

Alimentazione infantile e celiachia

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Celiachia

**Enteropatia infiammatoria
con tratti di auto-immunità,
scatenata in soggetti
geneticamente predisposti,
dall'ingestione del glutine**

MALATTIA CELIACA: MODELLO UNICO DI AUTOIMMUNITA'

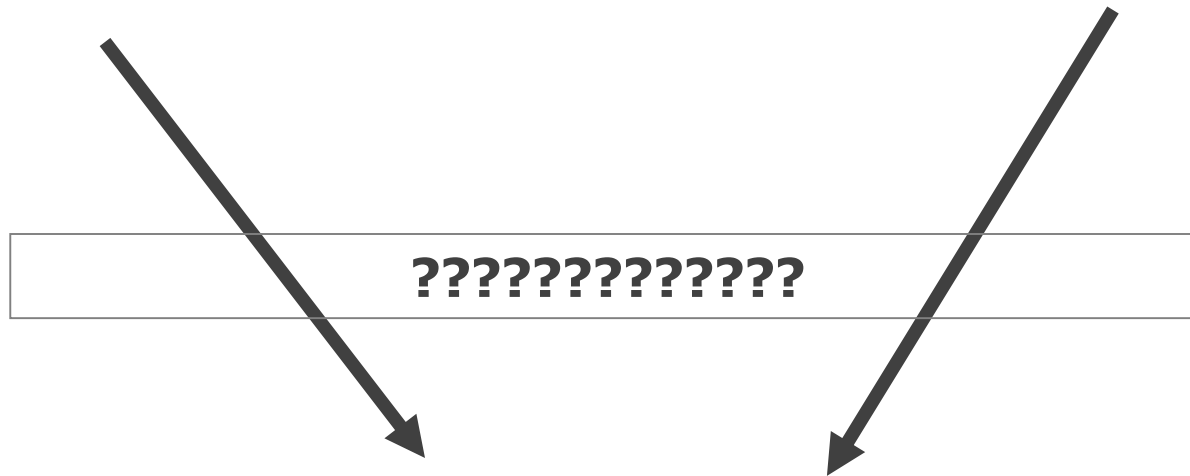
- **L'unica malattia in cui uno specifico allele HLA è presente nella totalità dei pazienti**
- **L'autoantigene è noto (tTG)**
- **Il trigger ambientale è noto (glutine)**
- **L'eliminazione del trigger ambientale determina la remissione della malattia e la successiva riesposizione provoca la riaccensione della infiammazione**

