

**MATERA** | 18-20  
CASA CAVA | MAGGIO  
2023



# ALLERGIE E INTOLLERANZE NELLA FIBROMIALGIA

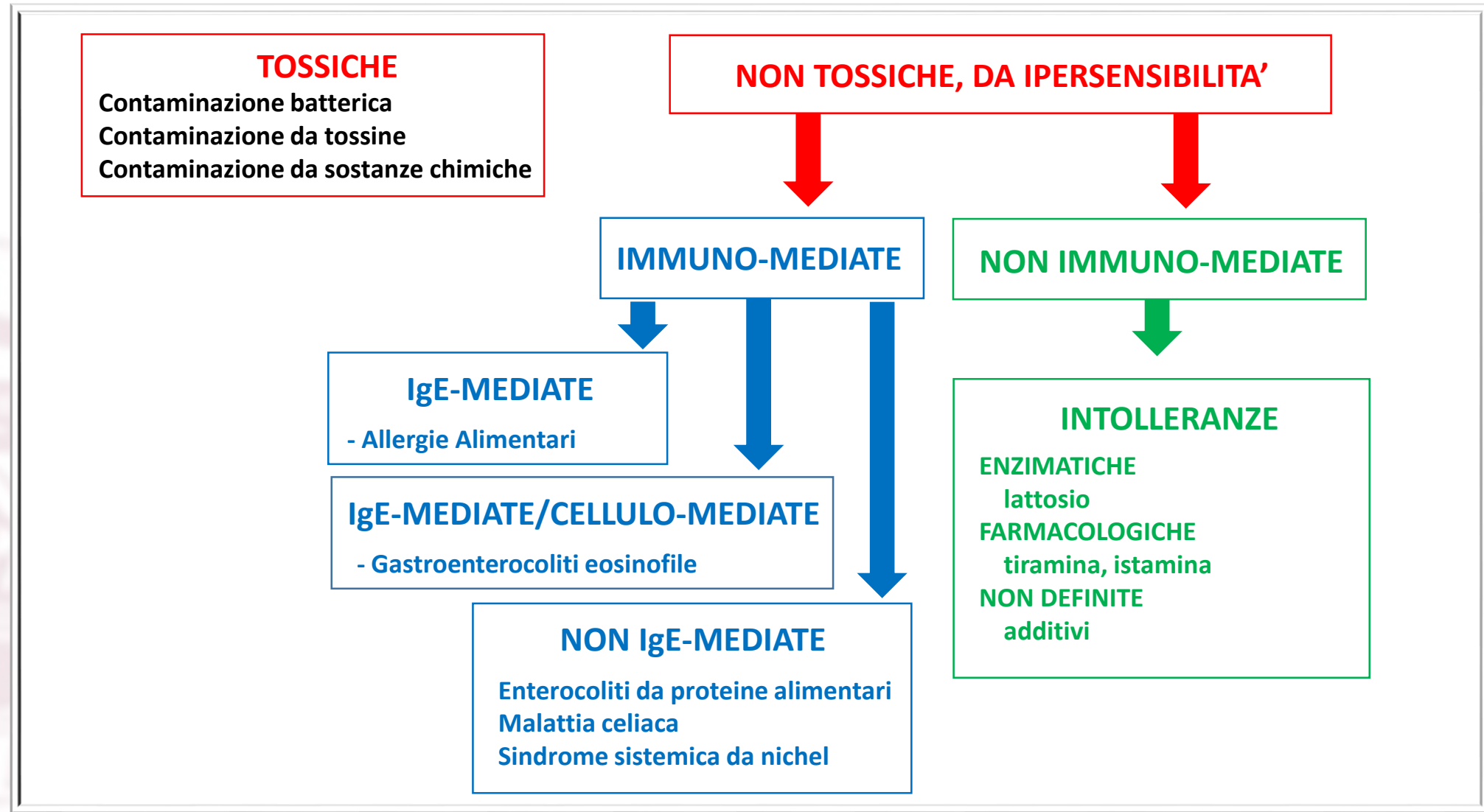
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*Medicina Interna I*

*Fondazione IRCCS Policlinico S.Matteo*

*Pavia*

# CLASSIFICAZIONE DELLE REAZIONI AVVERSE AL CIBO



# DIFFERENZE TRA ALLERGIE E INTOLLERANZE ALIMENTARI

## ALLERGIA ALIMENTARE

>> età pediatrica

Può ridursi con l'età

IgE-mediata

Pochi cibi

Reazioni immediate o precoci

Riproducibili

Diagnosi diretta

## INTOLLERANZA ALIMENTARE

Qualsiasi età

Aumenta con l'età

Non immuno-mediata

Diversi cibi

Ritardata

Variabile

Diagnosi spesso difficile

# PREVALENZA DELLE ALLERGIE IN RELAZIONE AL TEST DIAGNOSTICO

## *Arachidi, proteine del latte, uova, pesce, crostacei*

|  |     |
|--|-----|
| Sintomi riferiti dai pazienti – età pediatrica | 12% |
| Sintomi riferiti dai pazienti – adulti         | 13% |
| Sintomi + Skin Prick Test                      | 3%  |
| Food challenge                                 | 3%  |

