

Obese children more likely to have complex elbow fractures and further complications

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Pediatric obesity is currently an epidemic, with the prevalence having quadrupled over the last 25 years. Children diagnosed with obesity can be at risk for various long-term health issues and may be putting their musculoskeletal system at risk. According to new research in the February issue of the *Journal of Bone and Joint Surgery (JBJS)*, obese children who sustain a supracondylar humeral (above the elbow) fracture can be expected to have more complex fractures and experience more postoperative complications than children of a normal weight.

"These findings show that children diagnosed with [obesity](#) are more likely to sustain these complex [fractures](#) from something as simple as falling onto an outstretched hand while standing, and these types of falls are quite common," said author Michelle S. Caird, MD, assistant professor in the department of orthopaedic surgery at the University of Michigan. "Our research aims to remind parents that there are many serious risks to [childhood obesity](#), including fractures and surgical complications. It's important to ensure that children get the proper amount of exercise and to build their [bone](#) banks early in life to a strong and healthy frame."

Specific Study Details

- More than 350 patients ranging in age from 2 to 11 years old who had undergone operative treatment for supracondylar humeral fractures were included in the study.
- Patient records were reviewed for demographic data, body mass index (BMI) percentile, and injury data.
- Forty-one children were underweight (BMI 85th percentile), and 68 were obese (BMI in the >95th percentile).
- The study included 149 patients with type-2 fractures (a break through part of the bone at the growth plate and crack through the

bone shaft), 11 of whom were diagnosed with obesity; and 205 patients with type-3 fractures, 57 of whom were diagnosed with obesity.

- Complex fractures were defined as Type-3 fractures (completely displaced), fractures with multiple fracture lines, [open fractures](#) where the bone is exposed through the skin, and multiple fractures in the same arm.
- Using logistic regression, obesity was associated with complex fractures and more complications.

Key Study Finding

This is the first study to assess the implications of obesity on this type of a fracture and it validates the public health efforts in combating childhood obesity.

Similar studies also have shown that overweight children who break their femur (thigh bone) are more likely to need bigger surgery and have more complications than [children](#) who are not overweight.

"Future research needs to focus on modifying obesity in kids to test if that changes fracture complexity and complication profiles," Caird added. "We also should focus on research to improve childhood bone health overall whether this is more calcium, vitamin D, exercise or a combination of such measures to help further build and maintain a skeleton that can structurally and metabolically support the person through their lifetime."

Provided by American Academy of Orthopaedic Surgeons

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