FATTORE COSTITUTIVO

FATTORE AMBIENTALE

**PREDISPOSIZIONE
GENETICA**

**ESPOSIZIONE AL
GLUTINE**



MALATTIA CELIACA

GLUTINE

ALBUMINE

idrosolubili

GLOBULINE

solubili in sol. salina

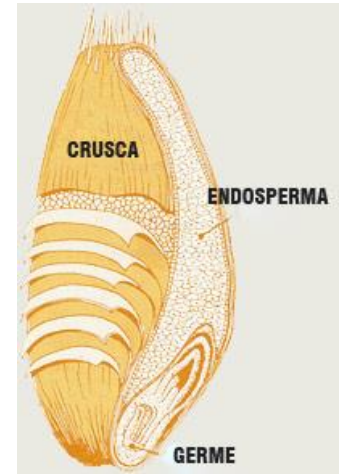
GLIADINA α β γ ω

solubili in etanolo

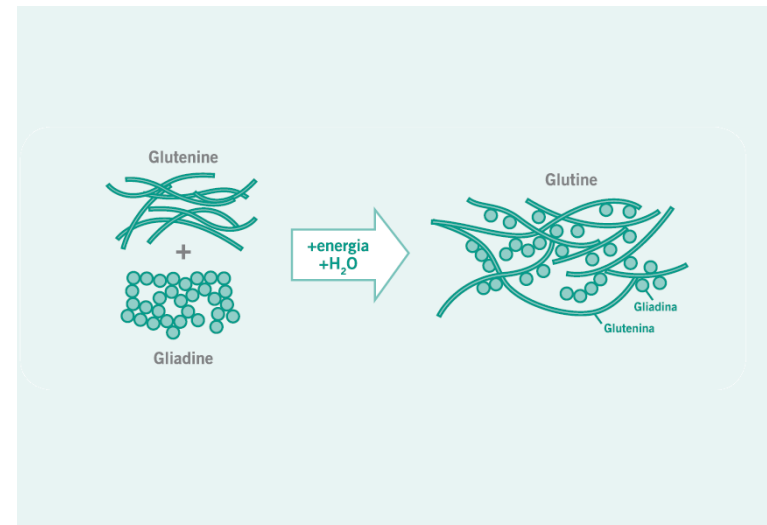
GLUTENINE

HMW LMW

solubili in acido acetico



Proteine di riserva



Background genetico della MC

MHC class II haplotypes involved in
celiac disease



DQ2

92%



DQ8

6%

Background genetico della MC

FIGURE 1A

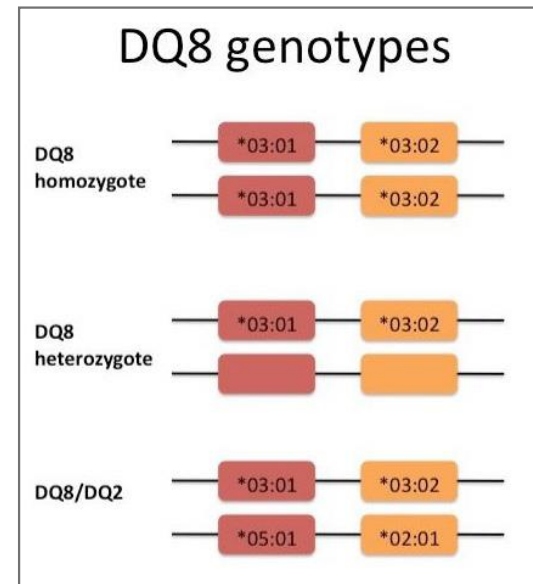
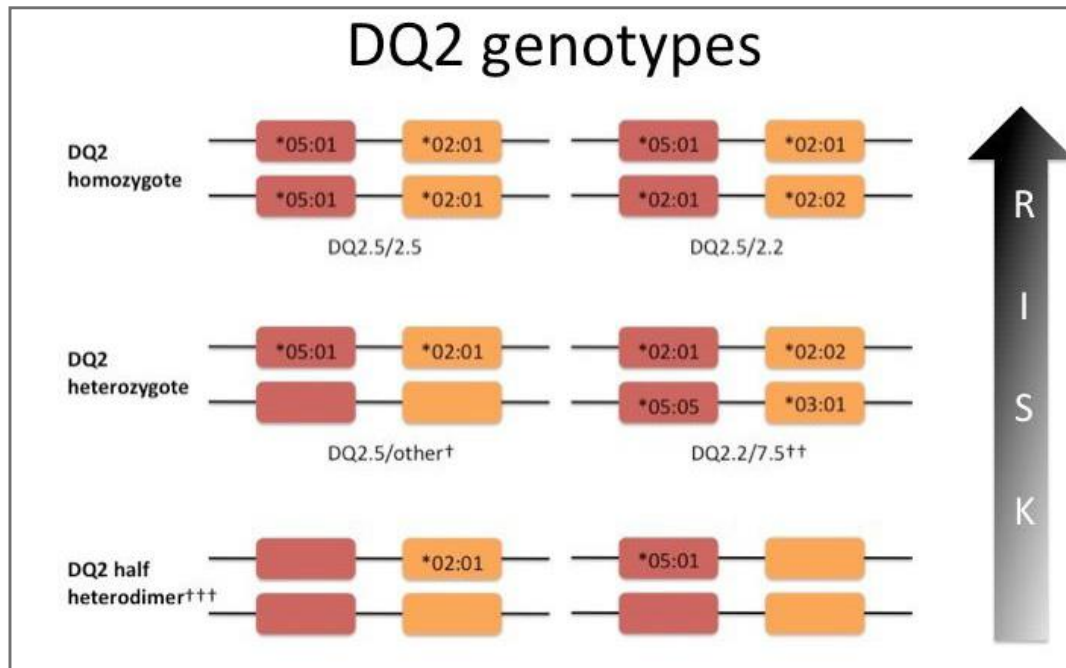


