

CHE RISCHIO DI CELIACHIA ?

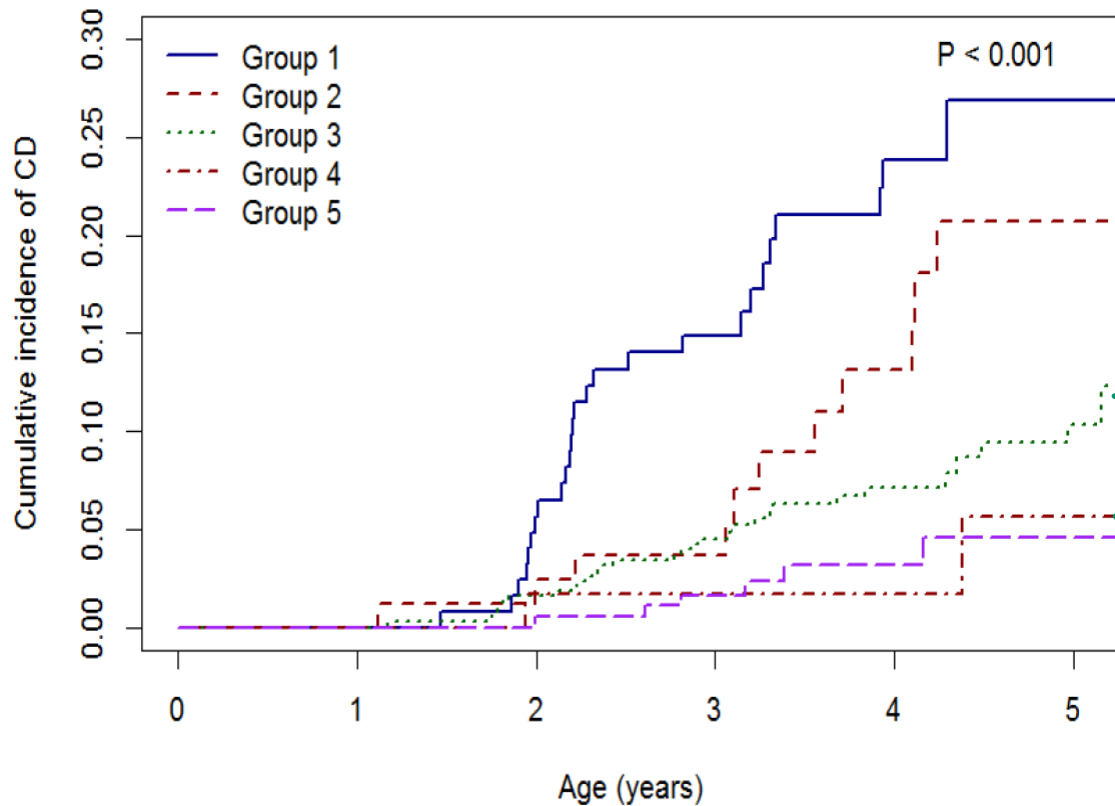
Naples, January 30° 2024

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Rischio maggiore nei soggetti doppia dose di DQ2 (HLA class 1 risk): 14.9% a 3 anni e 26.9% a 5 anni.



DQ2/
DQ2

DQ2/
DR5/7

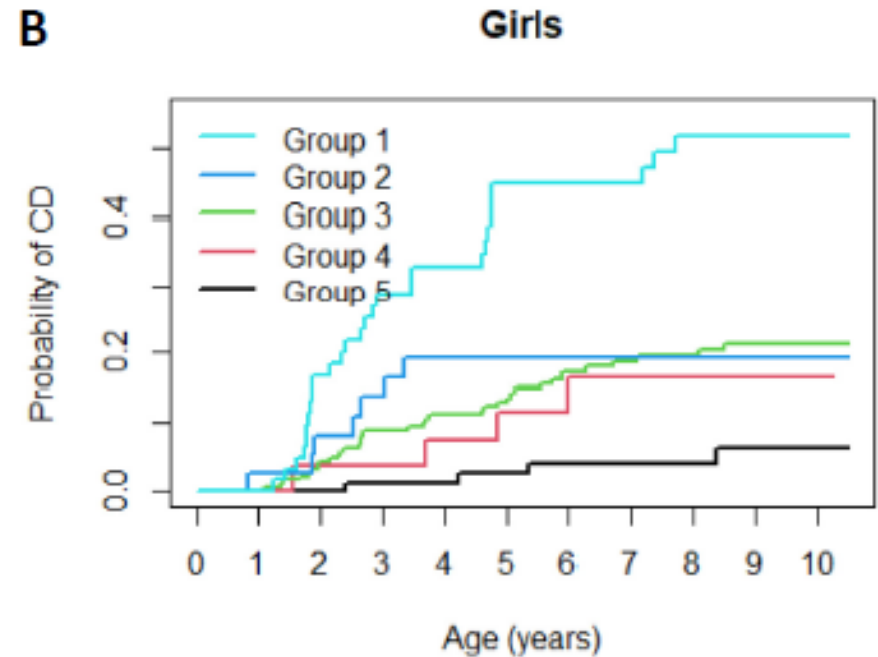
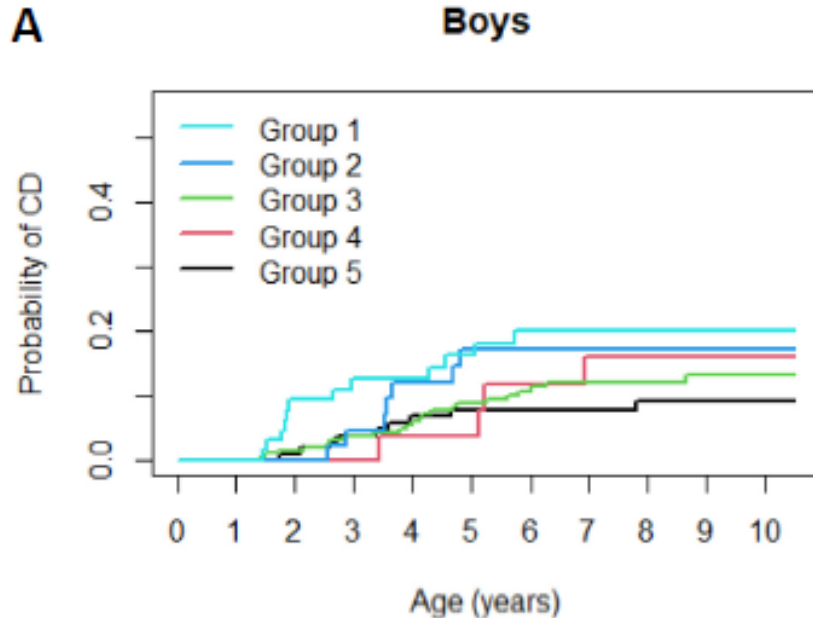
DQ2/
DQX

DQ8/

Events/At risk

| | | | | | | |
|----------|-----|-------|-------|--------|-------|------|
| Group 1: | 129 | 0/127 | 7/114 | 11/92 | 7/49 | 1/18 |
| Group 2: | 88 | 0/85 | 2/79 | 1/69 | 5/40 | 3/22 |
| Group 3: | 417 | 0/388 | 6/373 | 11/313 | 7/205 | 4/85 |
| Group 4: | 66 | 0/60 | 1/57 | 0/48 | 0/34 | 1/16 |
| Group 5: | 211 | 0/195 | 1/187 | 2/163 | 2/98 | 1/41 |

