

Linear Growth of Children with Celiac Disease (CD) after the first two years on a Gluten-free Diet (GFD); A Controlled Study

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Introduction

Celiac disease (CD) is a systemic immune-mediated disorder triggered by dietary gluten in genetically susceptible subjects. Celiac disease is a lifelong disorder with gluten-induced manifestations in different organs especially growth. Gluten free diet is required to achieve remission and prevent abnormal growth.

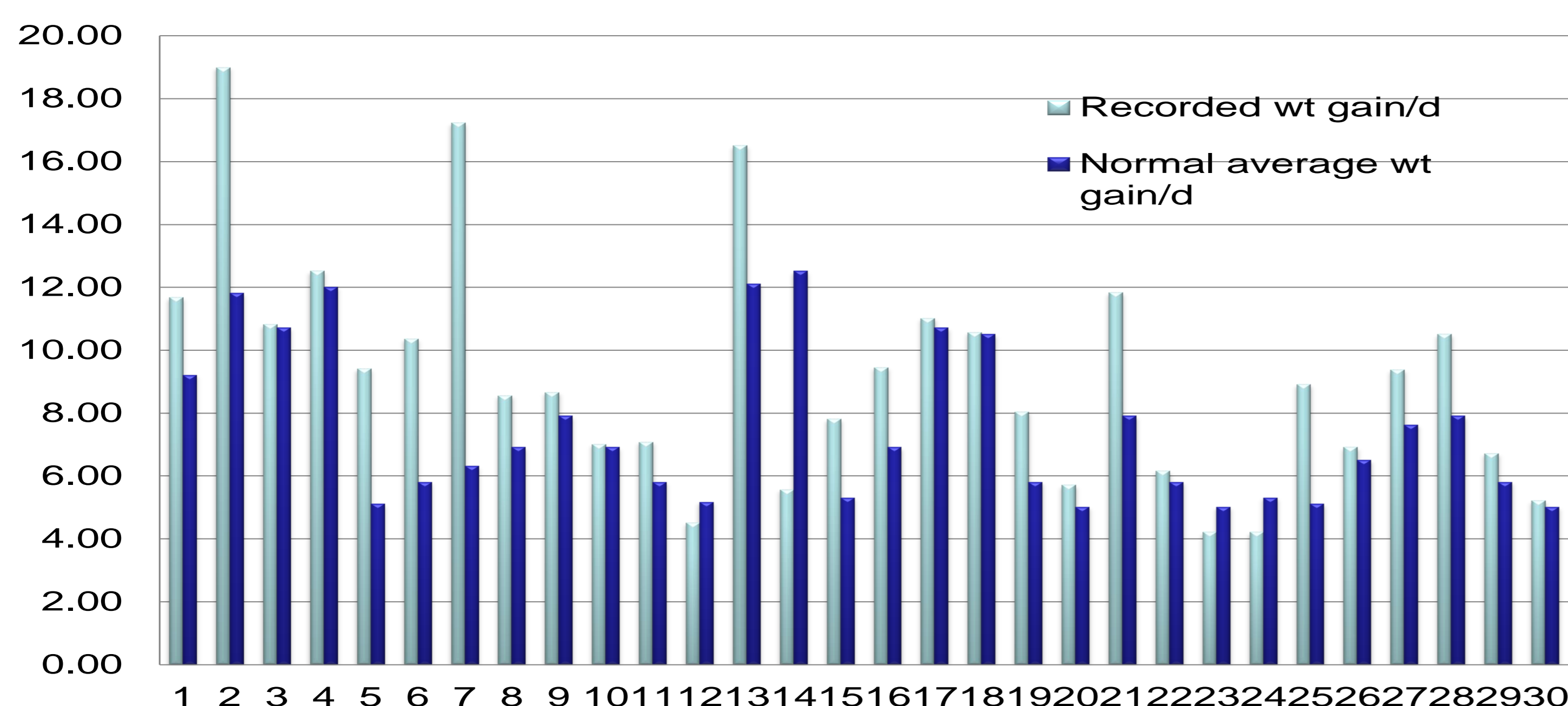
Aim : To measure linear growth in children with Celiac Disease on long term GFD (more than 2 years)

Methodology

- 30 patients diagnosed by serology test and histology vs 30 normal children
- Anthropometrics measurements (weight gain/day, BMI and BMISDS, HtSDS)
- Labs : Albumin, Ferritin, calcium, Vit D, ALT, AST, Hemoglobin, iron.
- Duration : one year (from 2016-2017)