## *Frutta, verdura/ortaggi/legumi, frutta secca, grano, soia*

|                               |           |
|-------------------------------|-----------|
| Sintomi riferiti dai pazienti | 0.02-8.5% |
| Skin Prick Test               | 0.02-4.2% |
| Food challenge                | 0.1-4.3%  |

Rona RJ et al, *JACI* 2007  
Zuidmeer L et al, *JACI* 2008

# PREVALENZA DELLE REAZIONI AVVERSE AL CIBO

|  | 2006                      | 2014                    |
|--|---------------------------|-------------------------|
| <b>PREVALENZA<br/>DI REAZIONI<br/>AVVERSE AL CIBO</b>                                | Adulti 3-4%<br>Bambini 6% | Adulti 5%<br>Bambini 8% |
| <b>INCIDENZA DI<br/>RICOVERI<br/>OSPEDALIERI<br/>CAUSATI DA<br/>REAZIONI AL CIBO</b> | 0.6/1000 pazienti         | 1.3/1000 pazienti       |

Sicherer SA et al, *JACI* 2006

Sicherer SH & Sampson HA, *JACI* 2014

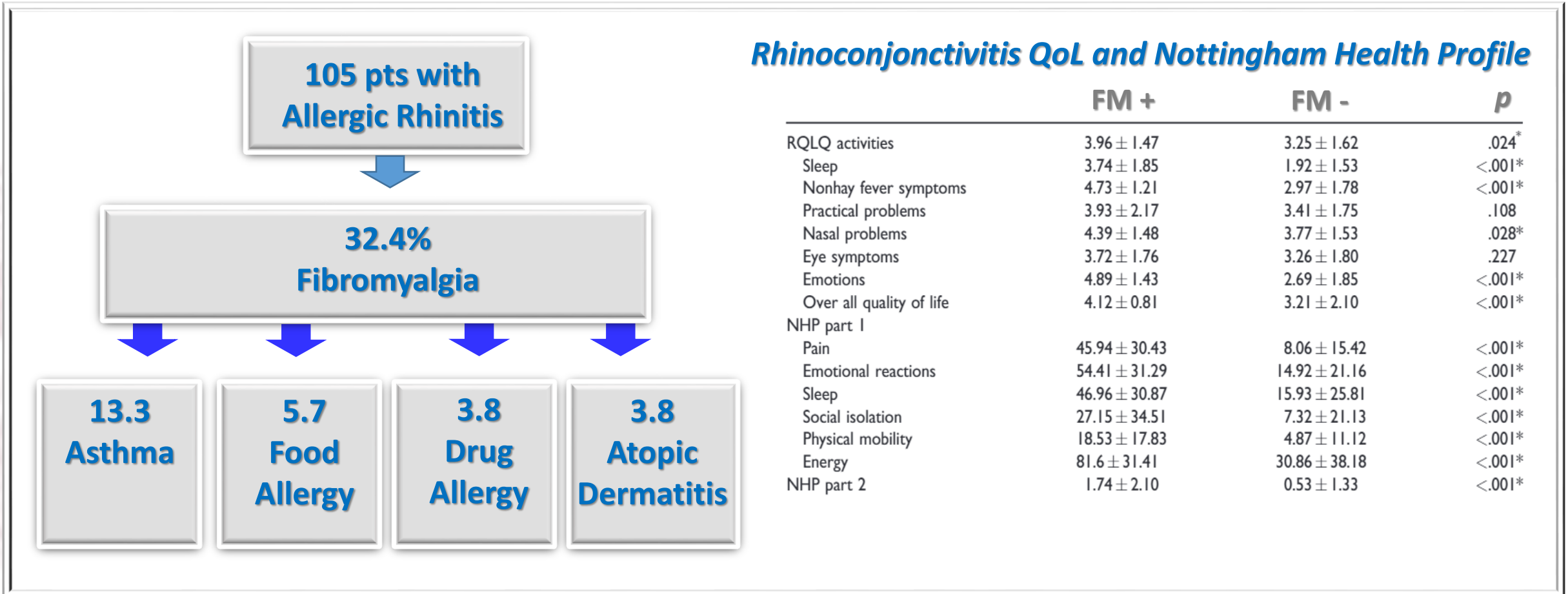
Rudders SA et al, *JACI* 2014

# FATTORI RITENUTI RESPONSABILI DEL PEGGIORAMENTO DEI SINTOMI DA PAZIENTI CON FM

| Perceived stressor                | Frequency |
|-----------------------------------|-----------|
| Emotional distress                | 83%       |
| Weather changes                   | 80%       |
| Sleeping problems                 | 79%       |
| Strenuous activity                | 70%       |
| Mental stress                     | 68%       |
| Worrying                          | 60%       |
| Car travel                        | 57%       |
| Family conflicts                  | 52%       |
| Physical injuries                 | 50%       |
| Physical inactivity               | 50%       |
| Infections                        | 43%       |
| Allergies                         | 37%       |
| Low to moderate physical activity | 36%       |
| Lack of emotional support         | 36%       |
| Time zone changes                 | 34%       |
| Airplane travel                   | 34%       |
| Perfectionism                     | 32%       |
| Work related conflicts            | 29%       |
| Menses                            | 27%       |
| Medication side effects           | 27%       |
| Chemical exposures                | 27%       |
| Sexual intercourse                | 17%       |