Biomarkers-pre weaning: gender



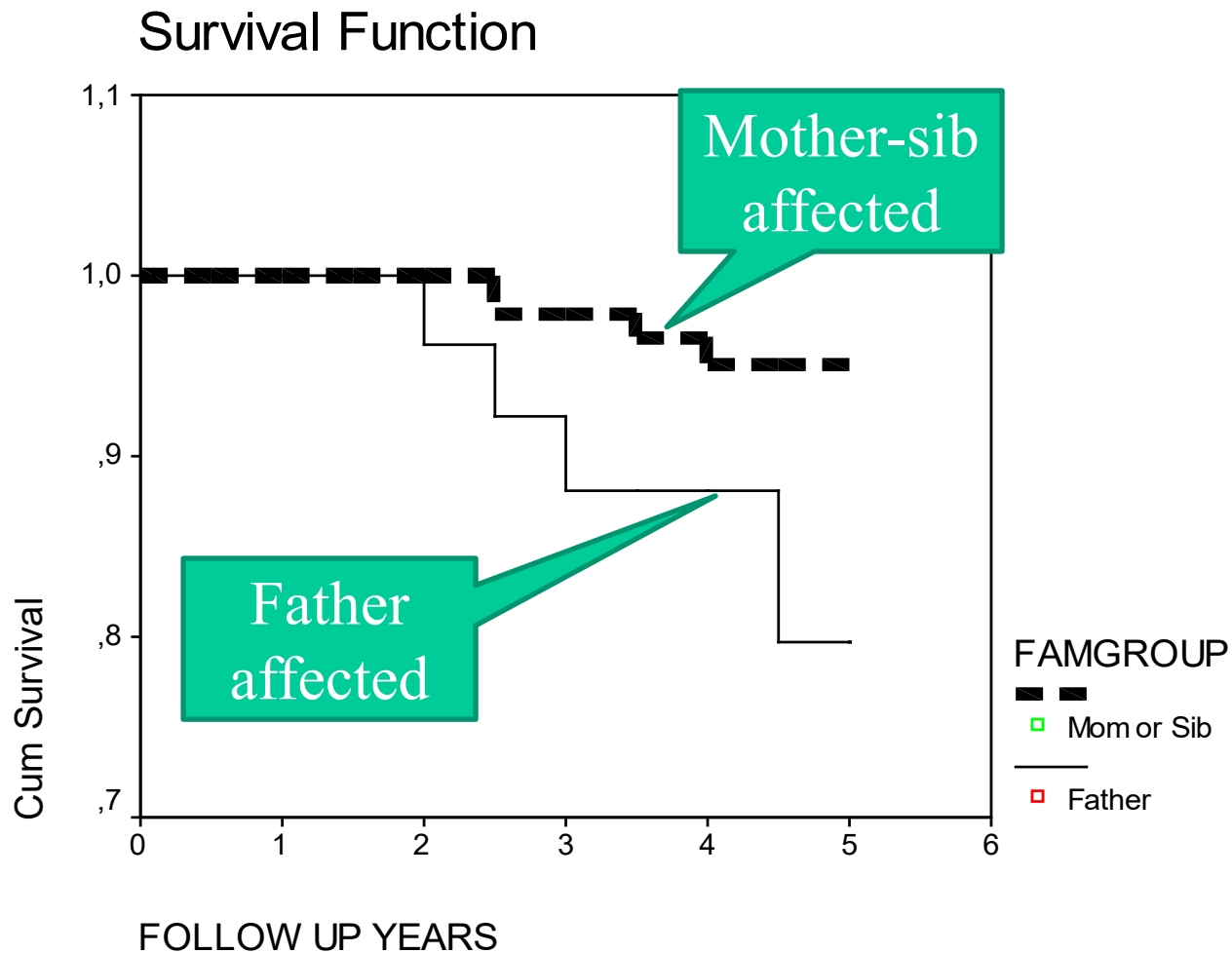
Female is more at risk compared to male,
considering also HLA Aplotypes



Fattori rischio correlati alla celiachia:

1. Placenta
2. Infezioni neonatali
3. Tipo di parto
4. Mese nascita
5. Peso nascita
6. Parente affetto
7. Infezioni nei primi mesi di vita (RSV, bronchioliti, gastroenteriti)
8. Infezione HP
9. Infezione HBV
10. Farmaci (antibiotici, IPP, suppl. ferro donne gravide)

Risk to be free from disease in the PREVENT-CD Study 200 Families



Breast feeding in cases and controls

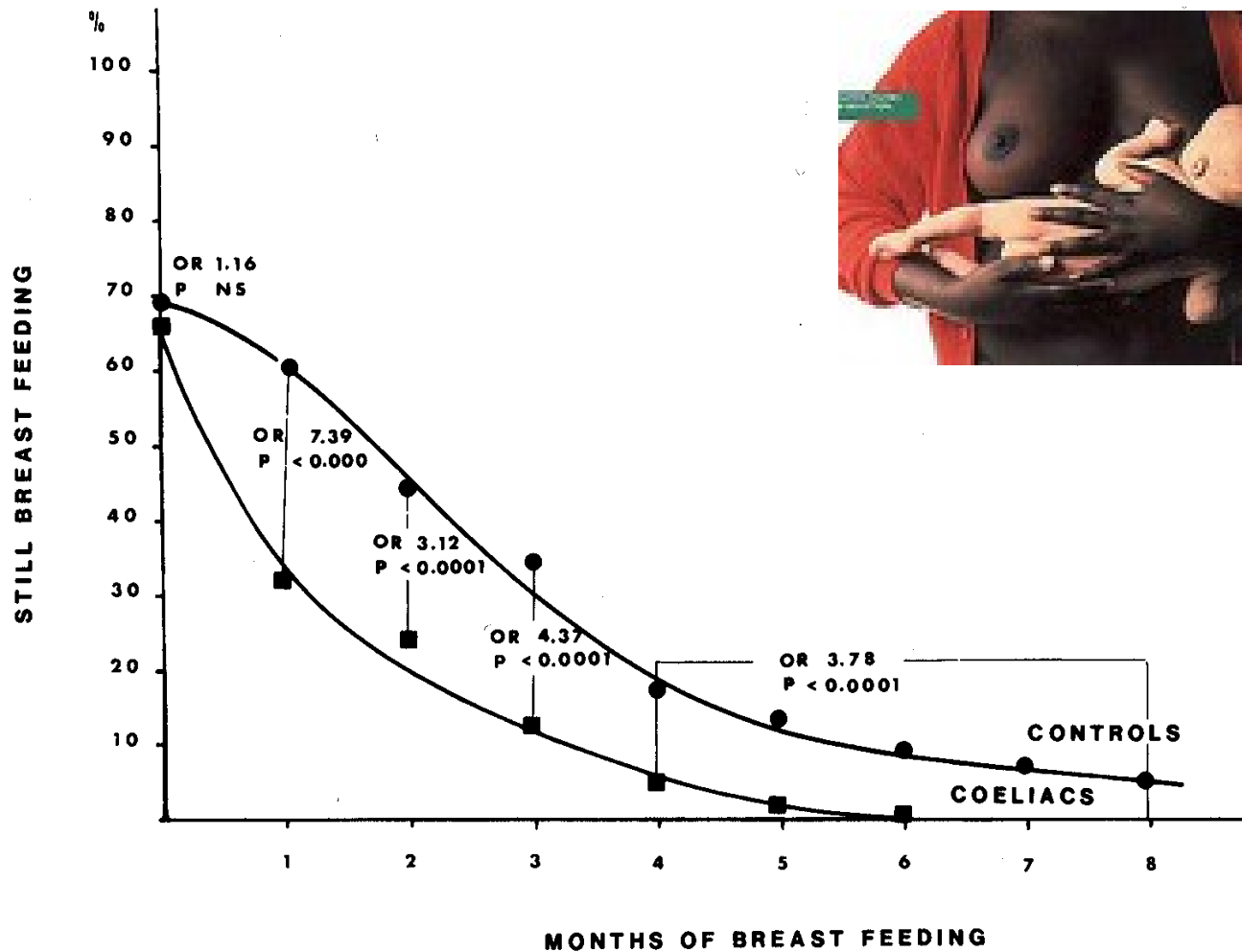


FIG. 1. Duration of breast feeding in patients and in controls.



