

# New Algorithm to Help Diagnose Appendicitis

Appendicitis is the most common abdominal surgical procedure in the pediatric population, yet diagnosis can prove challenging in many cases.

Standard diagnostic approaches include history and physical exam, white blood cell count and diagnostic imaging. Both ultrasound (US) and computed tomography (CT) scans have been reported to improve diagnostic accuracy in appendicitis.

Although CT has a higher sensitivity for diagnosing appendicitis than ultrasound, ongoing concerns have been raised about the radiation exposure and increased costs associated with CT scans. The American College of Radiology (ACR) has published guidelines that state: "In children, US is the preferred initial examination as it is nearly as accurate as CT for diagnosis of appendicitis but is without ionizing radiation exposure."

At Children's of Alabama, we would like to decrease the amount of unnecessary CT scans for children undergoing workup for possible appendicitis. We have recently instituted a new diagnostic pathway for children with suspected appendicitis via collaboration between Rob Russell, MD (pediatric surgery), Kathy Monroe, MD (pediatric emergency medicine) and Yogi Vaid, MD (pediatric radiology).

This algorithm is based on the Pediatric Appendicitis Score (PAS), which can aid in categorizing children into risk categories based on their symptoms and laboratory values. Above is our diagnostic algorithm which has been shown to aid in the diagnosis of appendicitis and reduce radiation exposure.

As always, we would welcome the opportunity to see your patients in our office during office hours. Additionally, the Emergency Department is familiar with this algorithm and can facilitate pediatric surgery involvement when required. Below is more information concerning the PAS score and the diagnostic algorithm created.

## Pediatric Appendicitis Score

Low Risk < 4; High Risk ≥ 7

Nausea/vomiting	1
Anorexia	1
Migration of pain to RLQ	1
Fever*	1
Cough/percussion/hopping tenderness	2
RLQ tenderness	2
Leucocytosis (WBC > 10,000)	1
Neutrophilia (ANC > 7,500)	1

\* Fever defined as greater than or equal to 38.0°C (100.4°F)

