

AAOS issues new clinical practice guideline for treating common elbow fractures in children

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The American Academy of Orthopaedic Surgeons (AAOS) Board of Directors has recently approved and released an evidence-based clinical practice guideline (CPG) on "The Treatment of Supracondylar Humerus Fractures."

Andrew Howard, MD, pediatric orthopaedic surgeon, medical director of the Trauma Program at the University of Toronto Hospital for [Sick Children](#) and the chair of the AAOS Work Group responsible for this CPG, said that surgeons see many of these types of fractures, particularly in children ages 5 to 9.

Supracondylar humerus fractures are common and likely occur when children are playing, or while climbing trees, jungle gyms and other structures. When young children fall, they tend to hyperextend their arms. As a result they land on a stiff [arm](#), often fracturing the arm, just above the elbow joint.

In addition to the broken bone, the sheer force of this type of fall, may cause "all kinds of consequences," said Dr. Howard. The artery which provides blood to the forearm and hand – runs very close to the elbow, as do the three main nerves of the arm: median, radial and ulnar. As a result, elbow fractures can cause circulation problems, and in 10 to 15 percent of cases, nerve injuries.

This new guideline is the result of a robust review of more than 350 research studies on this topic and includes 14 recommendations on how to stabilize the fracture, remedy circulation problems, and ultimately, ensure the fastest and most comfortable recovery for each child.

Important findings:

- First, the guideline recommends that surgeons stabilize the fracture with "two or three laterally introduced pins to stabilize the reduction of displaced, misaligned, supracondylar fractures of the humerus."
- In addition, the guideline recommends procedures to restore blood flow and circulation if the artery has been stretched, torn or severed. Orthopaedic surgeons know that the first thing to do with an arm without a pulse is to gently realign the arm. Once the fracture is put back into the proper position and established, circulation will likely recover.
- However, sometimes there is still no pulse in the arm following realignment. This can occur with or without adequate blood flow. The guideline recommends the surgical "exploration" of the blood vessels and nerves in front of the [elbow](#) in patients with no wrist pulse, if the hand remains cold and underperfused (without adequate [blood flow](#)), to "ensure survival of the tissues in the arm and hand." In these rare instances, further surgery may be necessary "to prevent rare, but serious, limb threatening and life threatening [consequences](#)," according to the guideline.

The guideline states: "If the hand feels warm, has color from circulation that you can see, and the child can move the muscles of the forearm and demonstrate some motion, then there is evidence that tissues are being nourished despite the absent pulse." The guideline does not specifically recommend surgery or observation in these cases.

"Ultimately, each physician must evaluate his or her patient's condition and circumstance and figure out 'how do I best treat this child,'" added Dr. Howard.

More information: The full guideline, "The Treatment of Supracondylar Humerus Fractures," which is the third Academy CPG to focus on a pediatric condition, along with all supporting documentation and workgroup disclosures, is available on the AAOS website:

www.aaos.org/guidelines

Provided by American Academy of Orthopaedic Surgeons

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