OPEN

Gluten consumption and inflammation affect the development of celiac disease in at-risk children

Aurichio Renata^{1,2}✉, Calabrese Ilaria³, Galatola Martina¹, Cielo Donatella¹, Carbone Fortunata^{4,5}, Mancuso Marianna¹, Matarese Giuseppe^{4,6}, Troncone Riccardo^{1,2}, Aurichio Salvatore² & Greco Luigi²

Gene expression, lipidomic and growth impairment findings suggest that the natural history of celiac disease (CD) starts before the gluten-induced immune response. Gluten intake in the first years of life is a controversial risk factor. We aimed to estimate the risk of developing CD associated with the amount of gluten intake and the serum inflammatory profile in genetically predisposed infants. From an Italian cohort of children at risk for CD, we enrolled 27 children who developed CD (cases) and 56 controls matched by sex and age. A dietary interview at 9, 12, 18, 24 and 36 months was performed.

Amount of gluten

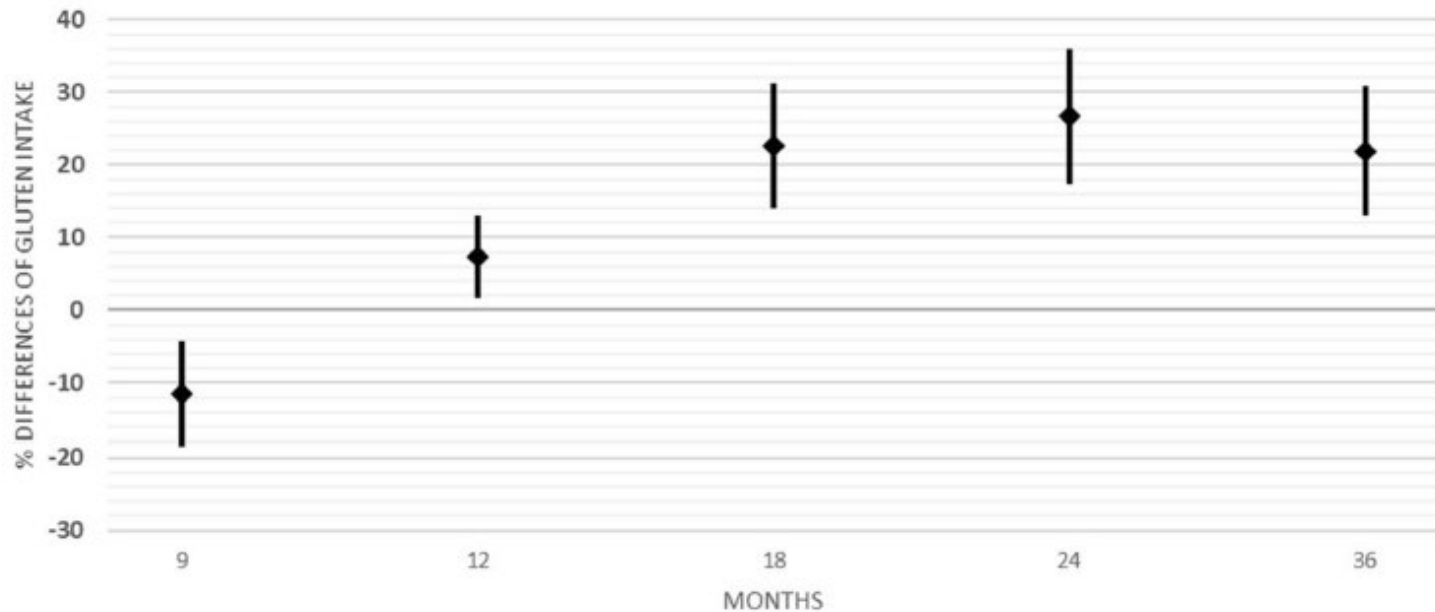


Figure 2. Differences between the means (± 95 C.I.) in gluten intake per kg/day between celiac disease (CD) cases and controls (CTRLs) at 9, 12, 18, 24 and 36 months.

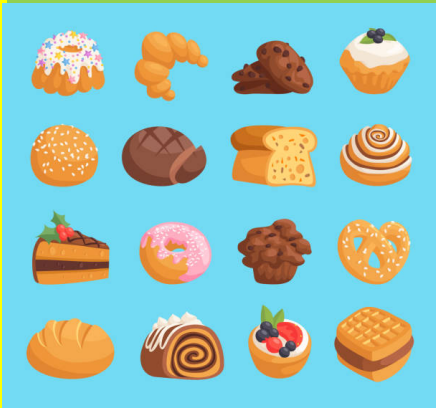
Celiacs ate higher doses of gluten in the first two years of life compared to controls.



How much more Gluten in CD?

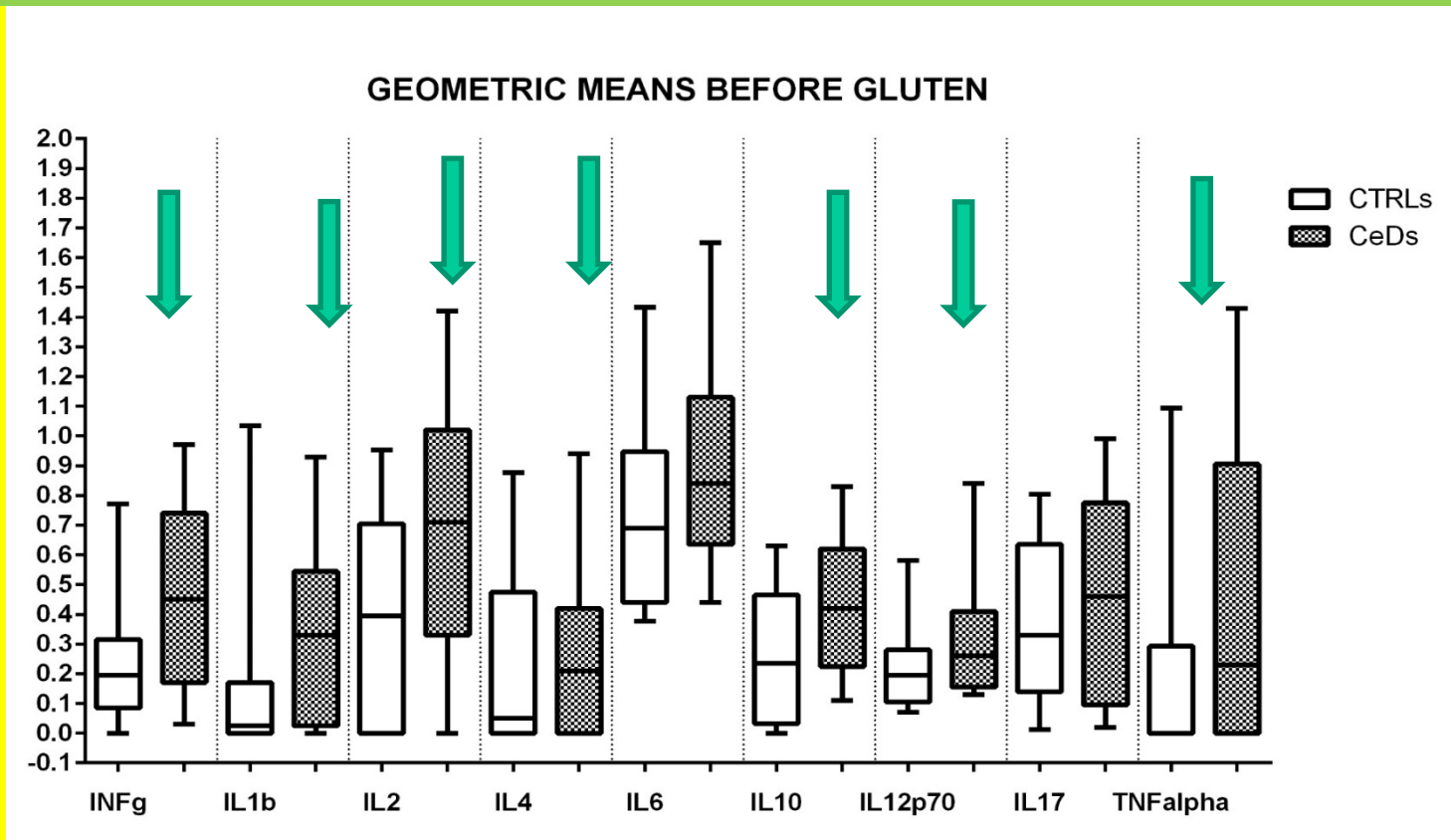
- the intake of gluten from 12 to 24 months in CD increased to a mean of 5.31 grams/day (CI 3.76-6.87), while CTRLs increased to 2.61 grams/day (CI 1.88-3.35), Student t = -3.6 p = 0.001).
- We grouped the children according to the 1st and 3rd quartile (1.71 and 5.53) of gluten increment in the second year .
- 75 % of CD showed an increment in the intake of gluten in the highest quartile compared to 32% of CTRLs, producing an Odds Ratio 6,37 (CI 1,55-26,1).
- In conclusion at risk children who eat 5 or more gr gluten/day show a 5 fold risk to become celiacs

