

# The Prevalence of Celiac Disease (CD) in Children with Type 1 Diabetes Mellitus (T1D); Does CD adversely affect linear growth in these children?

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## Introduction and Objective

The prevalence of biopsy-proven CD in T1D in pediatric populations widely ranges between 2.6 % in Finland to 16.4% in Algeria.

Many patients with CD and T1D are either asymptomatic (silent CD) or present with only mild symptoms. CD children may be less likely to show overt growth failure but can have weight and height measures at a lower growth percentile and complain of nonspecific symptoms, including anorexia and lassitude.

### Objective :

We conducted this study to measure the prevalence of CD in the newly diagnosed T1D and compared their growth to T1D without CD.

## Patients and Methods

This cross-sectional study measured the prevalence of positive serology test and biopsy-proven CD in a large cohort of children T1D (n = 365) followed at HGH OPC department, Doha Qatar between 2012-2017 and compared their growth parameters on the first diagnosis with the growth of children with T1D without CD.

## Results

The prevalence of CD was 3% in our children with T1DM. Obese children with T1DM and positive for CD were short with HSDS < -2. T1DM with negative celiac screening had normal height for age.

All T1DM children who were positive for ATT IgA and IgG had biopsy proven CD.

## Conclusions

The prevalence of biopsy-proven CD in our DM cohort was 3 %.

Their BMISDS and HtSDS did not differ compared to controls with T1DM.

However, children with T1D + CD had higher % of short stature compared to T1D.

## Results

Celiac Diagnostic criteria	Positive	Prevalence
Total TTG positive	28/365	7.67 %
ATT IgA	18/365	5%
ATT IgG	16/365	4.38%
Both ATT IgA and IgG	11/365	3%
Biopsy proved	11/28 (39%)	3 %

Table 1: Prevalence of CD in T1DM according to diagnostic criteria

	T1DM +CD N = 11	T1D N = 50
Age (yr)	7.99 +/- 3.5	9.1 +/- 4.2
BMISD (mean +/-SD)	-0.077 +/- 1.72	0.089 +/- 1.39
BMISD > 2 SD	2/17 = 11.76	3/50 = 6%
BMISD (-1.5 to 1.5)	12/17 = 70 %	37/50 = 75 %
BMISDS (-1.5- -2)	2/17 = 11.76 %	4/50 = 8 %
BMISDS < -2	2/17 = 11.76 %	2/50 = 4 %
HSDS (mean +/- SD)	0.33 +/- 1.40	0.27 +/- 1.29
HSDS = or > 2	0/17 = 0 %	5/50 = 10 %
HSDS (-2 to +2)	14/17 = 82 %	44/50 = 88 %
HSDS < -2	3/17 = 17.64%*	1/50 = 2%

Table 2: Anthropometry for T1D, versus T1DM +CD. (\* P < 0.05)

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