is working if we can detect functional changes first, because those always precede before morphology differences occur.

TODAY'S RESEARCH. TOMORROW'S REALITY.