Chi diventa celiaco ha mangiato molto più glutine a 2-3 anni di chi non lo diventa



- **The above average intake of carbohydrates in CD was related to higher consumption of biscuits (up to 16/day), pizza, confectionery, cakes, snacks and fruit juices.**
- The lower intake of saturated and monounsaturated fatty acid in CD appear to be mostly related to lower intake of milk, parmesan cheese added to soups, ricotta cheese and fresh cheese.
- The lower intake of cellulose is related to low intake of legumes, vegetables and fruits, frequently observed in CD.

A 4 mesi i bimbi che diventeranno celiaco hanno un profilo serico di citochine infiammatorie prima del glutine



Il profilo citochinico infiammatorio prima della diagnosi è correlato alla quantità di glutine nel 2° anno

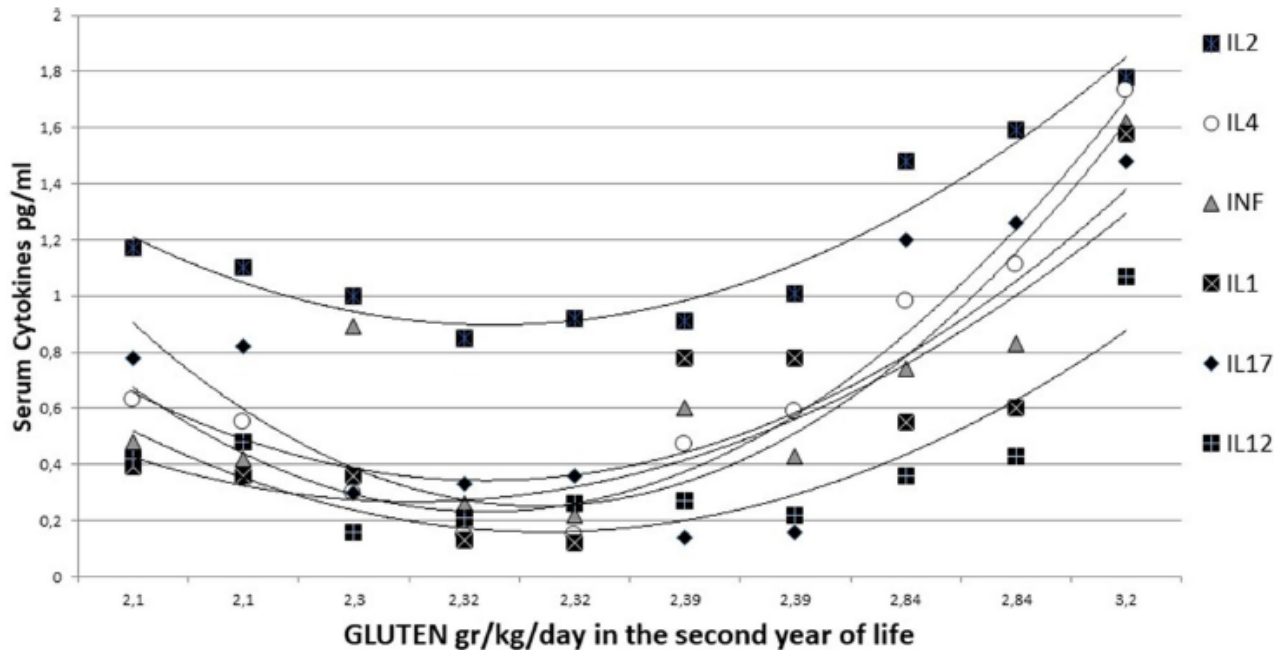
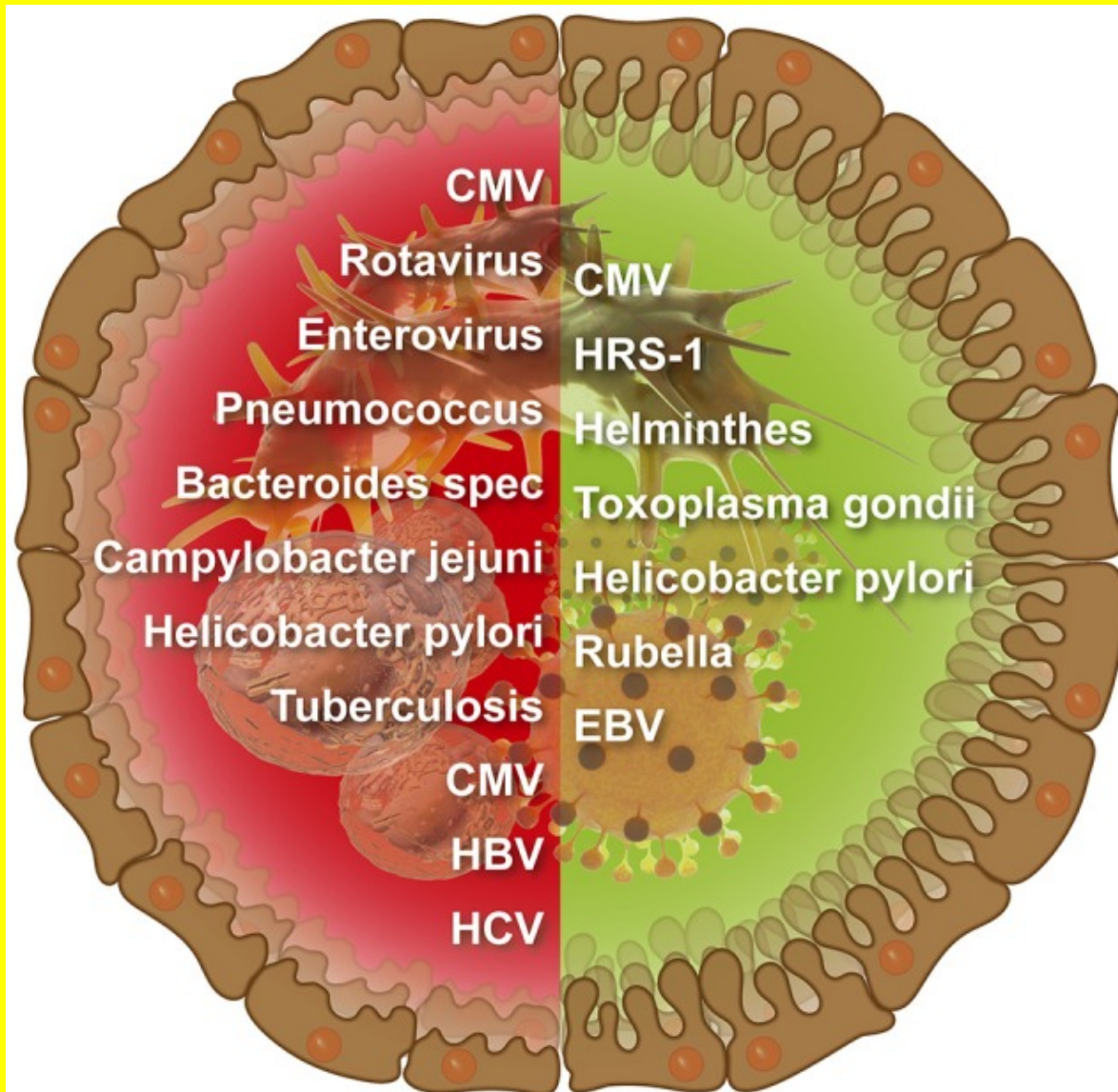