Bennett RM et al, *BMC Muscoloskel Dis* 2007

# PREVALENCE OF FIBROMYALGIA IN PATIENTS WITH ALLERGIC RHINITIS



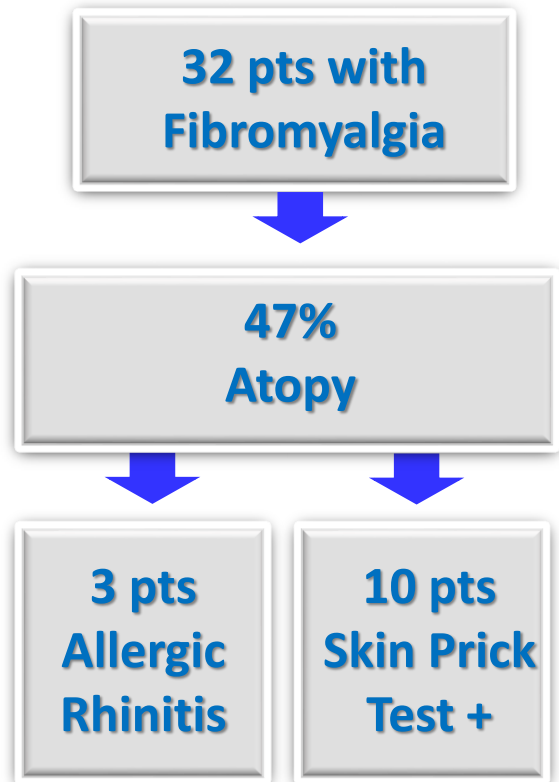
## Rhinoconjunctivitis QoL and Nottingham Health Profile

|                          | FM +          | FM -          | p      |
|--------------------------|---------------|---------------|--------|
| RQLQ activities          | 3.96 ± 1.47   | 3.25 ± 1.62   | .024*  |
| Sleep                    | 3.74 ± 1.85   | 1.92 ± 1.53   | <.001* |
| Nonhay fever symptoms    | 4.73 ± 1.21   | 2.97 ± 1.78   | <.001* |
| Practical problems       | 3.93 ± 2.17   | 3.41 ± 1.75   | .108   |
| Nasal problems           | 4.39 ± 1.48   | 3.77 ± 1.53   | .028*  |
| Eye symptoms             | 3.72 ± 1.76   | 3.26 ± 1.80   | .227   |
| Emotions                 | 4.89 ± 1.43   | 2.69 ± 1.85   | <.001* |
| Over all quality of life | 4.12 ± 0.81   | 3.21 ± 2.10   | <.001* |
| NHP part 1               |               |               |        |
| Pain                     | 45.94 ± 30.43 | 8.06 ± 15.42  | <.001* |
| Emotional reactions      | 54.41 ± 31.29 | 14.92 ± 21.16 | <.001* |
| Sleep                    | 46.96 ± 30.87 | 15.93 ± 25.81 | <.001* |
| Social isolation         | 27.15 ± 34.51 | 7.32 ± 21.13  | <.001* |
| Physical mobility        | 18.53 ± 17.83 | 4.87 ± 11.12  | <.001* |
| Energy                   | 81.6 ± 31.41  | 30.86 ± 38.18 | <.001* |
| NHP part 2               | 1.74 ± 2.10   | 0.53 ± 1.33   | <.001* |

