

EXTREMELY LOW BODY MASS INDEX NEGATIVELY IMPACT THE RESPONSE TO GROWTH HORMONE TREATMENT IN CHILDREN WITH GROWTH HORMONE DEFICIENCY

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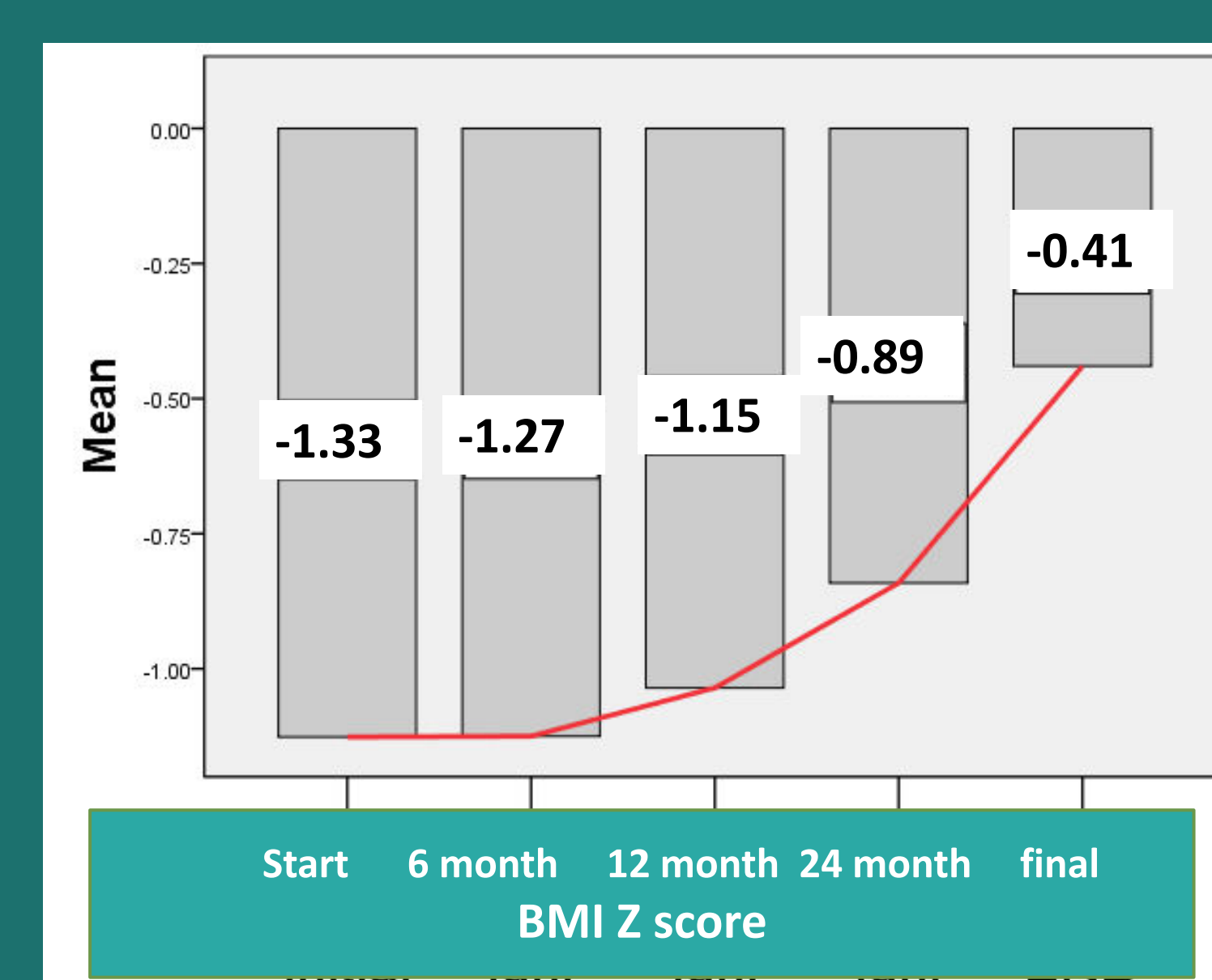
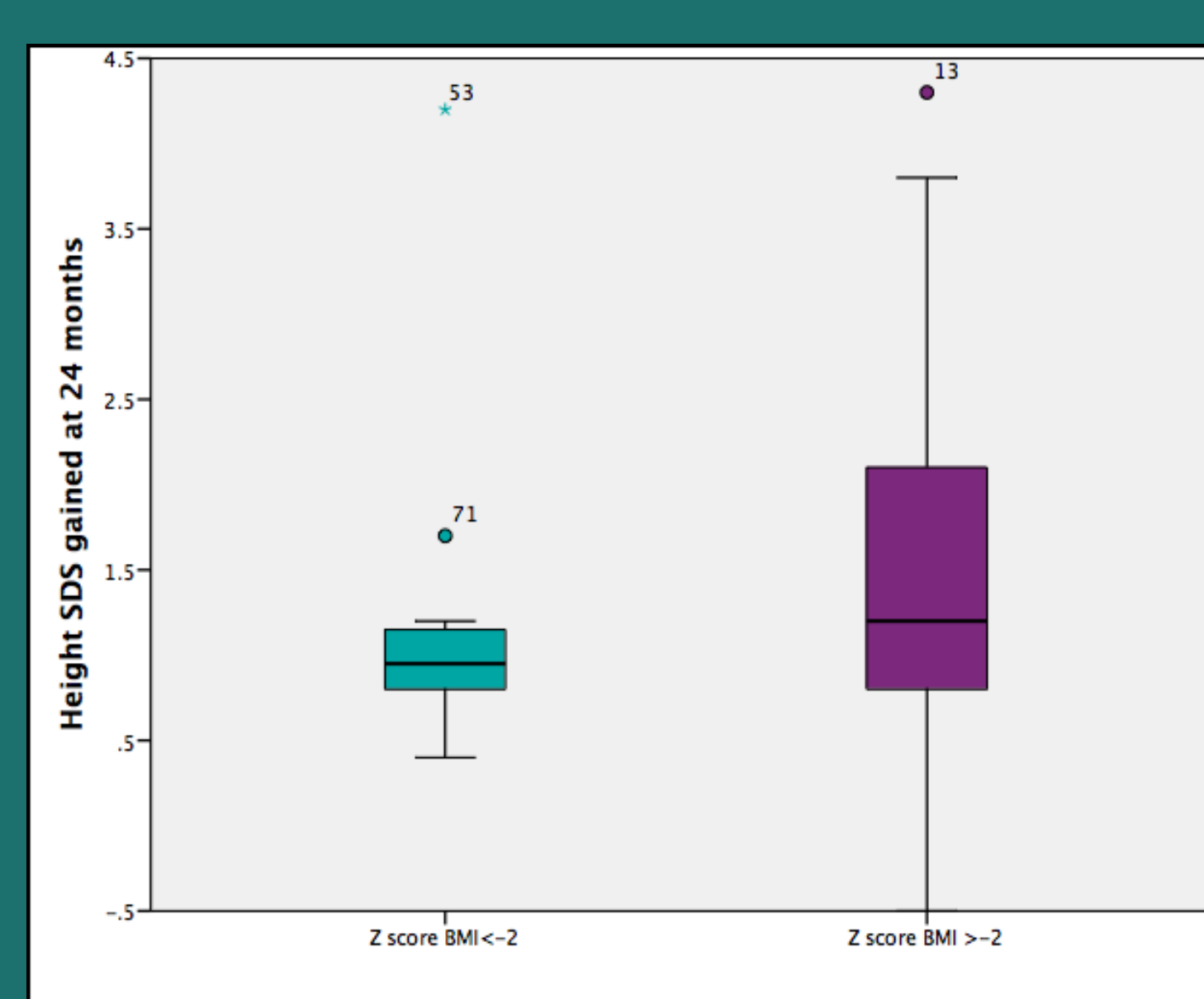
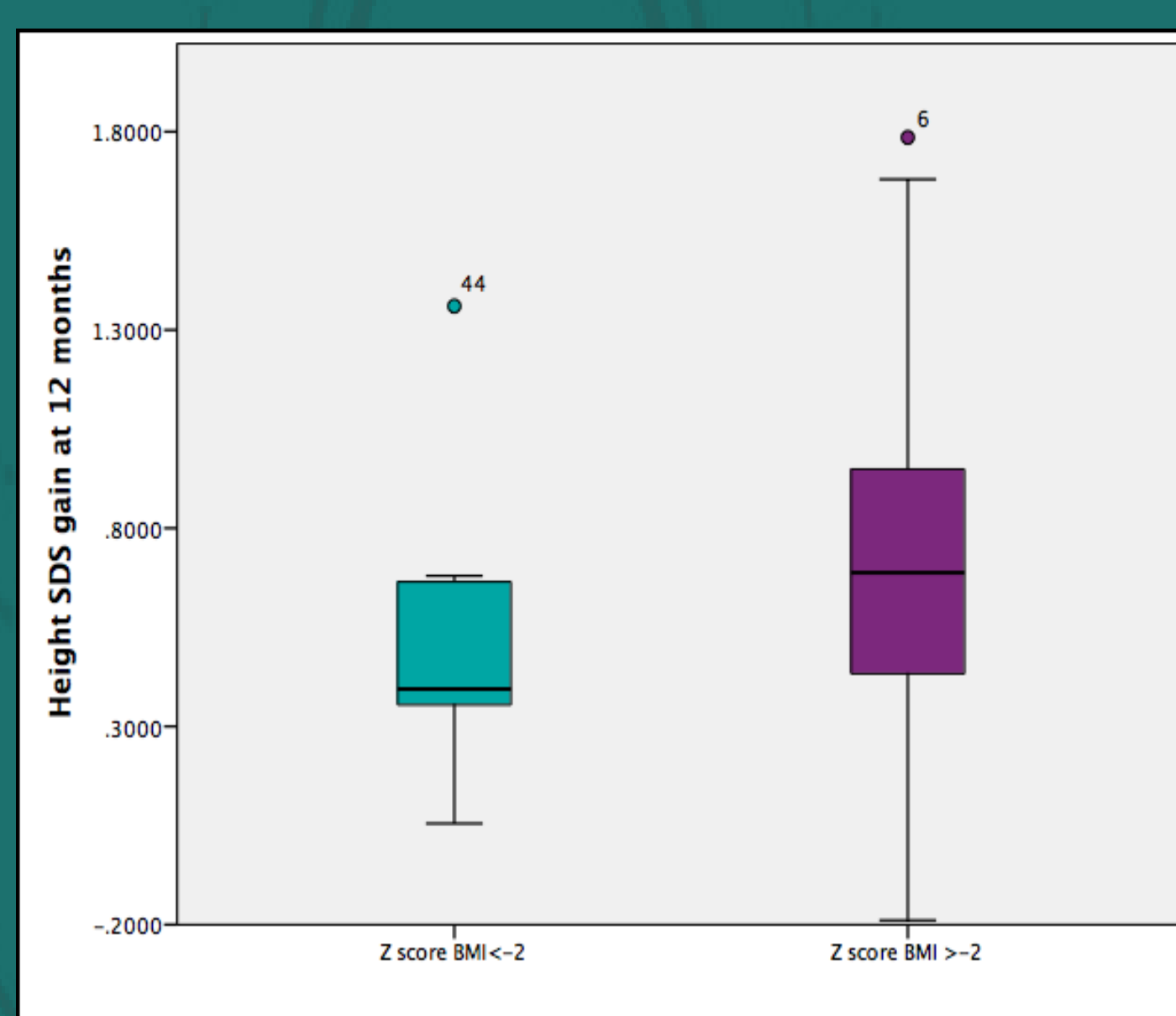
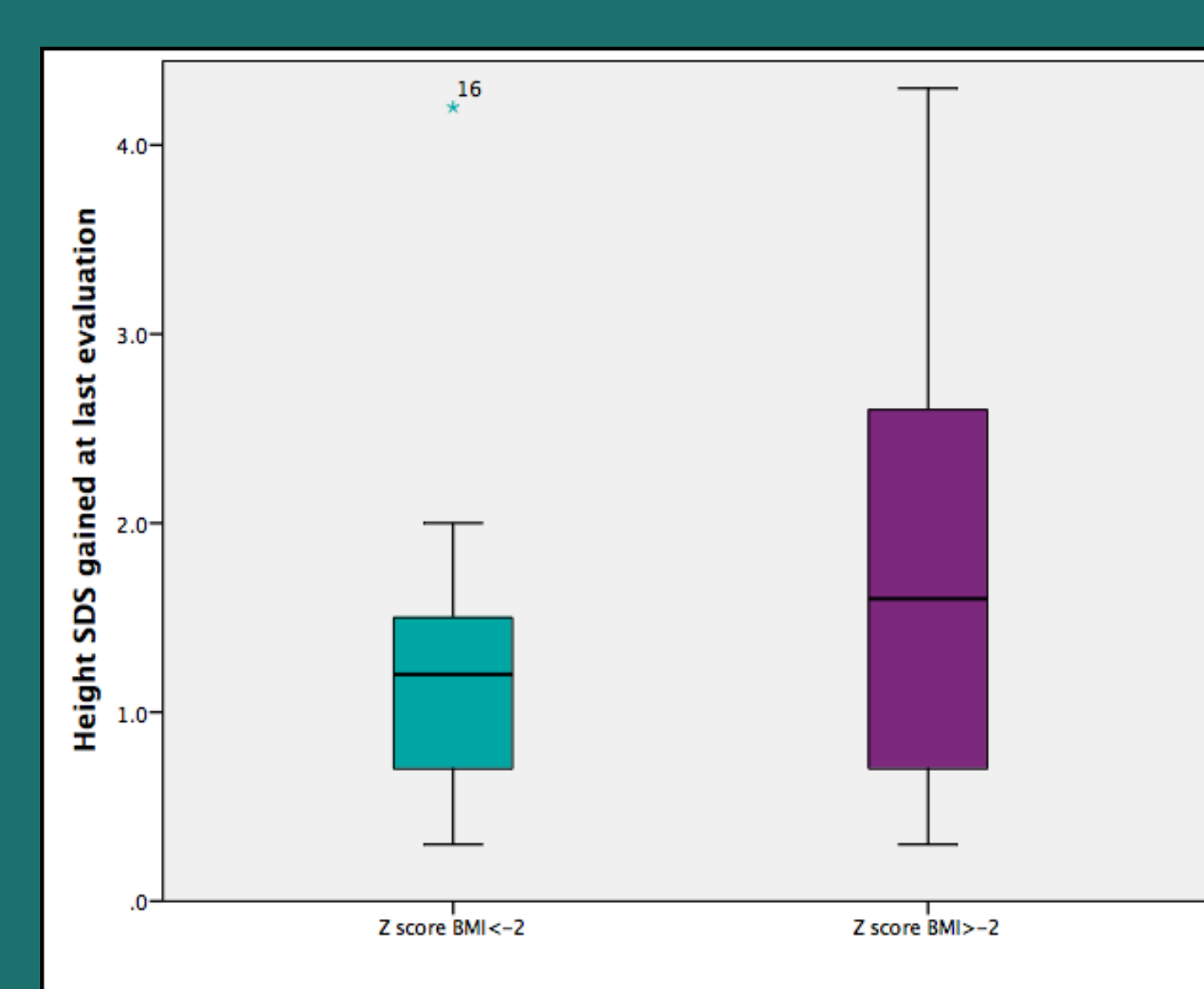
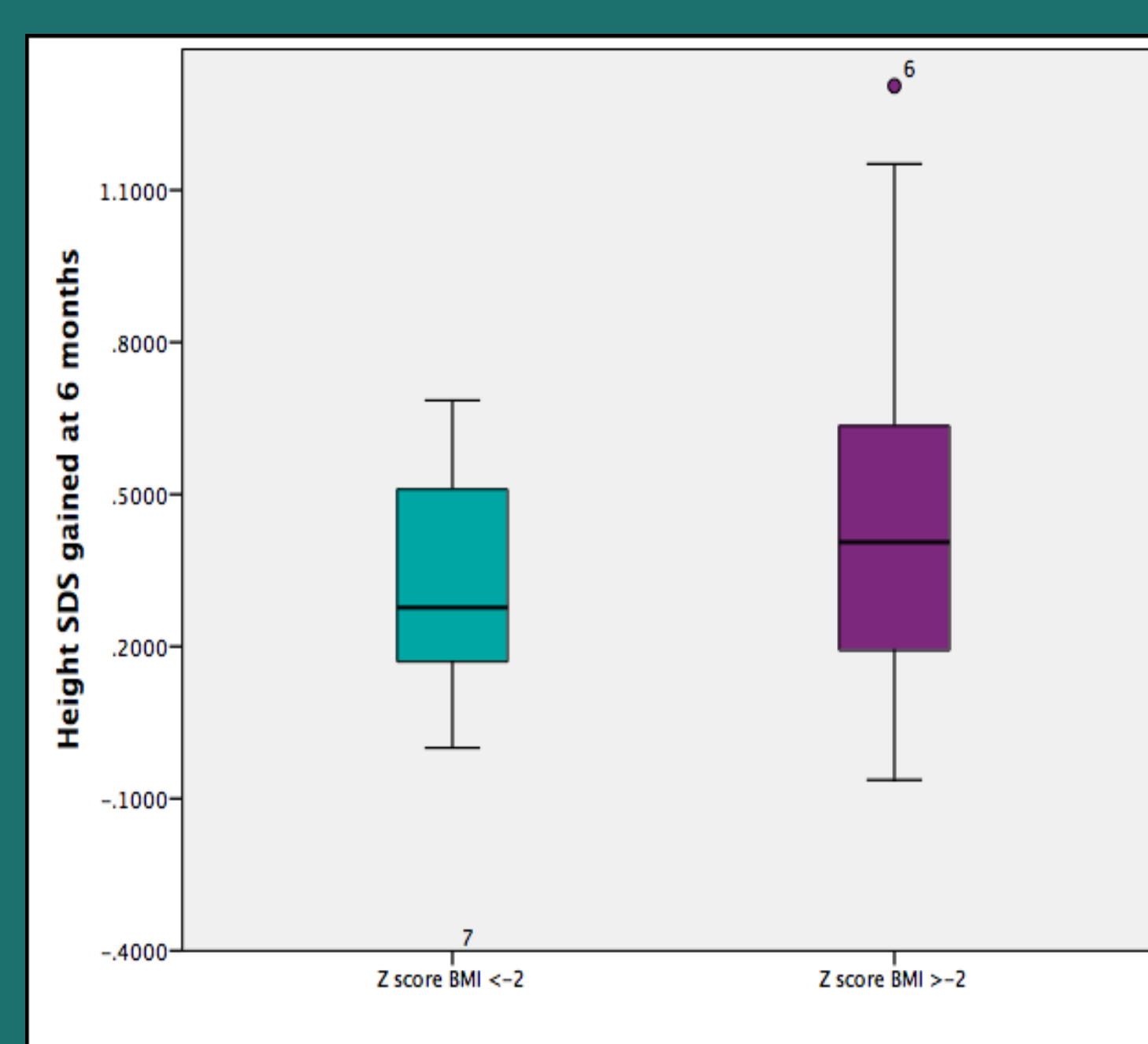
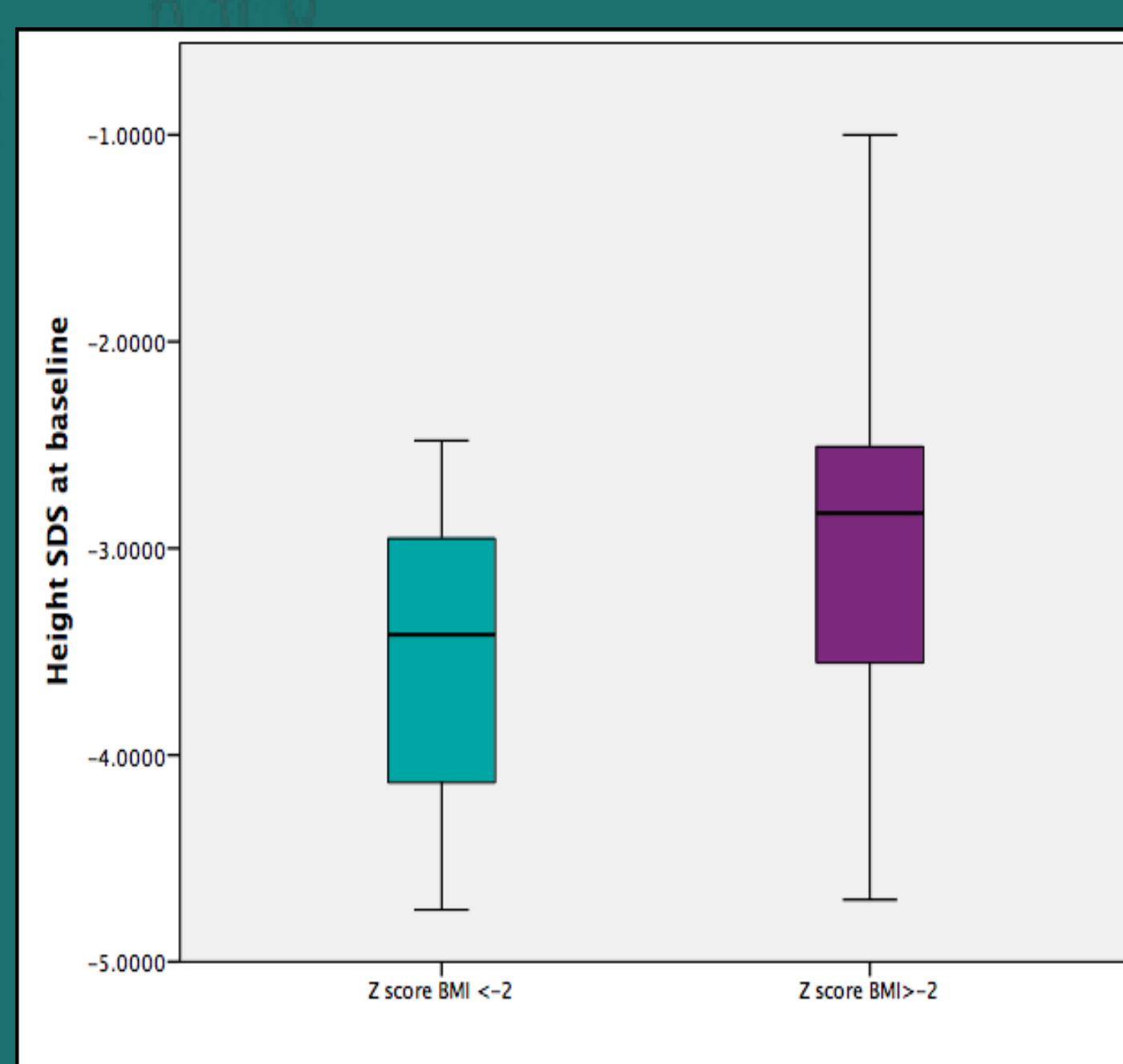