Results

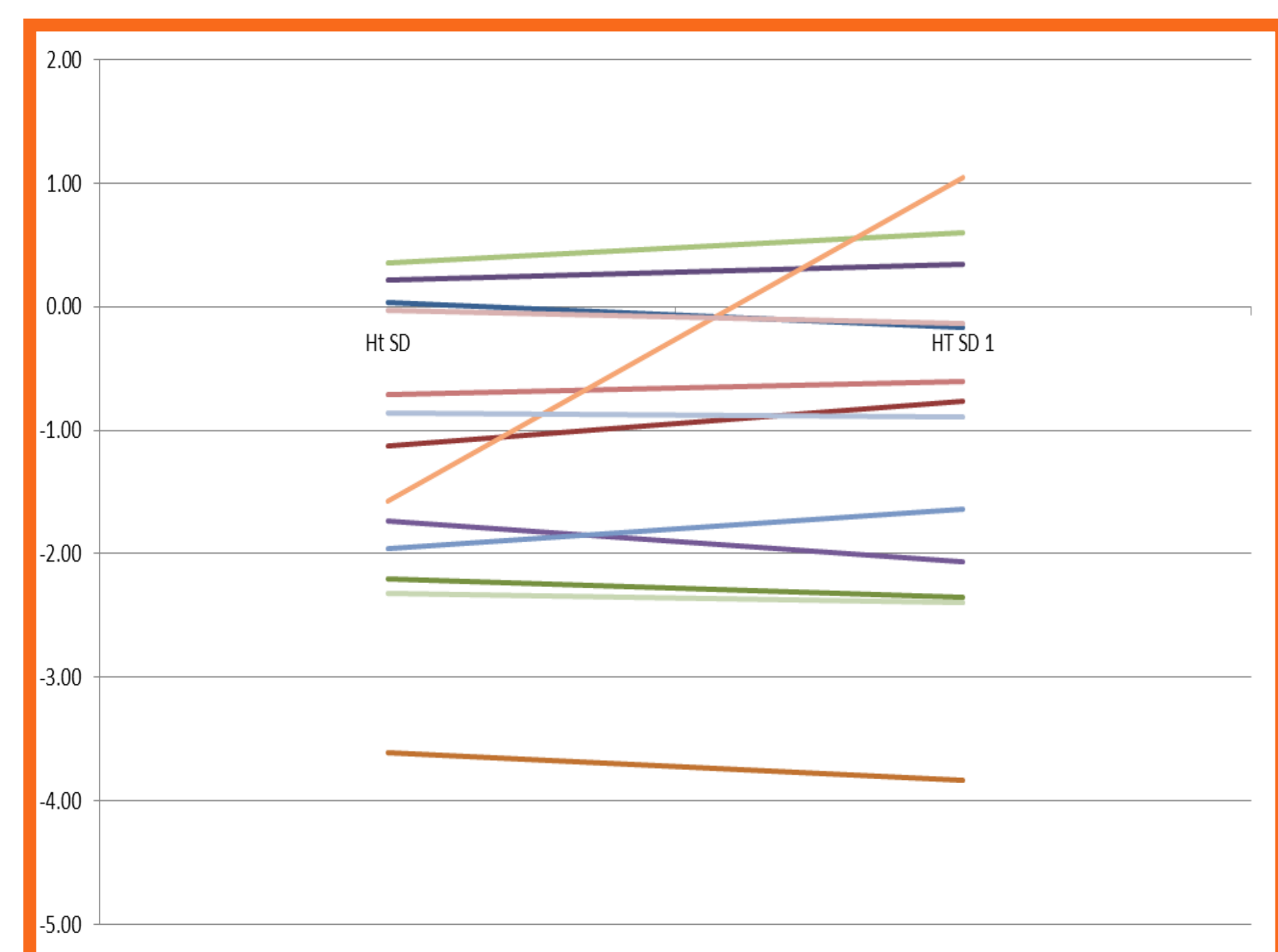
- Daily weight gain compare to average normal weight gain for age and sex in celiac disease children on gluten free diet during follow-up (1 year)