Gultuna S et al, Am J Rhinol All 2019

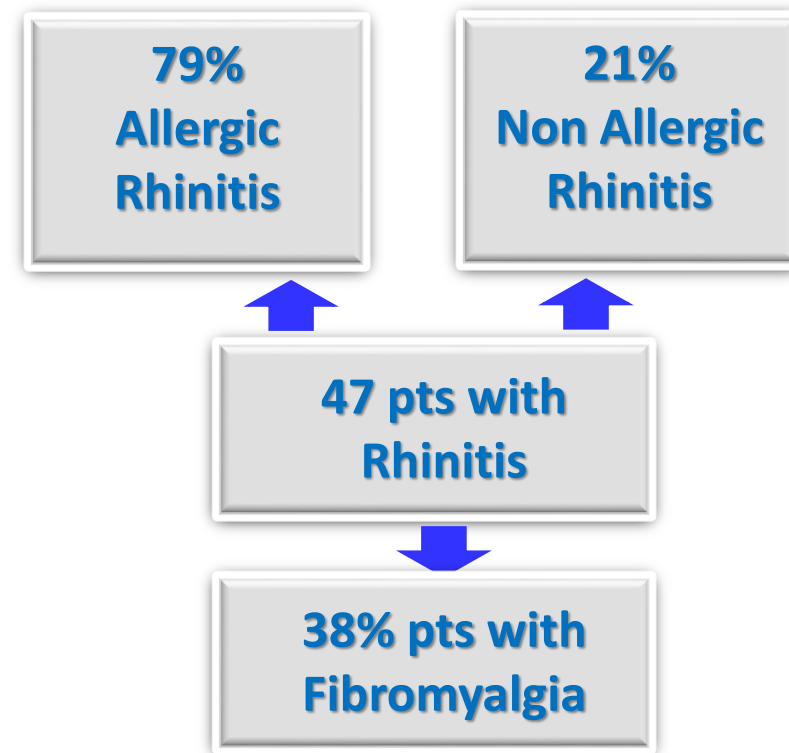
# RELATIONSHIP BETWEEN FIBROMYALGIA, ALLERGY AND RHINITIS

## Prevalence of Allergy in FM



Tuncer T et al, *Clin Rheumatol* 1997

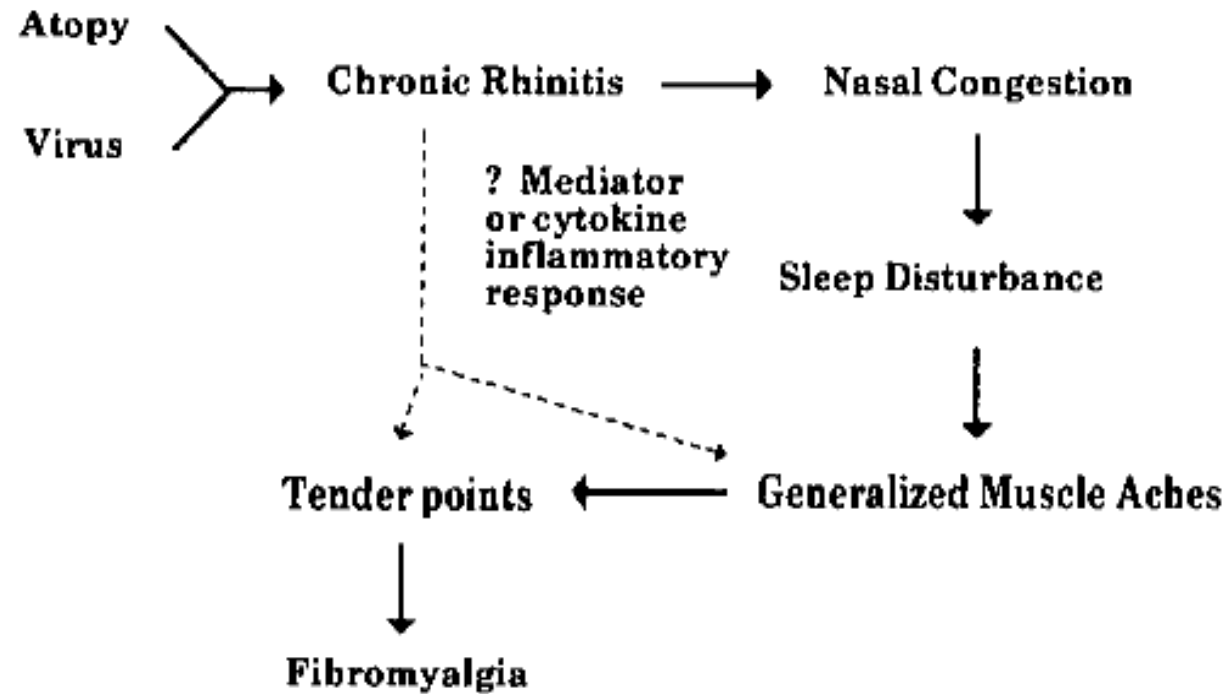