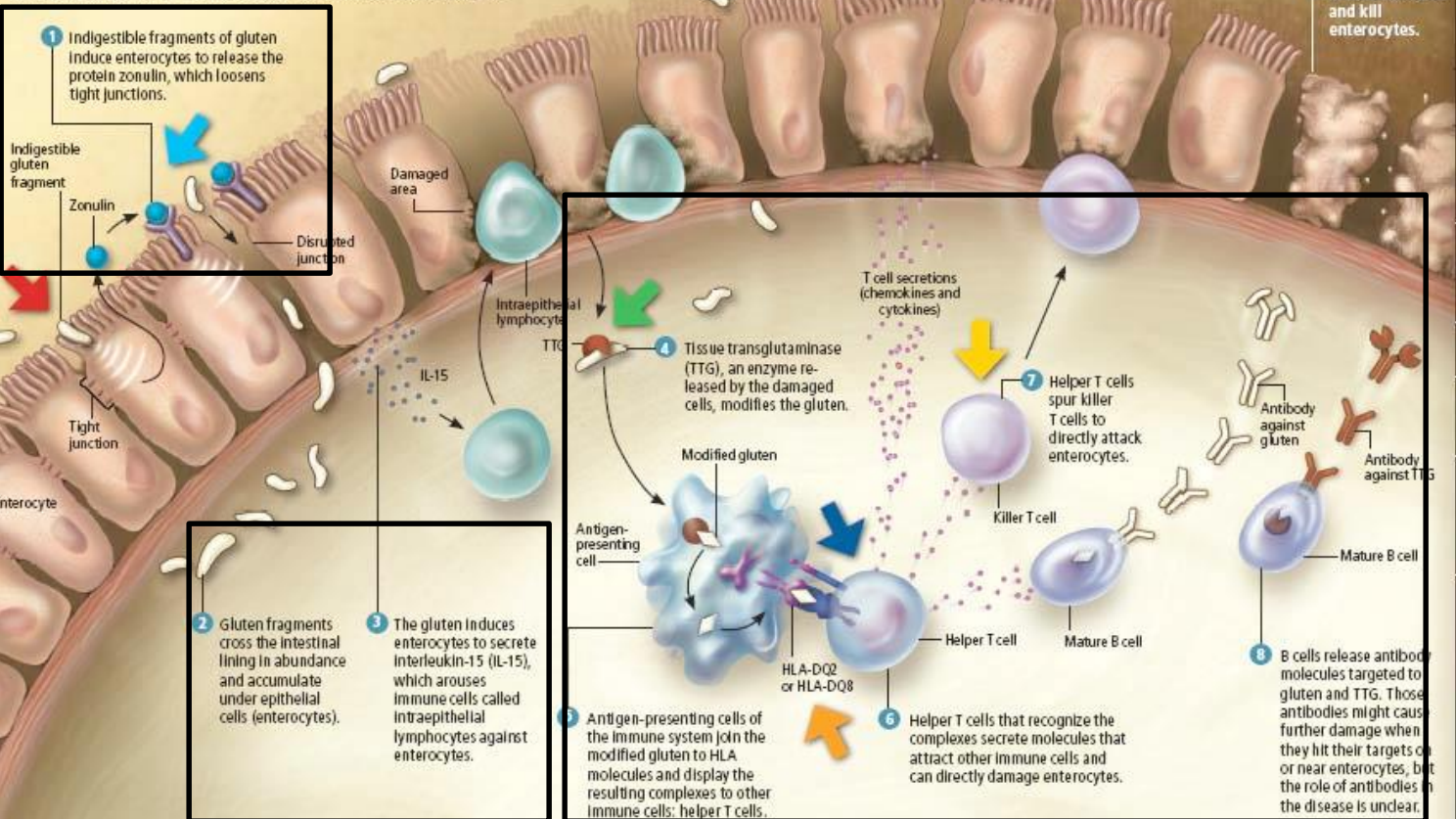
FIGURE 1B

Patogenesi della MC

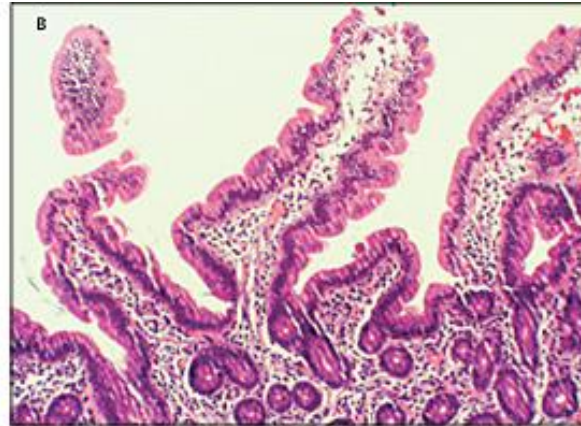
[MECHANISMS OF DISEASE]

THE INSIDE STORY

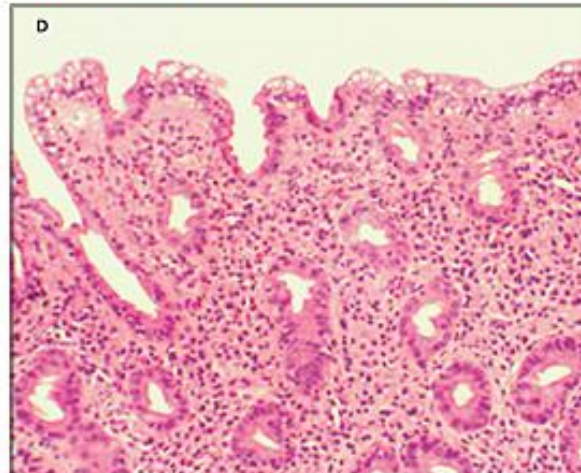
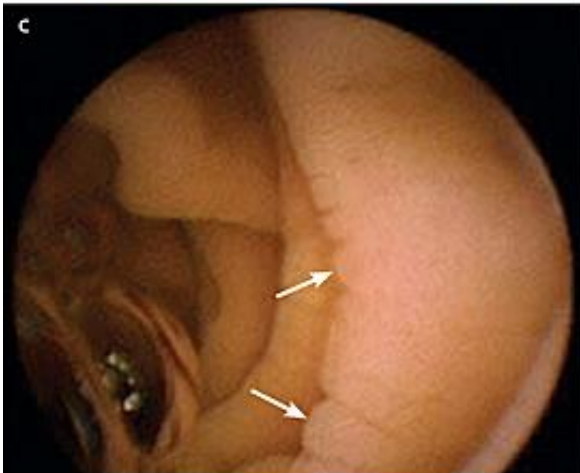
Investigators do not know every detail of how the immune system wreaks havoc with the intestinal lining of celiac patients, but they have identified a