Figure 3. Pearson correlation coefficient 'r' between gluten (gr/kg/day) intake in the second year of life and serum cytokines at 36 months in the celiac disease group.

High correlation between serum cytokines (INF γ , IL2, IL4, IL12p70, IL17) at 36 months of life and amount of gluten ingested



Infectious agents that were suggested to induce (**left side**) or protect against (**right side**) intestinal celiac disease.



PREVENT-CD EUROPEAN STUDY

% events in 16 CD cases vs 188 controls

| Months | 0-6 | | 6-12 | | 12-24 | | 24-48 | |
|--------------|-------------|----------|-------------|----------|-------------|----------|-------------|----------|
| | Cases | Controls | Cases | Controls | Cases | Controls | Cases | Controls |
| Vomiting | 23.1 | 16.4 | 30.8 | 11.9 | 7.7 | 2.6 | 8.3 | 13.5 |
| Fever | 15.4 | 10.3 | 46.2 | 20 | 23.1 | 17.2 | 16.7 | 24.3 |
| URTI | 46.2 | 20.6 | 100 | 33.3 | 84.6 | 38.8 | 66.7 | 70.3 |
| LRTI | 30.8 | 7.9 | 46.2 | 20 | 46.2 | 15.5 | 8.3 | 16.2 |
| Constipation | 15.4 | 2.4 | 23.1 | 7.4 | 0 | 10.3 | 25 | 16 |



Bronchial swelling

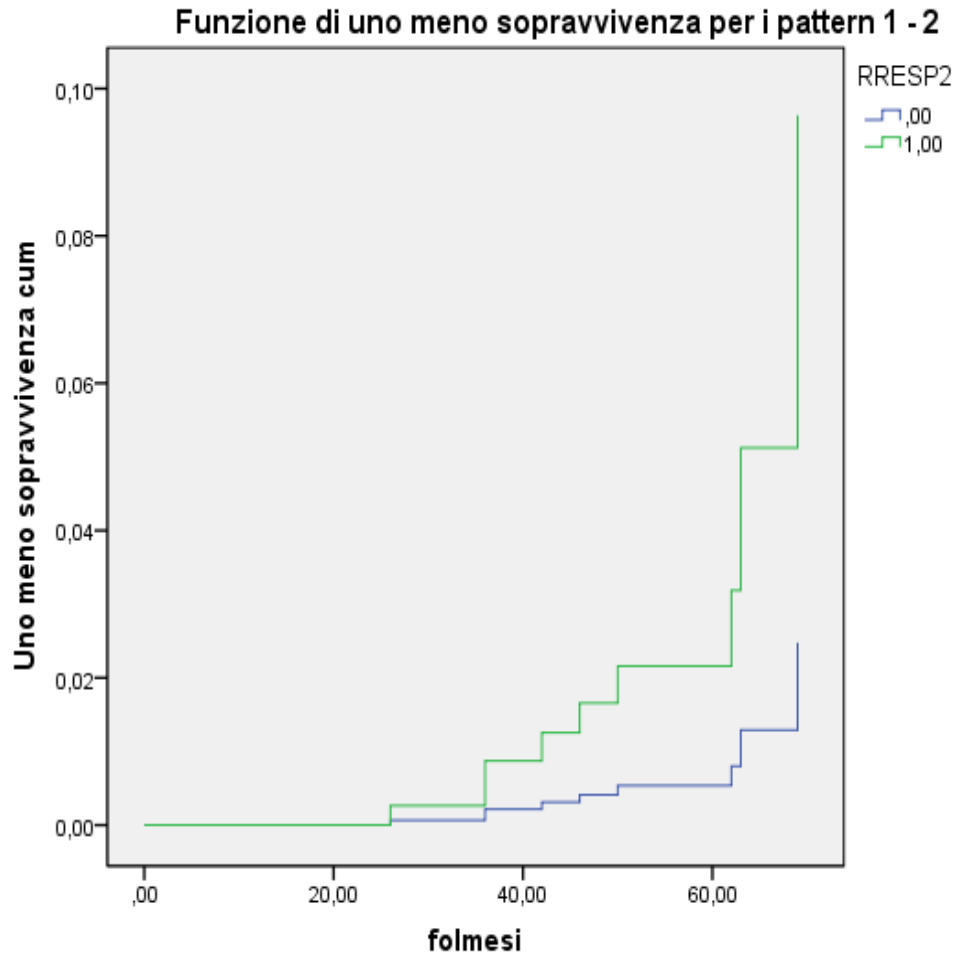


In bronchiolitis, the airway becomes obstructed from swelling of the bronchiole walls

EVENTS

- Children who develop Celiac Disease show an excess of adverse events till 24 months:
- double Upper Respiratory and Lower Respiratory Infections, more Fever lasting > 3 days , more Vomiting
÷
- Up to 12 months they also showed more frequently Constipation.
- There was no difference in the frequency of acute gastroenteritis or 'colicky' abdominal pain.
- It is interesting to observe that such differences were not any more present after 24 months, when most of the cases start to be diagnosed and put on a gluten free diet.