## Prevalence of FM in Rhinitis



Cleveland CH Jr et al, *Allergy Proc* 1992



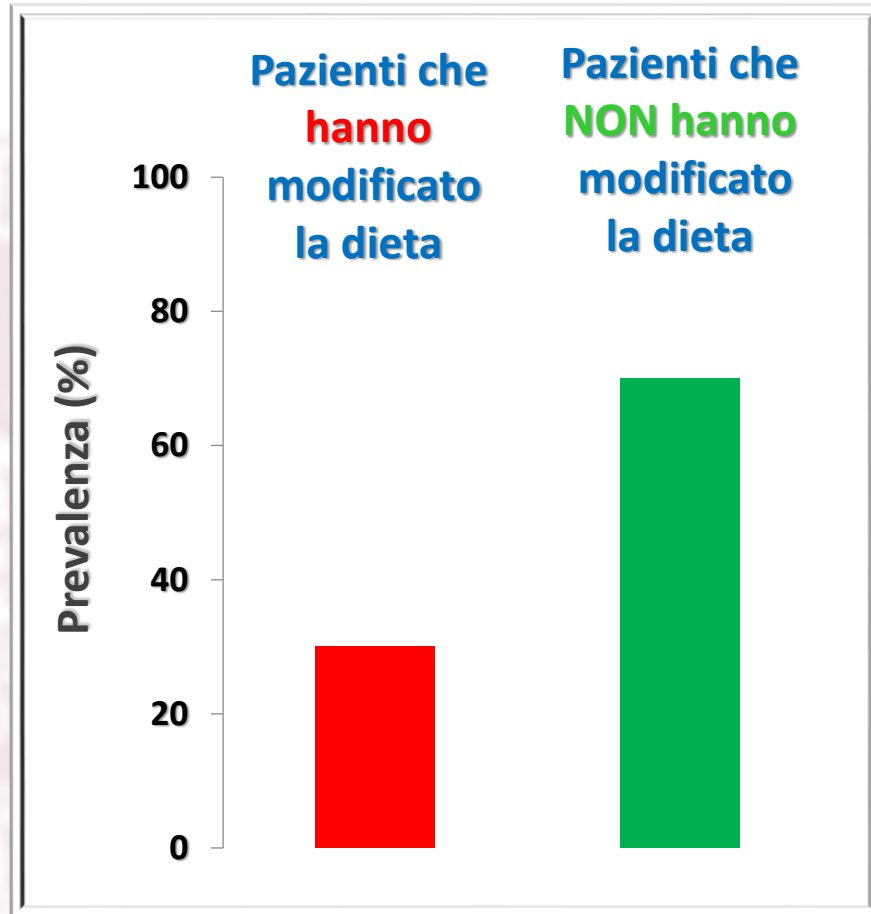
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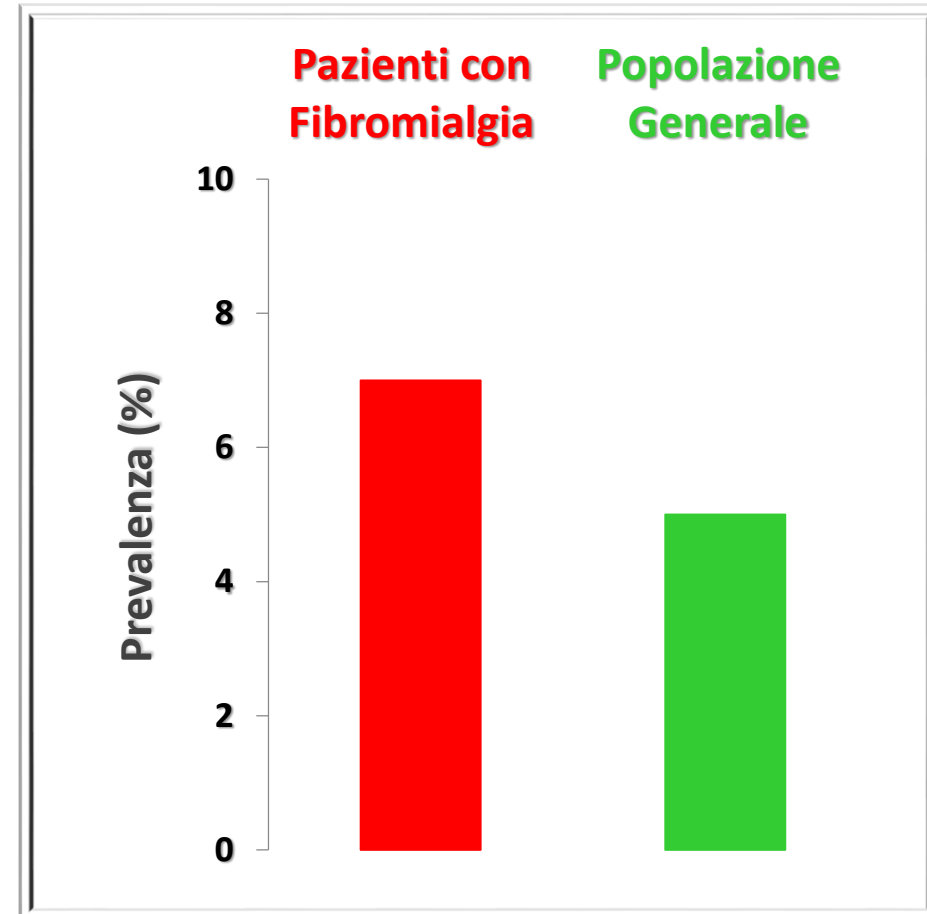
Cleveland CH Jr et al, *Allergy Proc* 1992