number of likely processes (*below*). Colored arrows indicate events that might be blocked by interventions now being investigated [see table on opposite page].



Patogenesi della MC



normale



celiaca

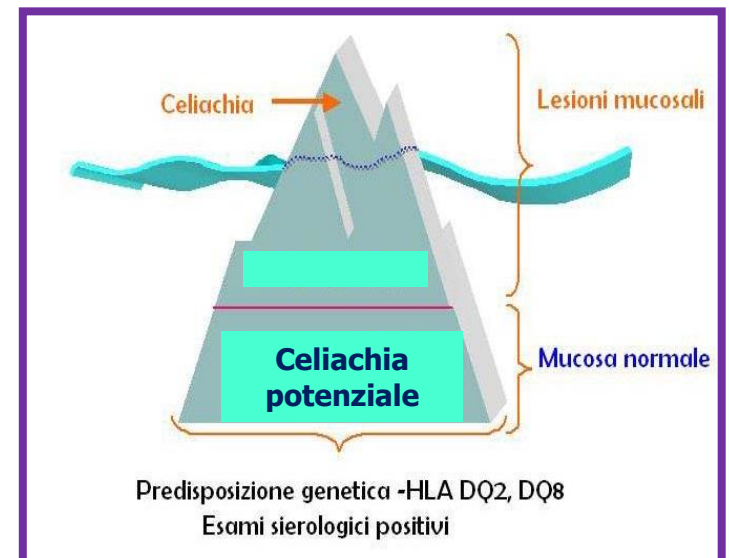
Dieta senza glutine

L'unico trattamento ad oggi disponibile per la celiachia è una stretta e permanente dieta priva di alimenti contenenti glutine