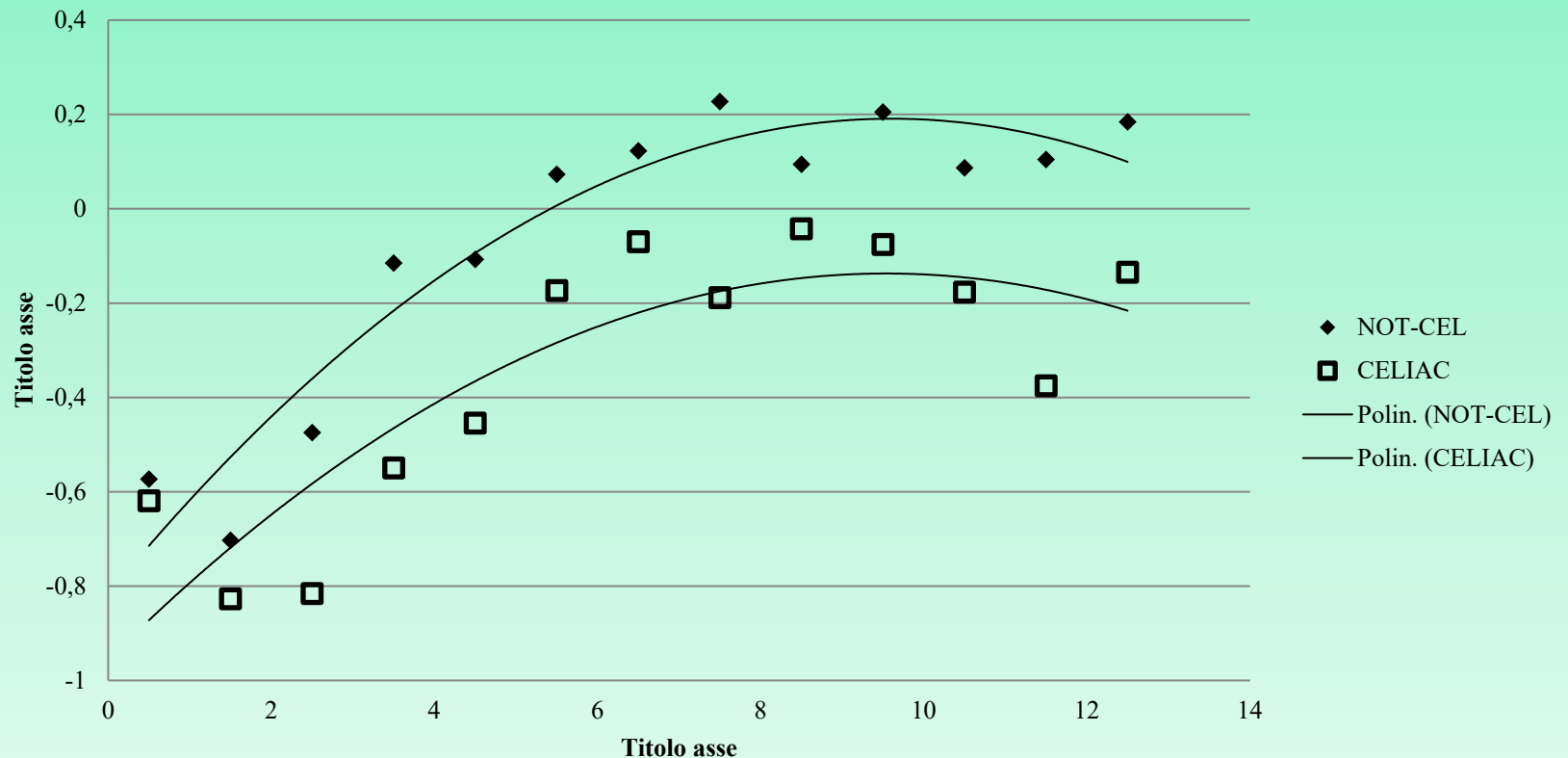
INCIDENZA CUMULATIVA TRA CHI HA EPISODI INFETTIVI RESPIRATORI NEI PRIMI 2 ANNI E CHI NON NE HA



L'INCIDENZA DI CD E' MAGGIORE NEI SOGGETTI CON ALMENO UN EPISODIO INFETTIVO RESPIRATORIO NEI PRIMI 2 ANNI DI VITA..

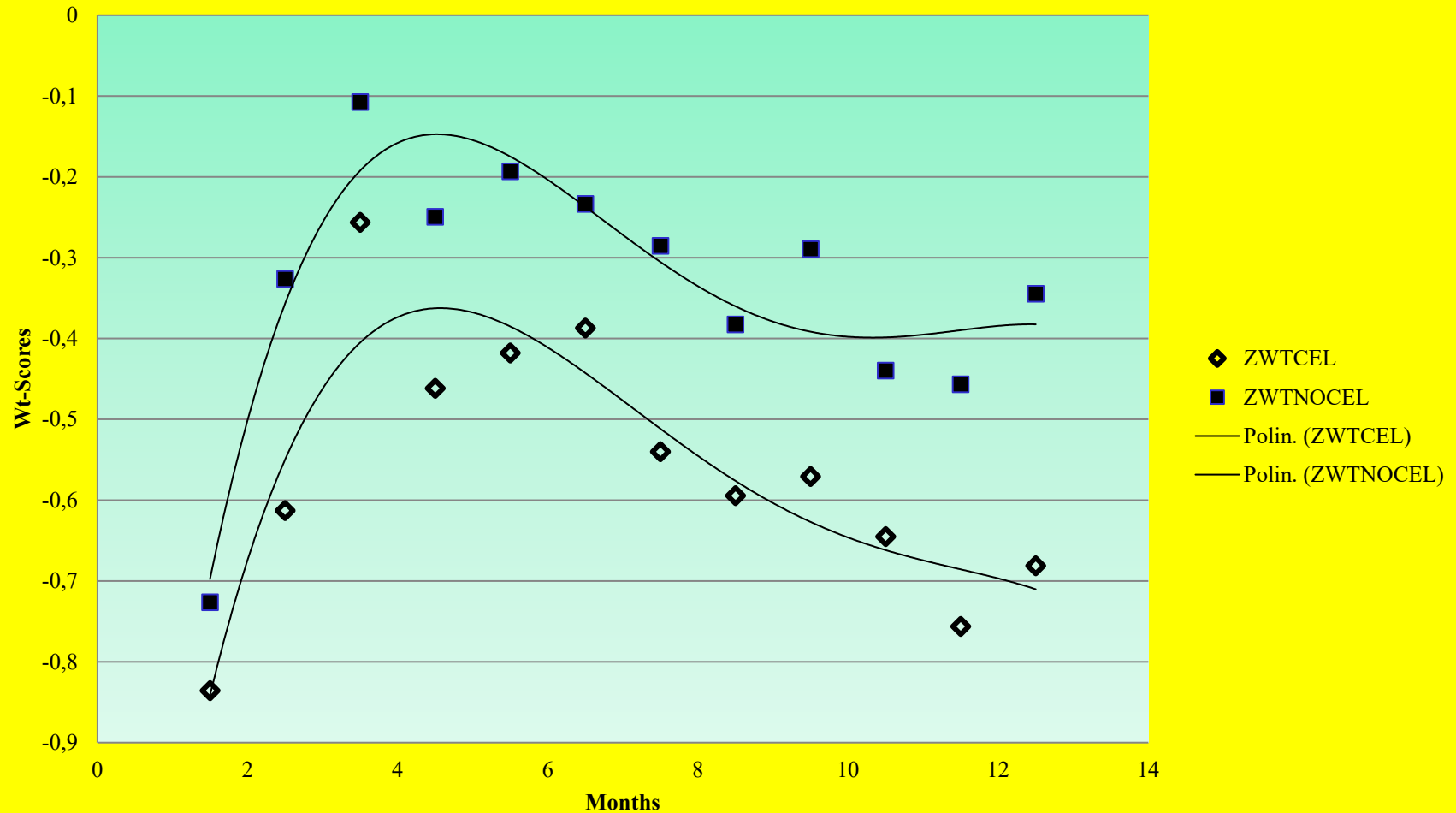
It looks that infants who become CeD grow differently since start ! Growth in Length