# MODIFICAZIONE DELLA DIETA ALLA DIAGNOSI IN PAZIENTI CON FM

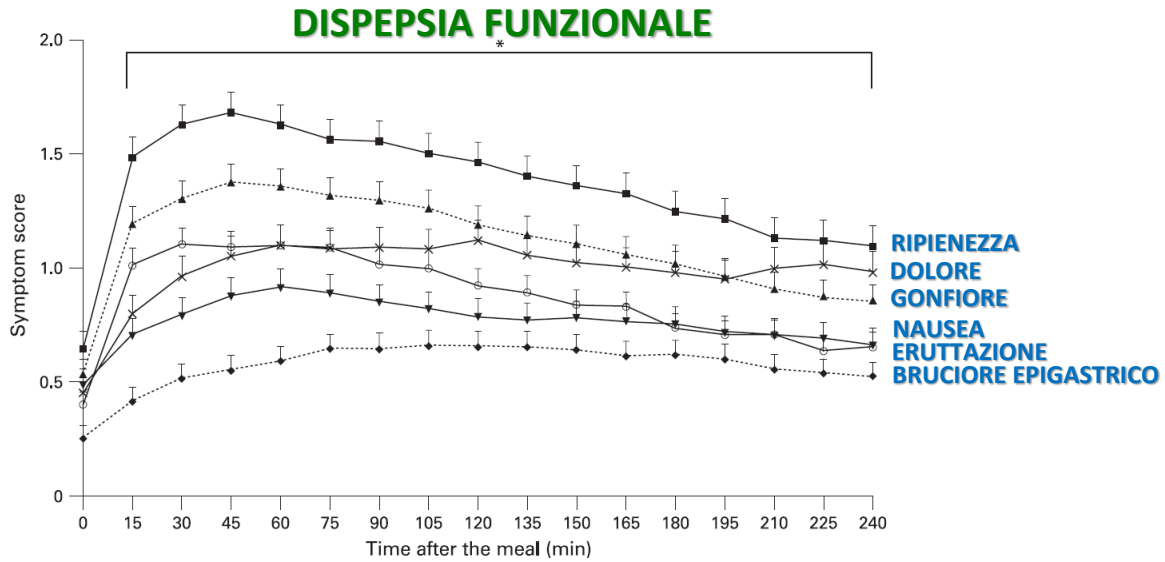
## Prevalenza di modificazioni della dieta alla diagnosi di Fibromialgia



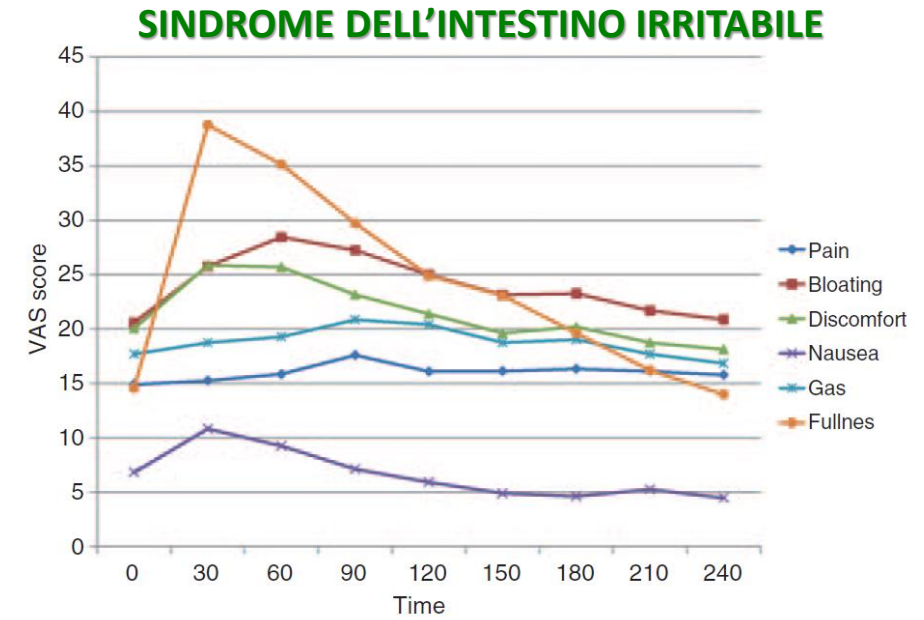
## Prevalenza di reazioni avverse al cibo alla diagnosi di Fibromialgia