Anno 2017

**206.561 celiaci diagnosticati
(60.802 M; 145.759 F)**

**600.000
celiaci attesi**



Prevenzione primaria

Evitare che i soggetti geneticamente predisposti sviluppino la celiachia

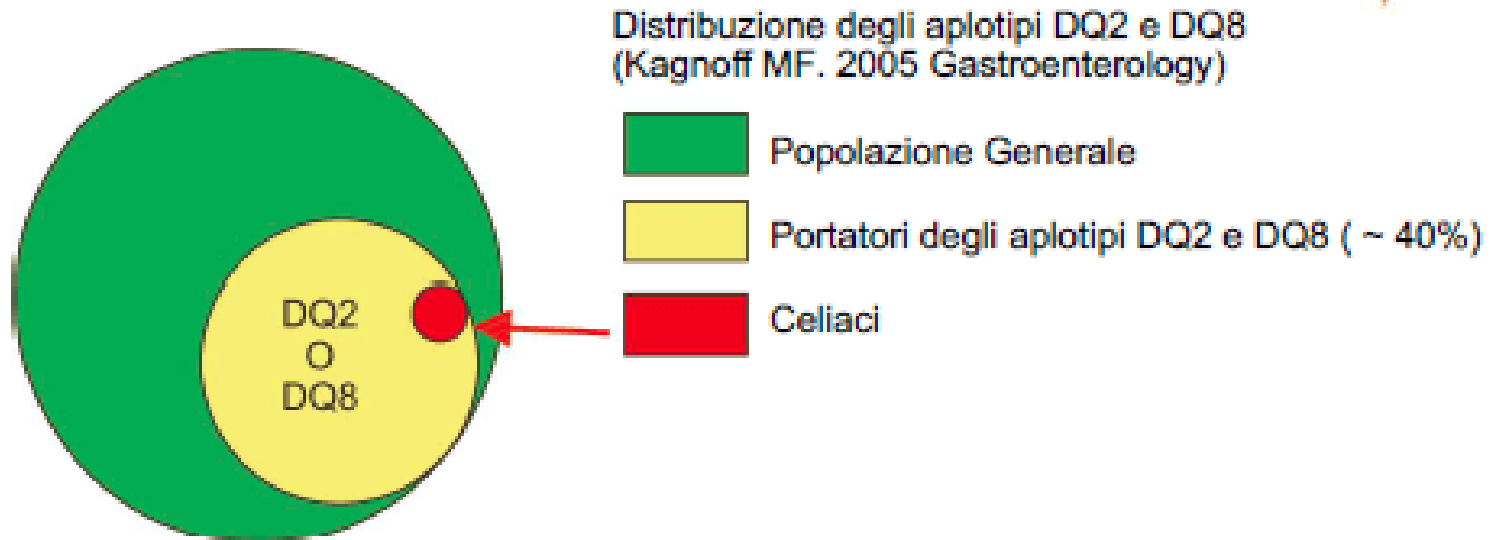
Prevenzione secondaria

Diagnosi corretta e precoce

Prevenzione terziaria

Ottima compliance alla DSG

Prevenzione primaria

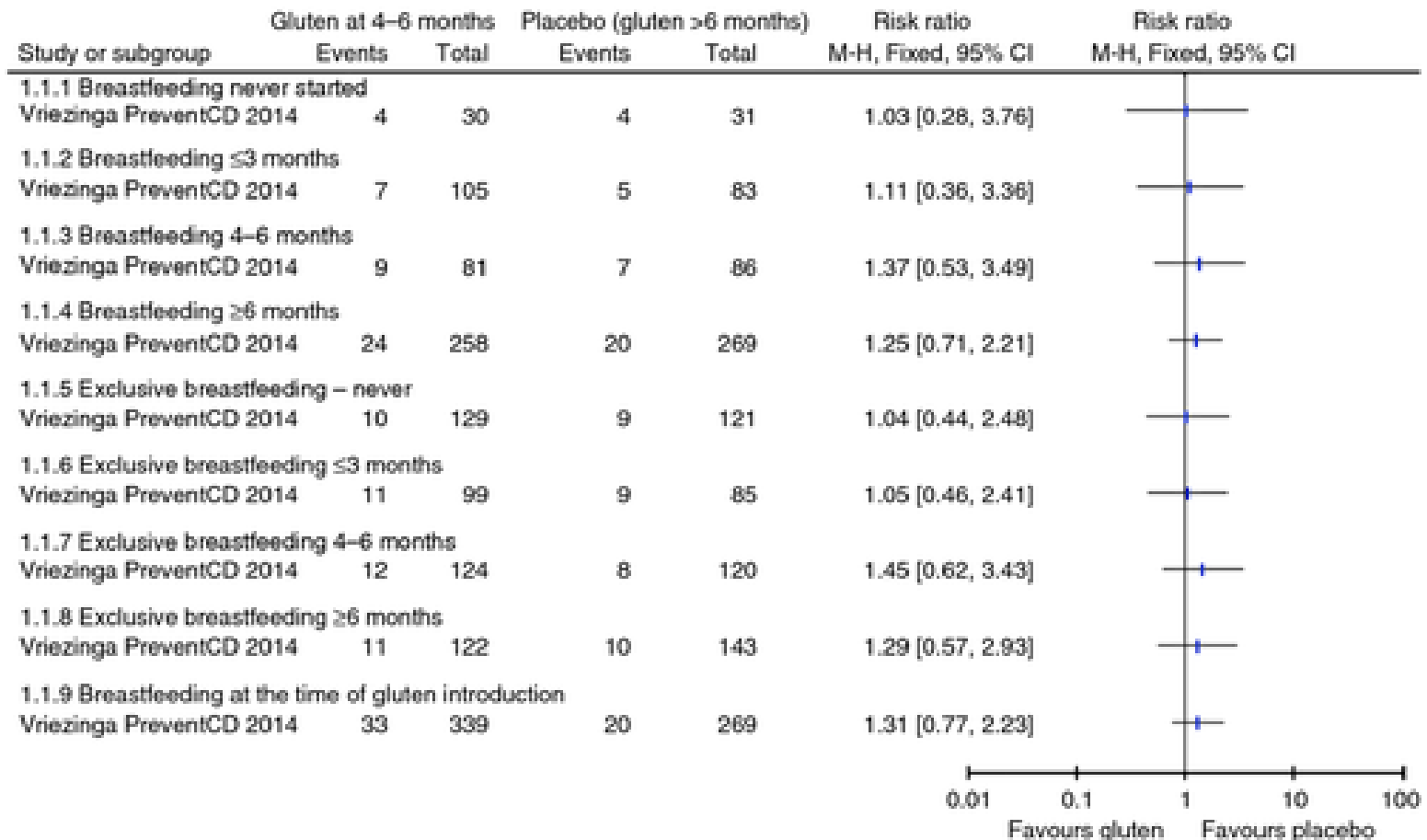


MECCANISMI PROTETTIVI DELL'ALLATTAMENTO SULLO SVILUPPO DI MC

- ✓ **contiene piccole tracce di glutine**
- ✓ **previene le infezioni intestinali**
- ✓ **contiene sostanze immunomodulanti**
- ✓ **regola lo sviluppo del microbioma intestinale**