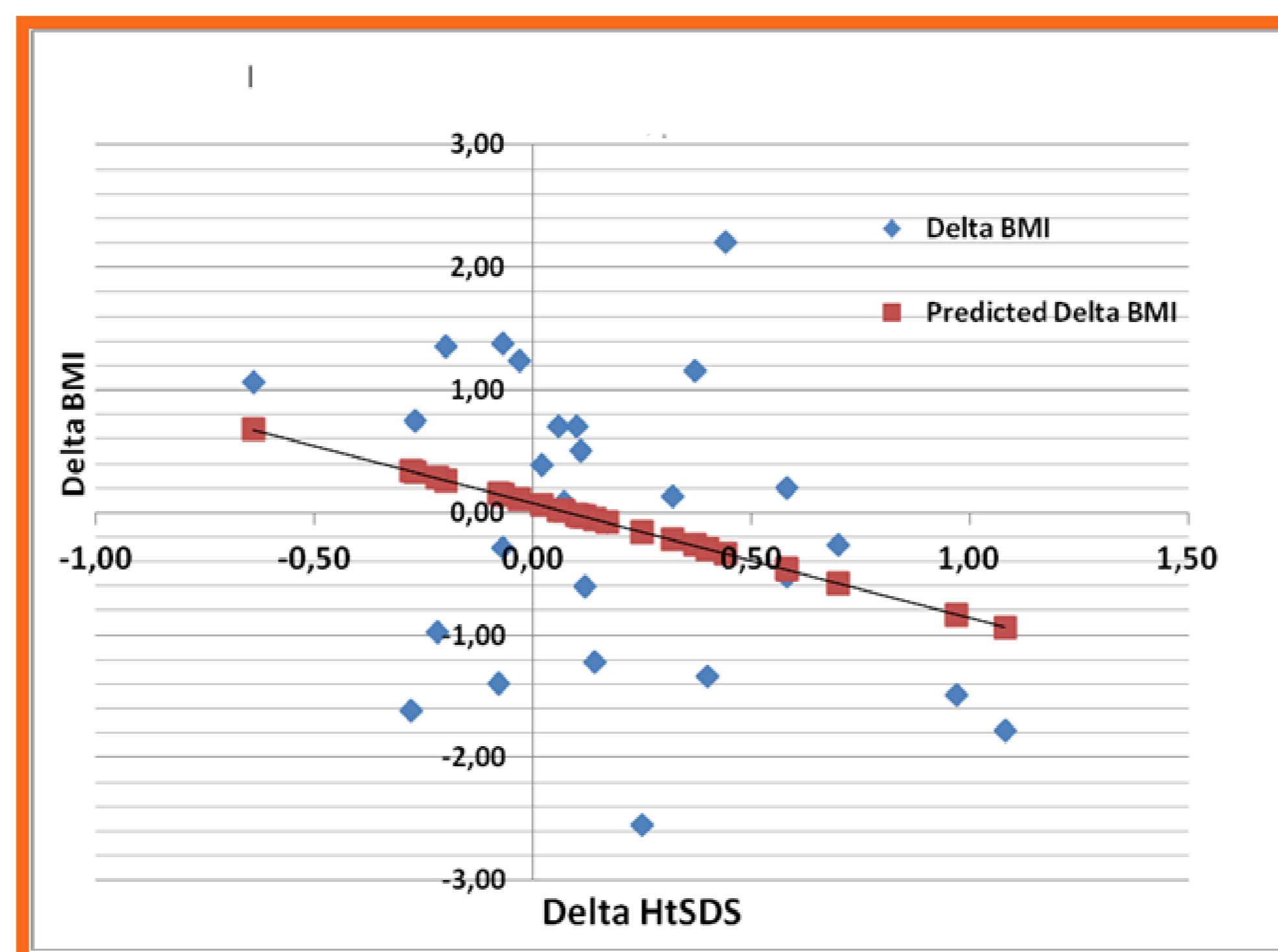
Growth data before vs after a year of follow-up in CD patients and controls.

