

Research helps kids with acute gastroenteritis recover at home

by [University of Calgary](#)



Stephen Freedman led a national study to guide at home treatment after children are discharged from emergency for frequent vomiting. Credit: Leah Hennel, Alberta Health Services

Most children seeking emergency department (ED) care due to vomiting are discharged home. Although they usually feel better when they leave the ED, the vomiting recurs in nearly one-third of children.

Dr. Stephen Freedman, MD, a pediatric ED physician, led a national study to evaluate if sending children who present for care with frequent vomiting from an acute intestinal infection are better off when provided with an anti-vomiting medication to take, as needed, at home.

"When children are really sick, it's important to get them to hospital to be seen by a medical professional and it's also important to ensure that once they are able to go home, that they continue to recover," says Freedman, a Professor at the Cumming School of Medicine, University of Calgary, Canada and lead investigator of the study.

"Gastroenteritis results in over two million visits by children to emergency departments and over 50,000 hospitalizations each year in North America."

Freedman and his team conducted a double-blind randomized clinical trial in six pediatric hospitals in Canada. They enrolled more than 1,000 children aged six months to 18 years and found that ondansetron, a well-tolerated and safe anti-nausea drug, can prevent vomiting when given at home.

In the study, published in *The New England Journal of Medicine*, children administered ondansetron were less likely to have moderate-to-severe symptoms after ED discharge.

"In an earlier study, we found that ondansetron works well to stop vomiting and reduces the need for intravenous fluids administration when given as a single dose in the ED. However, some kids experience a recurrence of vomiting at home. Now we know that by providing a small number of doses to be taken at home, it can benefit those with ongoing symptoms," says Freedman.

Despite how common acute gastroenteritis is in children, Freedman says there has been an ongoing debate as to the best treatment approach following ED discharge. He adds that the results from this definitive trial should finally address this question.

Study to determine the right approach

"This study was designed to determine the right approach. We wanted to ensure we do not unnecessarily provide a medication with no clinical advantages. On the other hand, if it is beneficial, we wanted to quantify the benefits so that health care teams know how many doses to provide and which patients it will help. This study offers evidence that children with frequent and recent vomiting from an intestinal infection should be provided with two doses of ondansetron at the time of ED discharge," says Freedman.

The study involved institutions within the Pediatric Emergency Research Canada (PERC) network. Network co-founder, and study co-author, Dr. Terry P. Klassen, MD, says it demonstrates the effectiveness and collaboration of Canadian researchers and shows the value of investment in clinical trials in Canada.

"In areas like pediatric emergency medicine, we need to collaborate nationally to conduct clinical trials that provide the evidence-based solutions needed to inform care to ensure that every child has an optimal outcome," says Klassen, pediatric emergency physician and professor at the University of Saskatchewan.

The study's findings have been included in national recommendations distributed to emergency department health care providers published by Translating Emergency Knowledge for Kids (TREKK).

"The next step is to determine, among the broad group of children who were eligible to participate in this study, if there is a sub-group of children most likely to benefit. This will enable clinicians to ensure the medicine is provided appropriately to those patients for whom it will be most effective," says Freedman.

More information: Stephen B. Freedman et al, Multidose Ondansetron after Emergency Visits in Children with Gastroenteritis, *New England Journal of Medicine* (2025). [DOI: 10.1056/NEJMoa2503596](https://doi.org/10.1056/NEJMoa2503596)

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