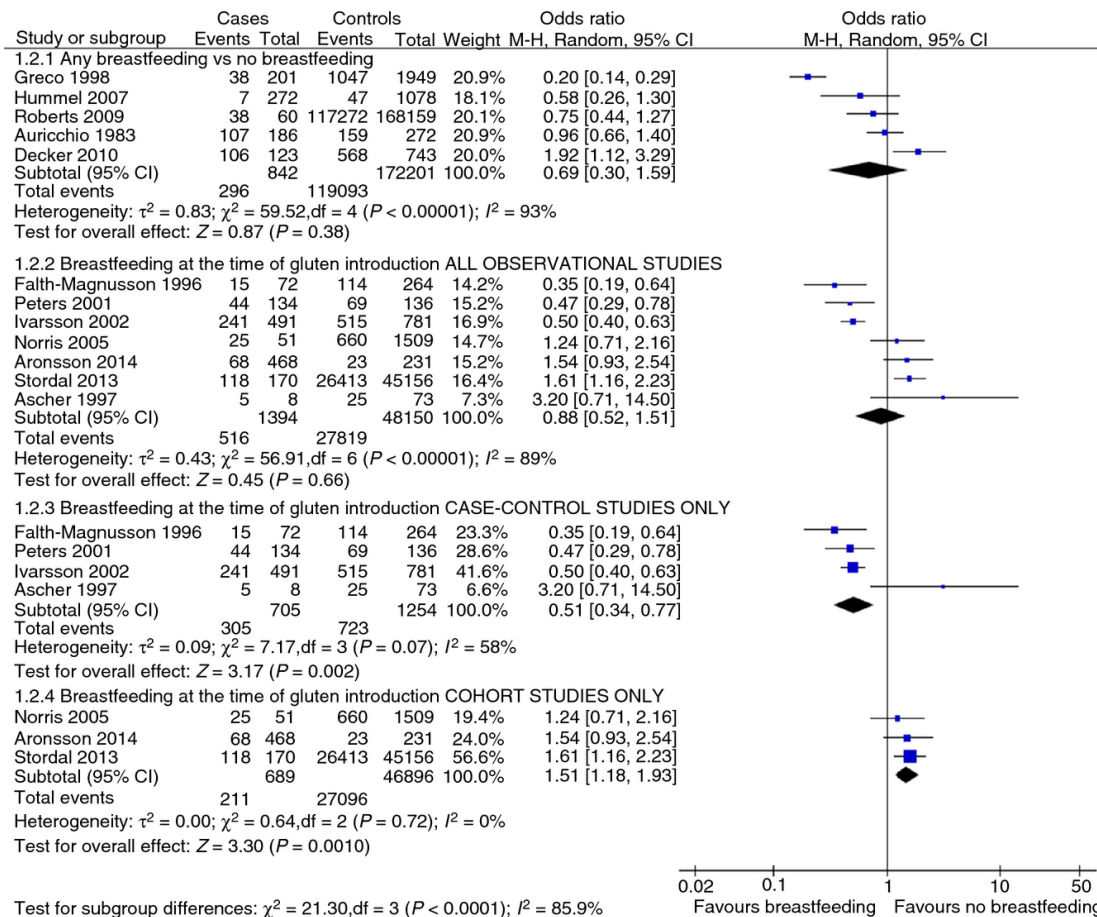
Allattamento e celiachia

RCTs



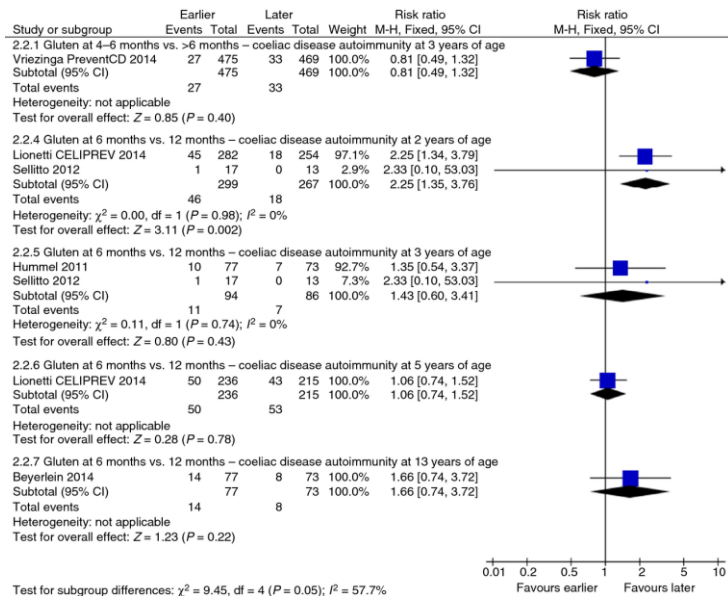
Allattamento e celiachia

Studi osservazionali



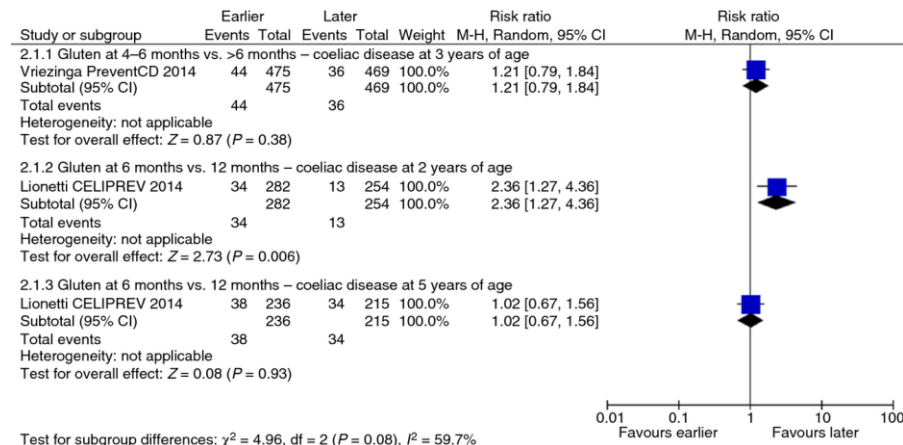
Introduzione del glutine e celiachia

RCTs



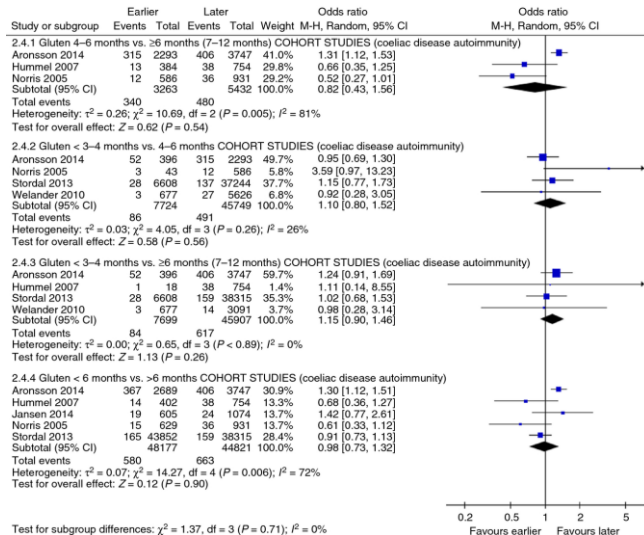
autoimmunità
celiaca

celiachia
manifesta



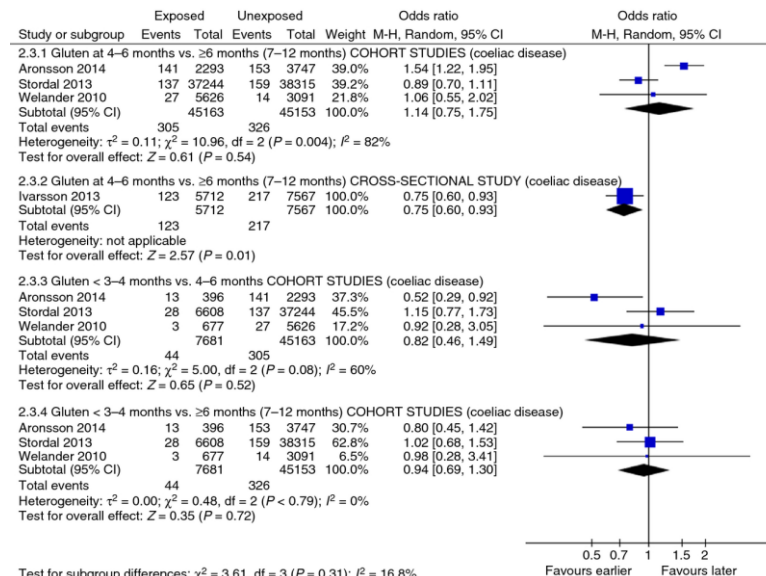
Introduzione del glutine e celiachia

Studi osservazionali



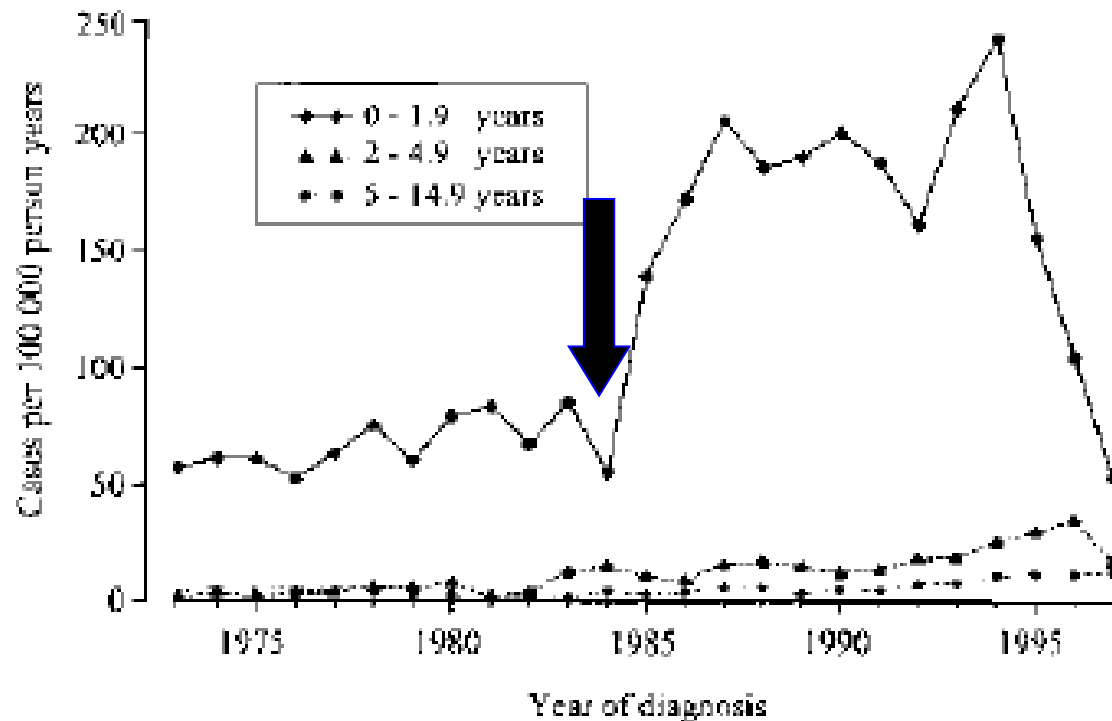
**autoimmunità
celiaca**

**celiachia
manifesta**



**Quantità di glutine durante il
divezzamento ?**

The "Sweden Case"



- The amount of gluten in the weaning doubled

Raccomandazioni ESPGHAN

Breast-feeding and CD

- (1) Recommendations on BF should not be modified because of considerations regarding prevention of CD (*conditional recommendation; low quality of evidence*).
- (2) Introducing gluten while the infant is being breast-fed cannot be recommended as a means of reducing the risk of developing CD (*conditional recommendation; low quality of evidence*). BF should, however, be promoted for its other well-established health benefits.

Timing of Gluten Introduction

- (1) Gluten can be introduced into the infant's diet between the ages of 4 and 12 completed months. The age of gluten introduction in infants in this age range does not seem to influence the absolute risk of developing CDA or CD during childhood (*conditional recommendation; depending on the age, quality of evidence varies from very low to high quality of evidence*).

