

Editor's comment: This is a fascinating story with important implications for understanding bone growth. The fact that the skeletal structures formed and "grew" to close to normal length in the newborn mice null for *Cbfa1* suggests that conversion of the cartilage template to bone is not as essential for bone lengthening as many would guess. The photomicrographs suggest that new cartilage is deposited at the ends of lengthening "bone" regardless of the fate of hypertrophic cartilage in the center of the structure. This implies that the signals that drive chondrocyte proliferation and at least early hypertrophy in the growth plate are

not derived from subchondral bone, ie, from osteoblasts or other cell types that normally reside in bone marrow. However, such signals may be necessary to complete the terminal differentiation process that occurs in the growth plate, since this seemed to be lacking in the null mice. These mice should be valued for studying the events that occur at the interface between cartilage and bone in a growing bone. One wonders what the status of *Cbfa1* is in the shark skeleton.

William A. Horton, MD

Widespread Growth Retardation and Variable Growth Recovery in Foster Children in the First Year After Initial Placement

The authors hypothesized that the actual prevalence of pre-placement growth failure may be greater than that defined by a single cutoff percentile, eg, the 5th percentile, at placement. The objective was to determine the growth pattern of 45 children, 1.5 to 6.0 years of age, in the first year of foster care placement. Height, weight, weight for height, and annual growth velocity Z scores at 1 year after placement, as compared with baseline values, were used as outcome measures. All children received comprehensive medical care.

The changes in height Z scores are plotted in Figure 1. Forty-seven percent experienced catch-up growth (gain in height Z = +0.61) that equaled that seen in the first year of GH therapy in children with classic GH deficiency. The authors interpreted these data as reflecting prior growth retardation.

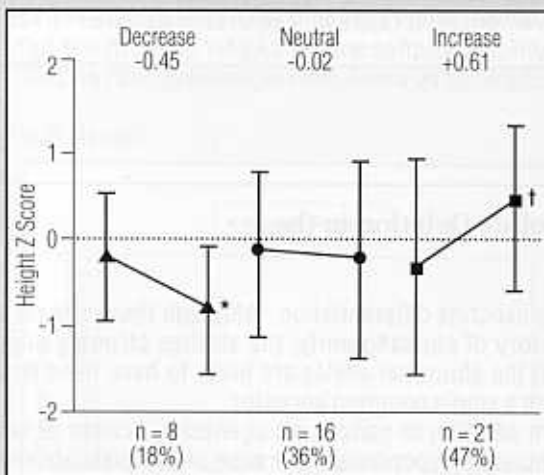
The authors drew the following conclusions: (1) Growth retardation is widespread in children placed in foster care, with almost half showing marked catch-up growth after placement; (2) initial height is not a good predictor of future growth; (3) the use of cutoff percentiles (only 5 of the 45 were <5th percentile by actual measurement at baseline) will miss the great majority of children who will show catch-up growth; and (4) the response of any given child is variable and cannot be accurately predicted by any baseline auxologic feature. In the authors' experience, 1 in 5 children in foster care experiences a significant loss in height Z score after placement, which may indicate ongoing medical or nutritional problems, unmet psychosocial needs, or failure of the foster care family. The causes of growth failure preplacement and subsequent catch-up growth are unclear, but they may be related mainly to psychosocial factors that are corrected for in some children with foster care placement.

Wyatt DT, et al. *Arch Pediatr Adolesc Med* 1997;151:813-816.

Editor's comment: These data and the conclusions reached are well documented. The authors are to be congratulated for an important clinical investigative study. The use of Z scores is essential to analyses of the data and the conclusions. The authors state that future analyses of data in this study will examine the relationships between growth and other medical, developmental, and psychologic diagnoses; the amount and type of health-care services received; changes in health and mental status; and the quality of the foster home environment. The editors of GGH encourage the authors to expedite these analyses and reports. The study of this group is exceedingly important.

Robert M. Blizzard, MD

Figure 1



Change in height Z score for each of 3 types of responders: those with a decrease (loss in height Z score of > 0.25), those with an increase (gain in height Z score of > 0.25), and those between these extremes (neutral). Asterisk indicates that median Z score is significantly different from baseline ($P=.008$); dagger, $P<.001$.

From Wyatt DT, et al. Widespread growth retardation and variable growth recovery in foster children in the first year after initial placement. *Arch Pediatr Adolesc Med* 1997;151:815. Copyright 1997. American Medical Association.