# SINTOMI INDOTTI DAL PASTO IN PAZIENTI CON PATOLOGIA FUNZIONALE GASTROINTESTINALE

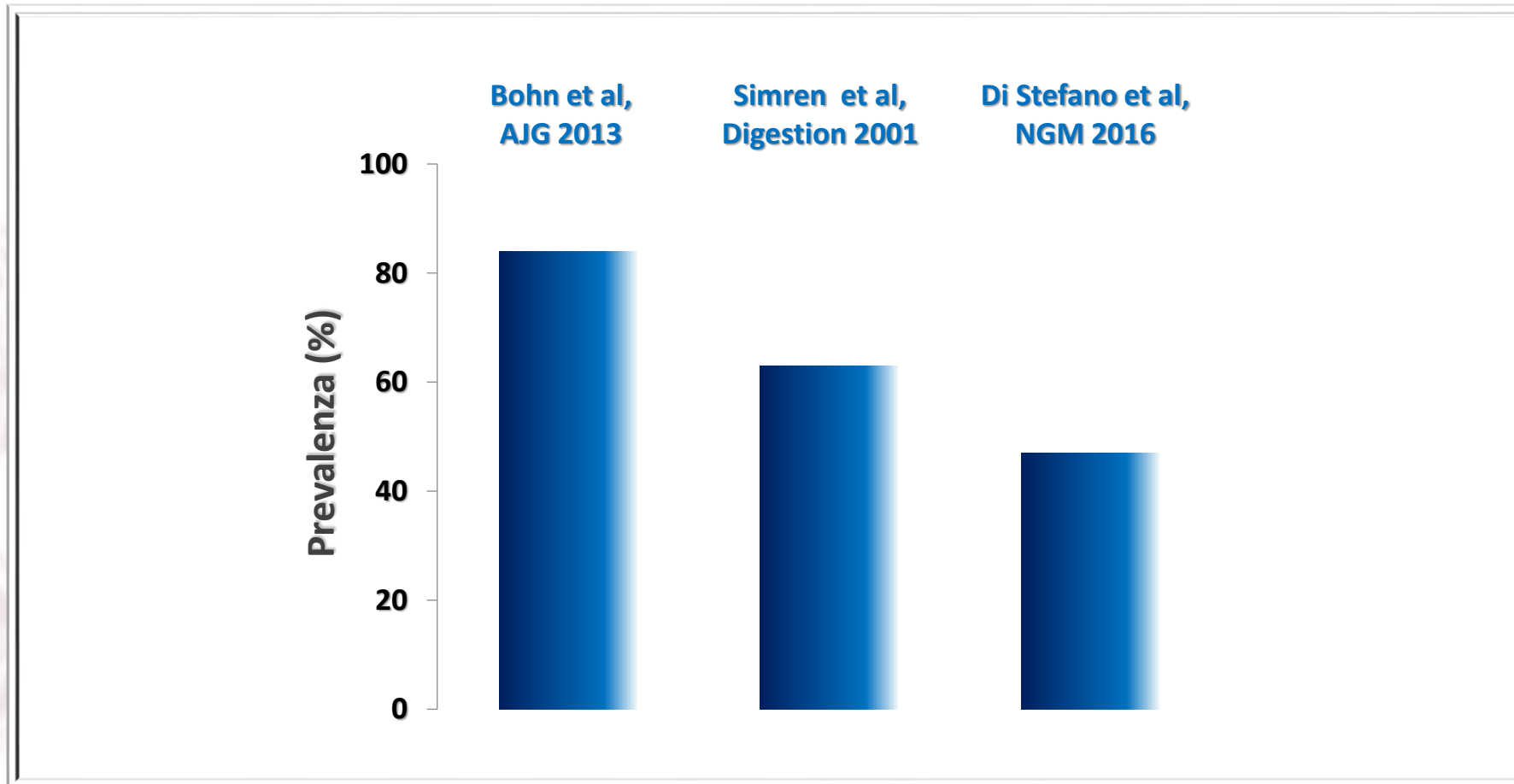


Bisshops R et al, *Gut* 2008



Posserud I et al, *UEGJ* 2013

# PREVALENCE OF POST-PRANDIAL SYMPTOMS IN IRRITABLE BOWEL SYNDROME



# FREQUENZA DI SINTOMI E COMORBIDITA' NELLA FIBROMIALGIA

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La sindrome dell'intestino irritabile rappresenta il disordine gastrointestinale **più comunemente correlato** alla fibromialgia con tassi di prevalenza che variano dal **32% all'81%**, a seconda dei criteri diagnostici utilizzati

Sperber AD et al, *AJG* 1999  
Kurland JE et al, *Dig Dis Sci* 2006  
Sperber AD et al, *JNM* 2010

# FREQUENZA DI SINTOMI E COMORBIDITA' NELLA FIBROMIALGIA

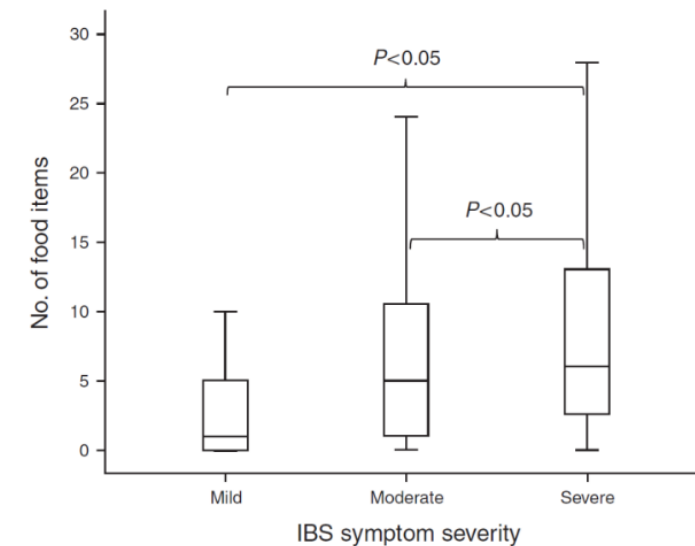
| Current Symptom          | Frequency |
|--------------------------|-----------|
| Low back pain            | 63%       |
| Recurrent headaches      | 47%       |
| Arthritis                | 46%       |
| Muscle spasm             | 46%       |
| Tingling                 | 46%       |
| Balance problems         | 45%       |
| Irritable bowel syndrome | 44%       |
| Numbness                 | 44%       |
| Chronic fatigue          | 40%       |
| Bloating                 | 40%       |
| Depression               | 40%       |
| Anxiety                  | 38%       |
| Sinus problems           | 37%       |
| Tooth disorders          | 32%       |
| Restless legs            | 32%       |
| Tinnitus                 | 30%       |
| Jaw pain                 | 29%       |
| Bladder problems         | 26%       |
| Rashes                   | 25%       |