Type of Gluten

- (1) No recommendation can be made regarding the type of gluten to be used at introduction (*conditional recommendation; very low quality of evidence*).

Amount of Gluten

- (1) Neither the optimal amounts of gluten to be introduced at weaning nor the effects of different wheat preparations on the risks of developing CD and CDA have been established. Despite the limited evidence regarding the exact amounts and with no RCTs to support it, ESPGHAN suggests that consumption of large amounts of gluten should be discouraged during the first months after gluten introduction (*conditional recommendation; very low quality of evidence*).

Gluten Introduction in Children From Families With a First-Degree Relative With CD

- (1) No recommendation was made on gluten introduction in children from families with first-degree relatives with CD.

POSITION PAPER

Gluten Introduction and the Risk of Coeliac Disease: A Position Paper by the European Society for Pediatric Gastroenterology, Hepatology, and Nutrition

^{*}Hania Szajewska, [†]Raanan Shamir, [‡]Luisa Mearin, [§]Carmen Ribes-Koninckx, ^{||}Carlo Catassi,
[¶]Magnus Domellöf, [#]Mary S. Fewtrell, ^{**}Steffen Husby, ^{††}Alexandra Papadopoulou,
^{‡‡}Yvan Vandenplas, ^{§§}Gemma Castillejo, ^{|||}Sanja Kolacek, ^{¶¶}Sibylle Koletzko,
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Ma nei bambini ad alto rischio genetico ?