	CD-Before	CD-After	C-Before	C-After
Age (years)	7.4	8.3	6.7	6.8
Ht-SDS	-0.3	-0.2	0.1	0.1
BMI	16.2	16.2	16.1	16.0
BMI-SDS	0.3	-0.3	# 0.2	0.06

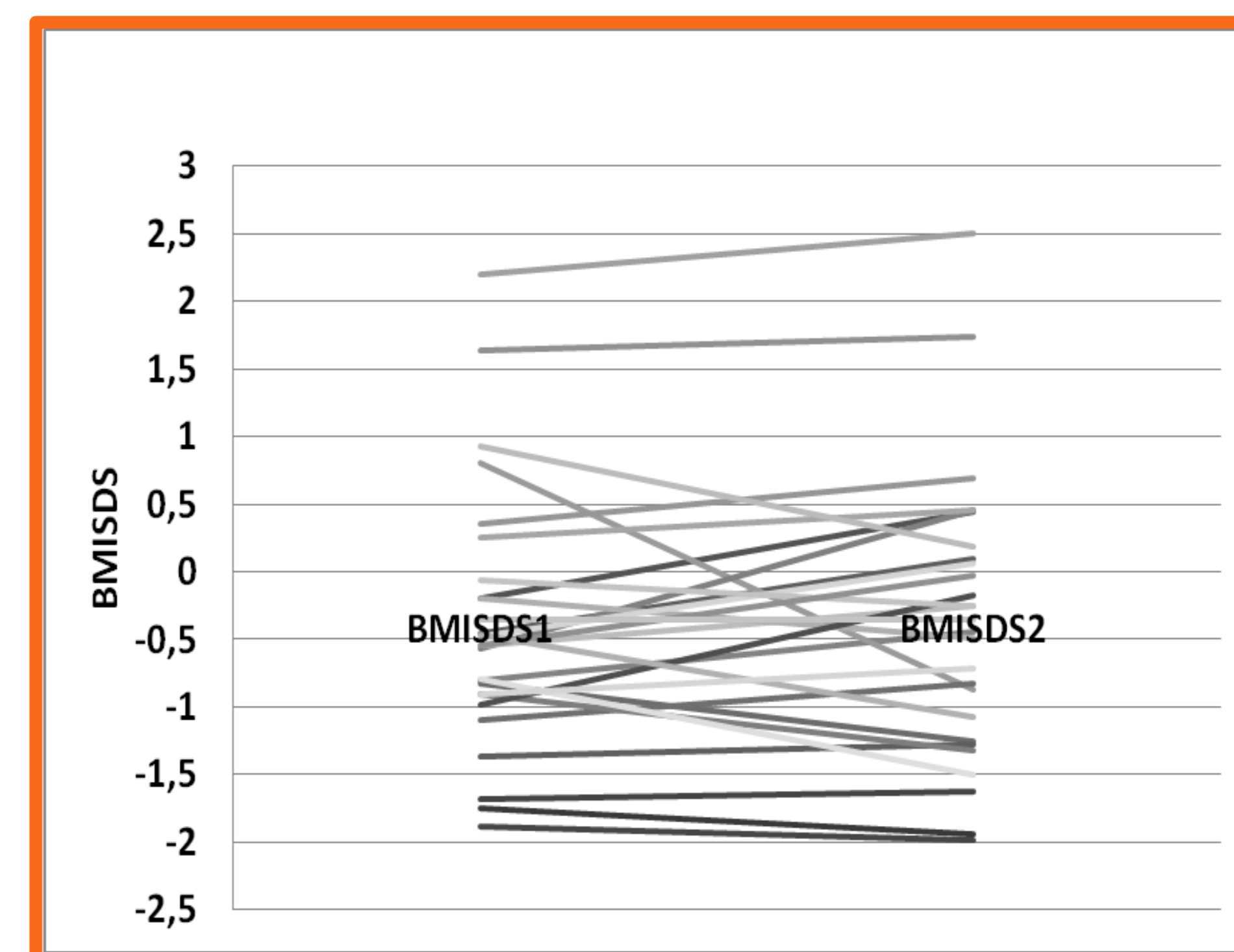
Legend: CD = Celiac disease, C = controls;
 *p<0.5 before vs after 1 year of follow up (Mann-Whitney U Test),
 # p < 0.05 CD vs controls after 1 year of follow up (Mann-Whitney U Test)



Ht-SDS changes in children with CD on GFD during follow-up.
 (0- Before follow up, 1- After a year of follow up)



Correlation between Δ height-SDS and Δ BMI
 $R = 0.45, p < 0.05$



BMI-SDS changes in children with CD on GFD during follow-up.
 (1- Before follow up, 2- After a year of follow up)

Conclusion

Most of children with CD grew normally both in Ht and Wt. on GFD. Catch-up growth still occurs in some of them after 2 years of being on GFD. All had normal Hb. and albumin level.

Those with low BMISDS and/or HtSDS need further management including reinforcement on following strictly the GFD and investigating other factors that might affect growth pattern

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