

Antibiotics alone successfully treat uncomplicated appendicitis in children

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Appendicitis is the most common cause for emergency abdominal surgery in childhood, affecting 80,000 children in the United States each year, but nonoperative treatment options are viable. A study performed by the Midwest Pediatric Surgery Consortium, led by Peter Minneci, MD, and Katherine Deans, MD, co-founders and directors of the Center for Surgical Outcomes Research at Nationwide Children's Hospital, and published online today in *JAMA*, found antibiotics alone successfully treated children with uncomplicated appendicitis and was associated with fewer disability days at one year.

Of 1,068 [patients](#) from 10 health centers enrolled in the study, 67.1% of those who elected to initially manage their care through antibiotics alone experienced no harmful side effects and did not later require an appendectomy by their one-year follow-up appointment. Patients in the non-operative group experienced an average of 6.6 disability days, compared to the 10.9 days in the surgery group. Non-operative management was also associated with fewer disability days for caregivers.

This research, funded by a Patient Centered Outcomes Research Institute (PCORI) grant, expands on an [initial pilot study](#) Drs. Minneci and Deans published in 2015, which first demonstrated the efficacy and safety of non-operative management of appendicitis in children by showing that children who were hospitalized for uncomplicated appendicitis—who experienced abdominal pain for no more than 48 hours, had a white blood cell count below 18,000 and underwent an ultrasound or CT scan to rule out rupture and to verify that their appendix was 1.1 centimeter thick or smaller with no evidence of an abscess or fecalith—and who elected initially to be treated with

antibiotics could be successfully sent home without the use of traditional surgery.

"For surgery, patients need to go under general anesthesia, and there is 1-2% chance of a major complication and 5-10% chance of a minor complication," said Dr. Minneci, principal investigator of the studies with Dr. Deans. "And patients will definitely experience post-operative pain and disability. Treatment-related disability is important to kids, because it means missing activities in their lives that may directly affect their development and quality of life such as school, athletics and vacations."

Additionally, the study, which was designed to mimic clinical practice and used a decision aid to educate patients about the risks and benefits of each treatment option, found that both the patients who elected to undergo surgery and those who chose nonoperative care management with [antibiotics](#) alone had similar rates of complicated appendicitis, and reported similar health care satisfaction at 30 days and quality of life at 1 year.

Drs. Minneci and Deans said future research could study how to disseminate these results so that more patients can be informed of the two options and the risks and benefits of each. The decision aid and treatment protocols developed for this study were developed to minimize risks and can be easily translated into pediatric clinical practice.

"Culture change and rethinking how we treat patients is always hard," said Dr. Deans. "Right now, some of the standards for success among surgeons are different than among patients and families. Surgeons' tend to be passionate about operations, and an appendectomy is a well-tested and trusted procedure. However, some patients want to avoid [surgery](#) at all costs, and the results of our studies reflect the effectiveness of offering a non-operative management to patients and their families in

[clinical practice](#). This allows us to move away from a one-size-fits-all model of [appendicitis](#) care and treat each child based on his or her values and preferences."

Provided by Nationwide Children's Hospital

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