Strengths and limitations of this study

- Our systematic review offers an inclusive overview of the population-based evidence regarding infant feeding practices and the risk of developing celiac disease (CD).
- A study quality score and a bias risk scale are used to appraise the clinical transferability of each study included in this systematic review.
- A small number of prospective clinical trials are available about the role of breast feeding and the gluten introduction during weaning. The majority of the studies were retrospective and enrolled children not at genetic risk for CD.
- No specific general recommendations about gluten introduction or optimal breastfeeding duration can be presently provided on evidence-based criteria in order to prevent CD. A possible exception might be DQ2 homozygous girls, in whom an early introduction of gluten appears to be associated with a greater risk of subsequent development of CD.

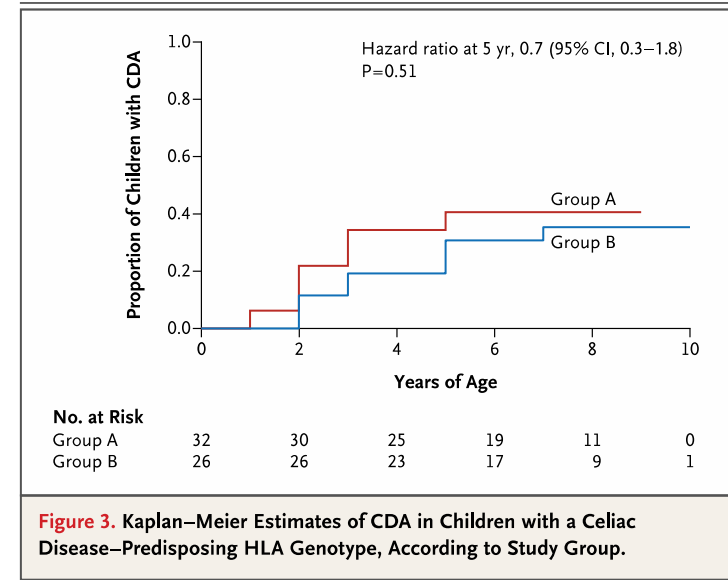
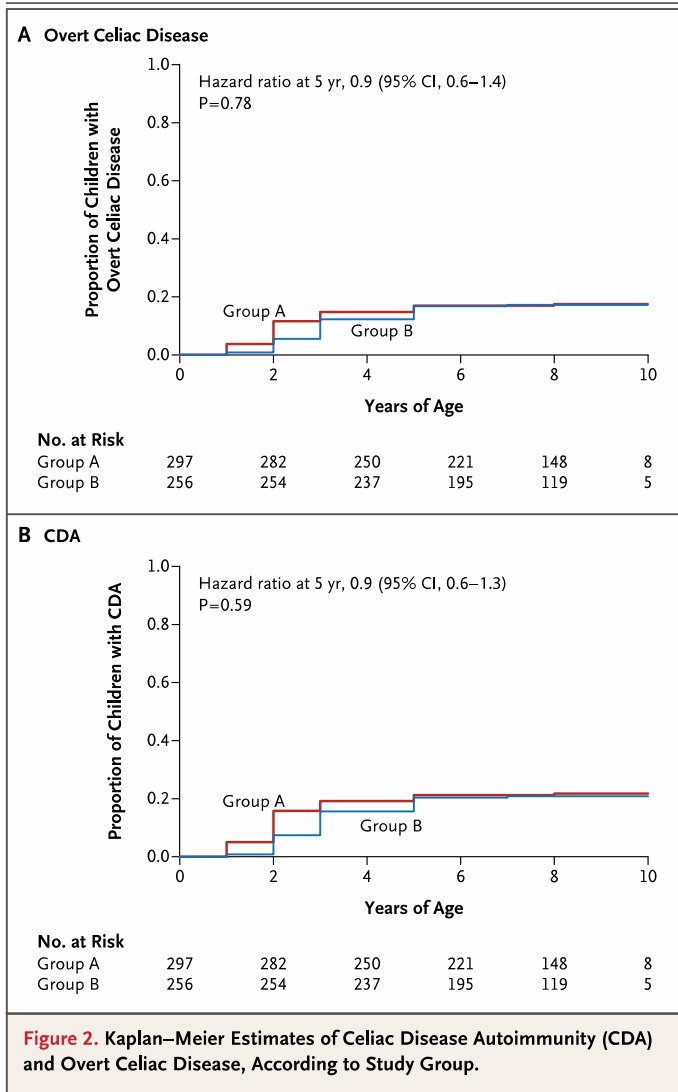
Open Access

Research

BMJ Open Infant feeding and risk of developing celiac disease: a systematic review

Marco Silano,¹ Carlo Agostoni,² Yolanda Sanz,³ Stefano Guandalini⁴

Ma nei bambini ad alto rischio genetico ?



The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

Introduction of Gluten, HLA Status, and the Risk of Celiac Disease in Children

Elena Lionetti, M.D., Stefania Castellana, M.D., Ruggiero Francavilla, M.D., Ph.D., Alfredo Pulvirenti, Ph.D., Elio Tonutti, M.D., Sergio Amarri, M.D., Maria Barbato, M.D., Cristiana Barbera, M.D., Graziano Barera, M.D., Antonella Bellantoni, M.D., Emanuela Castellano, M.D., Graziella Guariso, M.D., Maria Giovanna Limongelli, M.D., Salvatore Pellegrino, M.D., Carlo Polloni, M.D., Claudio Ughi, M.D., Giovanna Zuin, M.D., Alessio Fasano, M.D., and Carlo Catassi, M.D., M.P.H., for the SIGENP (Italian Society of Pediatric Gastroenterology, Hepatology, and Nutrition) Working Group on Weaning and CD Risk

***GRAZIE PER
L'ATTENZIONE***