

## February 02/10: Antibodies in Celiac Patients Younger than 2 Years of Age

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**Serum and intestinal celiac disease-associated antibodies in children with celiac disease younger than 2 years of age**

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**Introduction:** The classical serological test for the diagnosis of celiac disease is anti-tissue transglutaminase (anti-tTG) of the IgA isotype. The specificity and sensitivity of this test is so high that it was even suggested that diagnostic guidelines could be modified so that a small bowel biopsy is no longer regarded as mandatory in patients with very high transglutaminase antibody levels. However, in children younger than 2 years of age, it was shown earlier that anti-tTG has a lower sensitivity than anti-gliadin antibodies, which underlines the importance of gliadin antibody testing.

**Patients and Methods:** A total of 104 children younger than 2 years of age and 179 children older than 2 years, all of whom had been diagnosed with celiac disease, were investigated for anti-gliadin IgA and IgG and anti-tTG IgA (all tests were provided by Eurospital, Italy).

Additionally, the presence of intestinal anti-tTG extracellular IgA deposits was looked for using double immunofluorescence.

### Results:

Celiac children	Anti-gliadin IgA	Anti-gliadin IgG	EMA	Anti-tTG IgA	Mucosal anti-tTG-IgA deposits
< 2 years old	89 %	94 %	88 %	87 %	73 %
> 2 years old	67 %	84 %	98 %	96 %	100 %

**Conclusion:** EMA and anti-tTG measurements show higher sensitivity for the diagnosis of CD in children older than 2 years compared to younger children. The search for mucosal deposits of anti-tTG-IgA does not improve the diagnostic performance.

**Comment:** Several publications showed that anti-tTG IgA are less sensitive in very young children than anti-gliadin antibodies (e.g. Lagerqvist et al, *J Pediatr Gastroenterol Nutr* 2008; 47:428-35). On the other hand, anti-gliadin antibodies are known to be much less specific and particularly in small children they may often occur transiently. A new generation of anti-gliadin antibody assays has been developed to detect antibodies to synthetic deamidated gliadin peptides, such as EliA Gliadin<sup>DP</sup>. Our internal clinical study using samples of 122 children below 2 years of age with biopsy proven celiac disease showed that also EliA Gliadin<sup>DP</sup> has a higher sensitivity than anti-tTG (EliA Celikey) in very young children:

n	Age	EliA Gliadin <sup>DP</sup> IgA	EliA Gliadin <sup>DP</sup> IgG	EliA Celikey IgA
29	< 12 months	100 %	96.6 %	72.4 %
68	12-18 months	95.6 %	95.6 %	92.6 %
25	18-24 months	100 %	100 %	100 %

