

# Etanercept helps restore normal growth in children with juvenile arthritis

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Researchers from the Cincinnati Children's Hospital Medical Center observed a statistically significant increase in mean height, weight, and body mass index (BMI) percentiles in patients with juvenile idiopathic arthritis (JIA) who were treated with etanercept or etanercept plus methotrexate (MTX). JIA patients treated with MTX alone did not display an increase in growth percentiles. Results of the 3-year study are available online and in the November issue of *Arthritis & Rheumatism*, a journal published by Wiley-Blackwell on behalf of the American College of Rheumatology.

Juvenile idiopathic arthritis (JIA), one of the most common rheumatic diseases in children, causes significant pain and functional disability. According to a 2008 study by the National Arthritis Data Workgroup, there are close to 300,000 children in the U.S. with some form of juvenile [arthritis](#). Prior studies show that JIA patients may experience impaired physical growth and development dependent upon the severity of chronic inflammation, longer duration of disease, and greater functional joint involvement.

"A realistic treatment goal for JIA patients should include therapy aimed at reducing inflammation in an effort to minimize disease-related disability and growth impairment," said lead author of the study Edward Giannini, DrPH, MSc. Dr. Giannini and colleagues conducted a 3-year, nonrandomized multi-center registry of 594 patients with polyarticular (90%) or systemic JIA who were treated with etanercept only, etanercept plus MTX, or MTX only.

Participants between the ages of 2 and 18 who enrolled in the registry were treated with etanercept twice weekly at a dose of 0.4 mg/kg or once weekly at a dose of 0.8 mg/kg. The height, weight, and BMI for each patient were recorded at baseline, years 1, 2, and 3, and compared with the U.S. Centers for Disease Control and Prevention standardized growth charts to obtain the percentiles.

The authors reported that the mean height in the etanercept group significantly increased by 4.8 percentile points by year 3. For those in the etanercept plus MTX group, a significant increase in mean height in years 1, 2, and 3 was also recorded—2.4, 3.3, and 5.6 percentile points, respectively. Similar significant increases in weight percentiles at years 1, 2 and 3, respectively, were observed in the etanercept-only group (7.4, 10.0, and 13.0) and in the etanercept plus MTX group (2.9, 6.9, and 8.4). BMI percentiles also increased significantly over the 3-year period, ranging from 9.6 to 13.8 percentile points in the etanercept-only group and from 2.1 to 5.2 percentile points in the etanercept plus MTX group.

"Studies have shown that growth retardation is associated with systemic inflammation and is a potentially permanent complication of JIA," explained Dr. Giannini. "Restoring normal growth development is a relevant goal of anti-inflammatory treatment in JIA patients and our study showed significant increases in height, weight, and BMI percentiles for those treated with etanercept alone or in combination with MTX." Significant changes in growth measures were not observed for patients receiving only MTX treatment.

**More information:** "Effects of Long-Term Etanercept Treatment on Growth in Children with Selected Categories of Juvenile Idiopathic Arthritis." Edward H. Giannini, Norman T. Ilowite, Daniel J. Lovell, Carol A. Wallace, C. Eglia Rabinovich, Andreas Reiff, Gloria Higgins, Beth Gottlieb, for the Pediatric Rheumatology Collaborative Study Group, Yun Chon, Nan Zhang, and Scott W. Baumgartner. *Arthritis &*

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