HEIGHT Z-SCORE IN THE FIRST YEAR OF LIFE



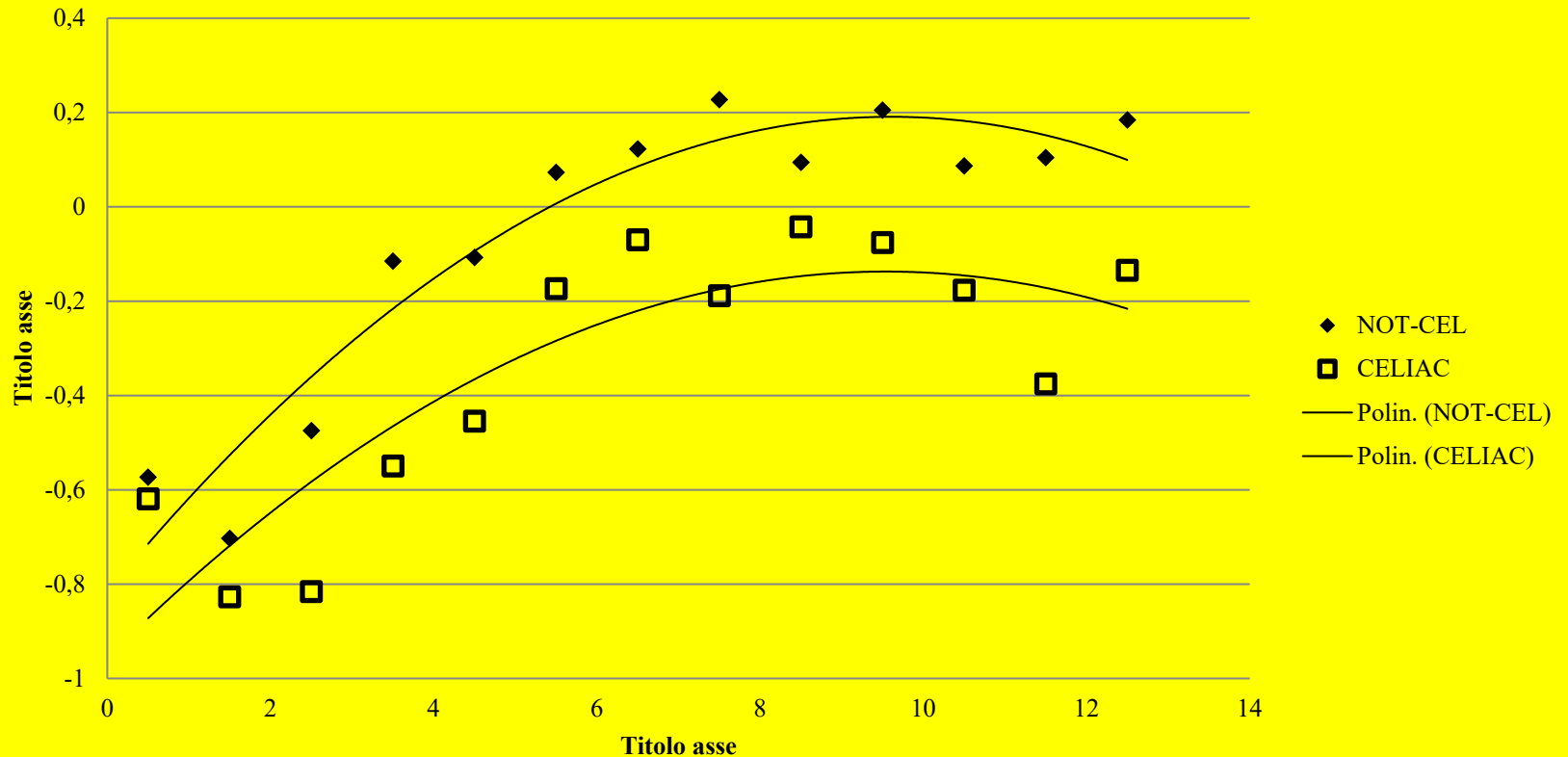
The weight Z-score falls much before the diagnosis

WT Z-SCORES IN THE FIRST YEAR OF LIFE



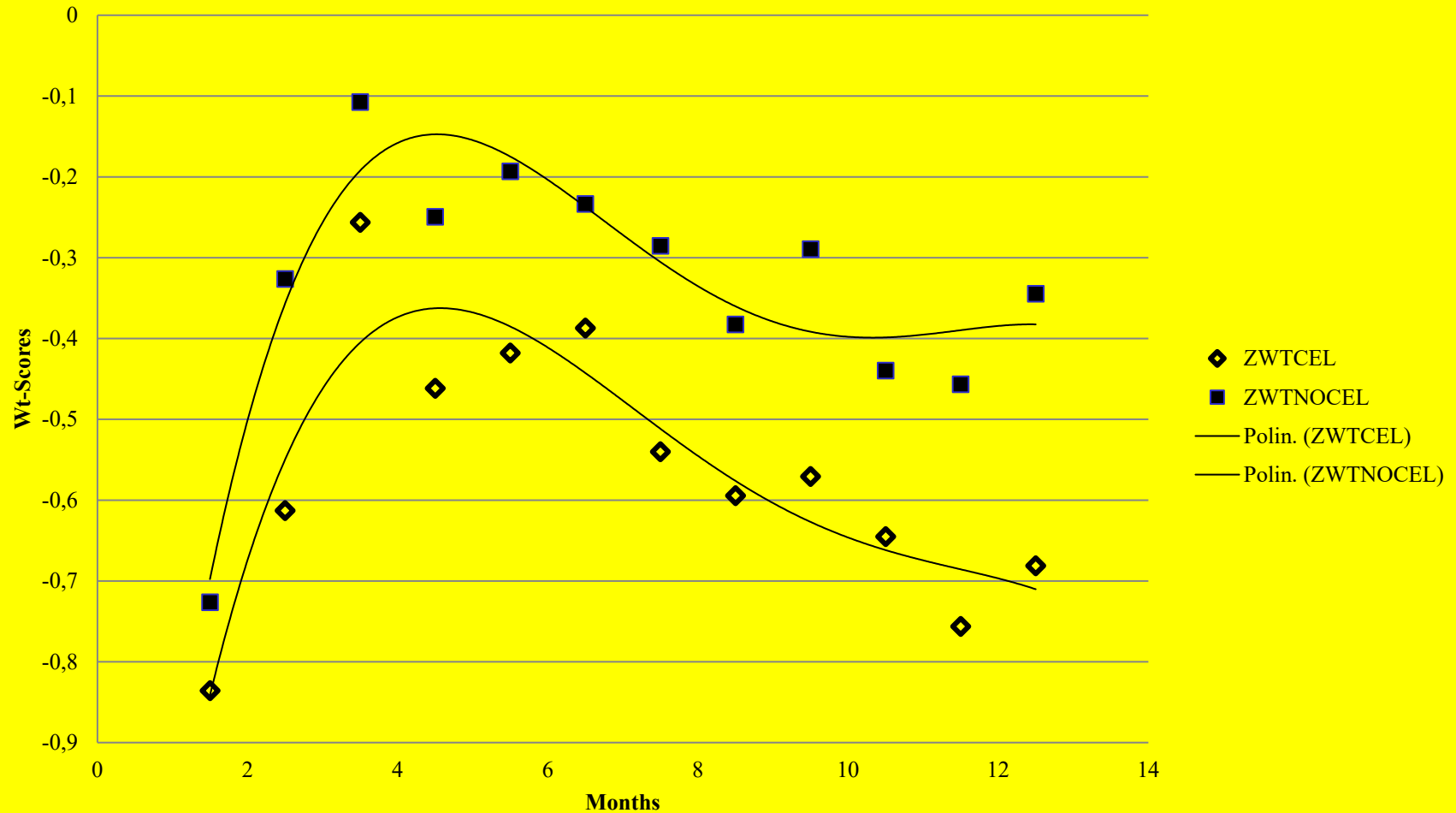
It looks that infants who become CeD grow differently since start ! Growth in Length