INTRODUCTION: the nutritional status of a child is essential for the overall development and in particular for the statural growth. it was previously reported that growth hormone (GH) administration in children with growth hormone deficiency (GHD) could have a beneficial effect on body mass index (BMI) in both underweight and overweight children, suggesting a complex interplay between nutrition and growth

AIM: to analyze the influence of BMI on the response to GH treatment in children with GHD and the evolution of BMI under treatment.

MATERIAL AND METHODS: we performed a retrospective study which included 154 children with GHD (69,5% boys, 30,5% girls) with a mean age at diagnosis of 8.39±3.6 years, treated for 3.16 years with GH. Standard deviation score (SDS) for BMI was calculated at 6, 12, 24 months of treatment and at the last evaluation. Patients were divided in groups according to SDS for BMI: ≤ -2 SD (group 1, n=27) and > -2 SD (group 2, n=127). Statural growth was evaluated by SDS for height and gain in height SDS. Comparisons between groups were performed by Mann-Whitney-U test. evolution of BMI SDS during treatment was analyzed with paired student t-test.

RESULTS: at the beginning of the treatment the mean height SDS was -3.14 SD and mean BMI was -1.06 SD. Patients in group 1 had significantly lower gain in height SDS at 6 (p=0.002), 12 (p=0.002) and 24 months (p=0.027) in comparison to children in group 2. Also, at the final evaluation the mean gain in height SDS/year of treatment was lower in group 1 (p=0.011). We also noticed that BMI SDS gradually improved during treatment period (- 1.33 SD at the start of treatment, - 1.27 SD at 6 months, -1.15 SD at 12 months, -0.89 SD at 24 months, -0.41 SD at the final evaluation, p<0.05 versus baseline).

IN CONCLUSION, our study showed that extremely low BMI can negatively impact the response to GH treatment in children with GHD. However, GH administration was associated with a gradual improvement in BMI SDS during treatment.



1. Body Mass Index in Growth Hormone Deficient Children before and during Growth Hormone Treatment Baars J.a,b · van den Broeck J.a,b · le Cessie S.c · Massa G.a,b · Wit J.M.b
2. 'Surprising' effect of growth hormone on BMI in normalweight children, Eleanor McDermid.