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**Constipation and Growth: Something New to Consider**  
*AAP Grand Rounds 2009;21;9*

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# Constipation and Growth: Something New to Consider

**Source:** Chao HC, Chen SY, Chen CC, et al. The impact of constipation on growth in children. *Pediatric Research*. 2008;64(3):308-311; doi:10.1203/PDR.0b013e31817995aa

Between 2002 and 2006 investigators from Chang Gung University College of Medicine in Taiwan studied the influence of constipation and therapy of constipation on growth of children aged one to 15 years.

Constipation was defined as hard stools, difficult defecation, or frequency of defecation less than three times in a week for more than one month. Patients with known gastrointestinal or other chronic diseases were excluded. Age-matched healthy children visiting a nutrition clinic were enrolled as controls.

All children were monitored for 24 weeks. Constipation was treated with oral magnesium oxide. Children with only fair or poor response to treatment by 12 weeks (defined as duration of symptoms >40% of observation period) were treated with either a gastrointestinal stimulant (sennoside) or osmotic laxatives.

Height-for-age, weight-for-age, and body mass index (BMI) were calculated at baseline, 12 weeks, and 24 weeks while appetite was assessed one time each during the first and second 12 weeks.

A total of 2,426 children were enrolled (mean age 7.3 years). Compared to controls, children with constipation had significantly lower height, weight, height-for-age z-score, weight-for-age z-score, BMI, and BMI-for-age z-score at study entry. Treated constipated patients had significantly greater changes in height and weight at 12 and 24 weeks than controls. After 12 weeks of treatment, significantly greater changes in z-scores of height-for-age, weight-for-age, and BMI-for-age were found in patients with good clinical responses to therapy (1,377) than in those with a poor response (1,049). At 24 weeks, children with fair to poor responses who responded well to additional therapy (n=613) had better growth than those who did not (n=436). Increased appetite was associated with greater height and weight gain at 12 and 24 weeks.

The authors conclude that chronic constipation may slow growth in children and that successful medical treatment of constipation can be beneficial to their growth.

## Commentary by

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*Dr. LeLeiko and Ms. Robinson have disclosed no financial relationship relevant to this commentary. This commentary does not contain a discussion of an unapproved/investigative use of a commercial product/device*

Not only can constipation lead to gastrointestinal complaints but also poor oral intake and emotional stress for both the child and parents. Constipation as a barrier to growth has not previously been studied in a population of healthy children.

The authors of this study demonstrated that mean height and weight in constipated children was less than in children without constipation. Furthermore, successful treatment of the constipation led

### PICO

**Question:** Does successful treatment of constipation in otherwise healthy children improve appetite and growth?

**Question type:** Intervention

**Study design:** Concurrent cohort study

to significant gains in oral intake and in weight and height. Subjects who had a good response to therapy for constipation gained more weight and grew at an accelerated rate compared with those who did not respond as well. This implies that constipation is directly related to normal growth in the study population. While a large number of subjects were included in this study, it is not clear how they were recruited. BMI-for-age z scores ( $0.06 \pm 1.11$ ) in the control group were close to zero (Z scores are useful when comparing items from distributions with different means or standard deviations and indicate how many standard deviations a value is from the test mean). Therefore children in the control group had little potential for catch-up growth. The frequency of visits for the control group was not reported. This could be significant because patients in the study group were seen every two weeks.

There is no discussion of whether good nutritional practices were advocated at the frequent visits for constipation and whether there was a therapeutic expectation for symptom resolution and improved oral intake. Finally, the determination of treatment success was based on a subjective scoring system.

The data are contrary to US data in which chronic severe constipation was associated with being overweight.<sup>1</sup> One reason for the difference could be that the US study included children with emotional/behavioral disorders.

This study reveals that there is at least a subset of children whose appetite and oral intake is negatively affected by constipation, and that resolution of the constipation promotes better appetite and improved growth.

### References

1. Misra S, et al. *JPEN*. 2006;30:81-84

**Key words:** constipation, growth, nutrition

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