HEIGHT Z-SCORE IN THE FIRST YEAR OF LIFE

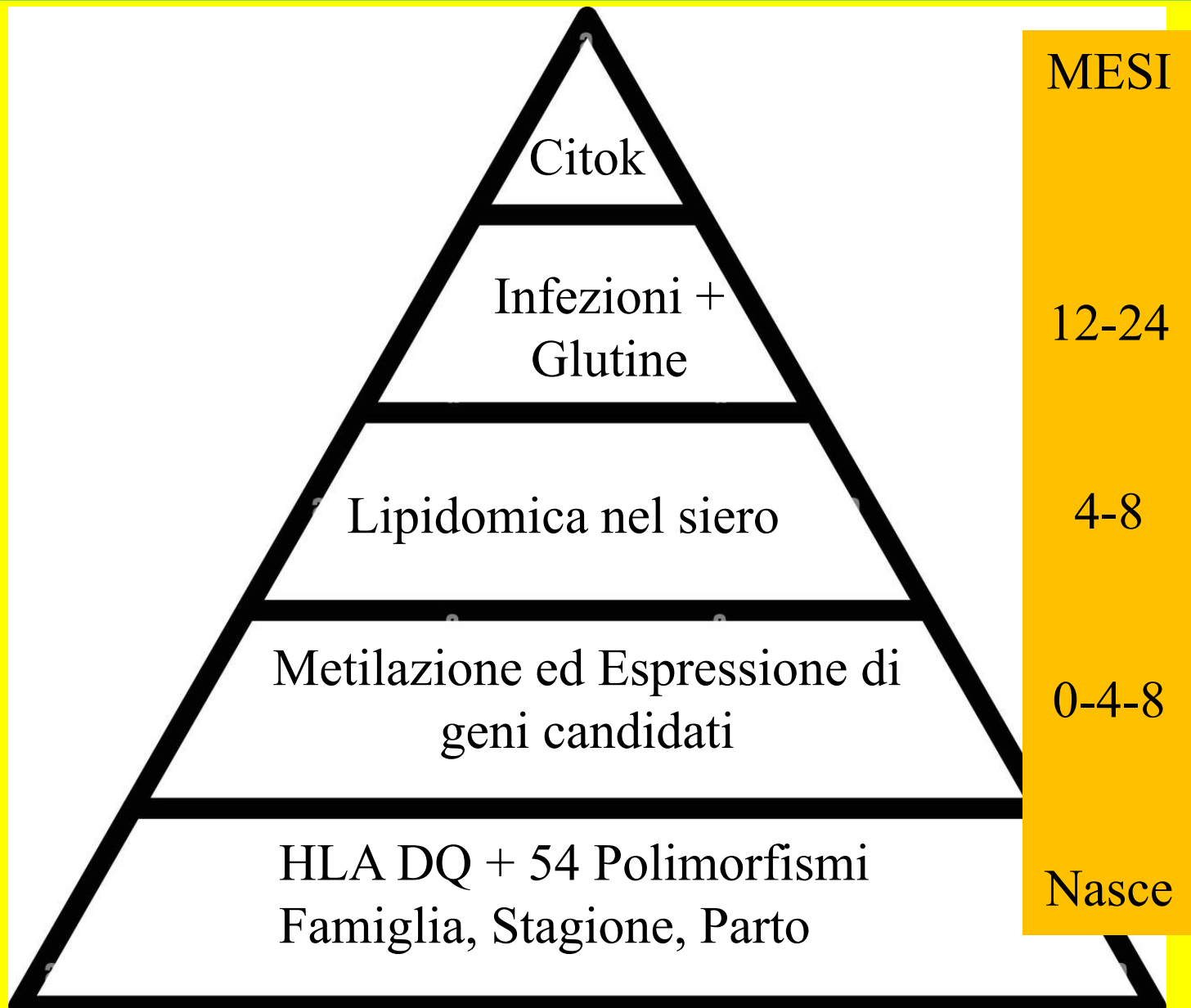


The weight Z-score falls much before the diagnosis

WT Z-SCORES IN THE FIRST YEAR OF LIFE



Progressione del Rischio di Sviluppare Celiachia dalla nascita a 2 anni



Importante lavoro dei Pediatri Campani







nutrients



Article

The Effect of Weaning with Adult Food Typical of the Mediterranean Diet on Taste Development and Eating Habits of Children: A Randomized Trial

Raffaella de Franchis ^{1,*}, Luigi Bozza ¹, Pasquale Canale ¹, Maria Chiacchio ¹, Paolo Cortese ¹, Antonio D'Avino ¹, Maria De Giovanni ¹, Mirella Dello Iacovo ¹, Antonietta D'Onofrio ¹, Aniello Federico ¹, Nicoletta Gasparini ¹, Felicia Iaccarino ¹, Giuseppe Romano ¹, Raffaella Spadaro ¹, Mariangela Tedesco ¹, Giuseppe Vitiello ¹, Angelo Antignani ², Salvatore Auricchio ³, Vincenzo Valentino ⁴ , Francesca De Filippis ^{4,5} , Danilo Ercolini ^{4,5}  and Dario Bruzzese ⁶ 

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TRIAL10112023

Bayesian Sequential Pragmatic Cluster Randomized Clinical Trial design on the PrEventive effect of MD in Children: the PEMED trial research protocol

- **OBIETTIVO** : Ridurre il ‘peso’ della celiachia nei bambini attraverso un intervento dietetico preventivo (Dieta Mediterranea nei primi 3 anni di vita)
- In bambini nati da famiglie a rischio per familiarità
- Sorveglianza corrente ed intervento dietetico

Esempio di Scampia

| SCAMPI-CEL Prevenire la Celiachia a Scampia | | |
|---|---|----------|
| | | |
| | POPOLAZIONE GENERALE | Soggetti |
| 1 | Popolazione Municipalità 8 | 92.616 |
| 2 | Nuovi Nati/anno | 1179 |
| 3 | Bambini che saranno celiaci (1,5%)/anno | 18 |
| 4 | Bambini celiaci in 5 anni | 88 |
| | | |
| | | |
| | POPOLAZIONE A RISCHIO CELIACHIA | |
| 5 | Soggetti Celiaci stimati 1,5% | 1.389 |
| 6 | Celiaci Diagnosticati: 50%= 0,75% | 695 |
| 7 | Celiaci noti in età fertile 18-45 (35%) | 243 |
| 8 | Probabili gravidanze/anno (25%) | 61 |
| 9 | Nati da Celiaci per anno (20% dei nati) | 12 |
| 10 | Nati da Celiaci in 5 anni | 61 |

Caratteristiche temporali dello studio

- Alla nascita: prelievo del sangue del cordone ombelicale per valutazione del rischio genetico. Verrà effettuata la tipizzazione HLA e il prelievo del DNA per la ricerca di polimorfismi genetici
- 0-6 mesi: allattamento al seno
- 4-6 mesi: randomizzazione in gruppo A e B, in cui sarà effettuato intervento, 6-12 mesi: svezzamento secondo le normali regole nutrizionali
- Sorveglianza dietetica fino al 3° anno di vita
- Fino a 6 anni: follow-up con periodici controlli clinici e sierologici per valutare l'eventuale comparsa della malattia celiaca.

We are BORN Gluten Free !!!

