

Research sheds light on debilitating stomach condition

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(Medical Xpress)—Researchers from the Auckland Bioengineering Institute (ABI) have accurately mapped the patterns of abnormal gastric electrical activity that occurs during gastroparesis, a debilitating stomach condition.

Dr Gregory O'Grady, from the Auckland Gastrointestinal Research Group based at the ABI, says the new findings provide for the first time an accurate and detailed description of gastric dysrhythmias in humans that will help in the development of new diagnostic and treatment options.

Gastroparesis, which affects predominately women and 10 per cent of diabetics, is a medical condition that affects the stomach's ability to empty itself resulting in a reduced quality of life due to chronic nausea, vomiting, abdominal bloating and pain.

[Abnormal electrical activity](#) in the stomach or gastric dysrhythmias was known to be associated with gastroparesis but until now no accurate descriptions of these abnormalities existed, says Dr O'Grady.

"This is because previous research had been impeded due to there being no adequate methods to investigate gastric [electrical activity](#)," he says.

The research project involved surgeons, engineers and biomedical scientists from The University of Auckland, the Mayo Clinic in the US, and The University of Mississippi.

The Gastrointestinal Group's research, which was published in the prestigious international medical journal *Gastroenterology*, required several years of technical development.

"We developed new clinical devices consisting of sheets of hundreds of [electrodes](#) that could be laid over the stomach to precisely track electrical patterns during surgery. A new [software platform](#) for processing these patterns also had to be developed by the research team, says Dr O'Grady.

"Gastroparesis is a devastating disease that is particularly difficult to diagnose and treat, and its causes have been poorly understood. Our research provides significant new insights into the disease, and opens the door to advanced new treatment options such as the use of gastric pacemakers, he says.

"We hope that over the next few years our devices will evolve into routine clinical tools for diagnosing gastroparesis as well as other significant disorders of [stomach](#) function," says Dr O'Grady.

Provided by University of Auckland

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