Bennett RM et al, *BMC Muscoloskel Dis* 2007

# ALIMENTI RESPONSABILI DI SINTOMI MODERATO/SEVERI NELL'IBS

|                       |                   | Number of patients with |                 |                      |           |
|-----------------------|-------------------|-------------------------|-----------------|----------------------|-----------|
|                       |                   | moderate symptoms       | severe symptoms | very severe symptoms | total     |
| Animal products       | Pork              | 37 (11%)                | 10 (3%)         | 5 (2%)               | 52 (16%)  |
|                       | Beef              | 35 (11%)                | 12 (4%)         | 4 (1%)               | 51 (15%)  |
|                       | Egg               | 41 (12%)                | 23 (7%)         | 12 (4%)              | 76 (23%)  |
|                       | Cheese            | 43 (13%)                | 16 (5%)         | 8 (2%)               | 67 (20%)  |
|                       | Cream             | 56 (17%)                | 37 (11%)        | 30 (9%)              | 122 (37%) |
|                       | Milk              | 49 (15%)                | 28 (8%)         | 22 (7%)              | 99 (30%)  |
| Cereal products       | Pasta             | 34 (10%)                | 8 (2%)          | 2 (0.6%)             | 44 (13%)  |
|                       | Wheat bran        | 26 (8%)                 | 9 (3%)          | 9 (3%)               | 44 (13%)  |
|                       | Breakfast cereals | 27 (8%)                 | 5 (2%)          | 1 (0.3%)             | 33 (10%)  |
|                       | Crispbread        | 38 (12%)                | 8 (2%)          | 5 (2%)               | 51 (16%)  |
|                       | Wholemeal bread   | 52 (16%)                | 21 (6%)         | 8 (2%)               | 81 (25%)  |
|                       | White bread       | 39 (12%)                | 16 (5%)         | 8 (2%)               | 63 (19%)  |
| Fruits and vegetables | Citrus fruits     | 43 (13%)                | 20 (6%)         | 12 (4%)              | 75 (23%)  |
|                       | Bananas           | 30 (9%)                 | 8 (2%)          | 9 (3%)               | 47 (14%)  |
|                       | Pears             | 38 (12%)                | 20 (6%)         | 5 (2%)               | 63 (19%)  |
|                       | Apples            | 52 (16%)                | 31 (9%)         | 13 (4%)              | 96 (29%)  |
|                       | Tomatoes          | 26 (8%)                 | 10 (3%)         | 3 (1%)               | 39 (12%)  |
|                       | Red/green pepper  | 53 (16%)                | 37 (11%)        | 23 (7%)              | 113 (34%) |
|                       | Raw vegetables    | 65 (20%)                | 31 (9%)         | 15 (5%)              | 111 (34%) |
|                       | Cabbage           | 82 (25%)                | 63 (19%)        | 43 (13%)             | 188 (57%) |
|                       | Onion             | 82 (25%)                | 66 (20%)        | 38 (12%)             | 186 (56%) |
|                       | Peas/beans        | 86 (26%)                | 45 (14%)        | 22 (7%)              | 153 (46%) |
|                       | Maize             | 32 (10%)                | 10 (3%)         | 9 (3%)               | 51 (15%)  |
| Potatoes              | 13 (4%)           | 5 (2%)                  | 3 (1%)          | 21 (6%)              |           |
| Various products      | Hot spices        | 72 (22%)                | 53 (16%)        | 24 (7%)              | 149 (45%) |
|                       | Chewing gums      | 43 (13%)                | 31 (9%)         | 10 (3%)              | 84 (26%)  |
|                       | Chocolate         | 62 (19%)                | 21 (6%)         | 9 (3%)               | 92 (28%)  |
|                       | Pastries          | 69 (21%)                | 26 (8%)         | 14 (4%)              | 109 (33%) |
|                       | Fried food        | 68 (21%)                | 33 (10%)        | 14 (2%)              | 115 (35%) |
|                       | Deep-fried food   | 62 (19%)                | 51 (15%)        | 33 (10%)             | 145 (44%) |
|                       | Smoked food       | 48 (15%)                | 51 (15%)        | 17 (5%)              | 116 (35%) |
|                       | Alcohol           | 68 (21%)                | 30 (9%)         | 12 (4%)              | 110 (33%) |
|                       | Tea               | 27 (8%)                 | 14 (4%)         | 3 (1%)               | 44 (13%)  |
|                       | Coffee            | 72 (22%)                | 29 (9%)         | 27 (8%)              | 128 (39%) |
|                       | Pizza             | 76 (23%)                | 42 (13%)        | 27 (8%)              | 144 (44%) |

## Numero di alimenti che causano sintomi e severità dell'IBS



Bohn L et al, *AJG* 2013

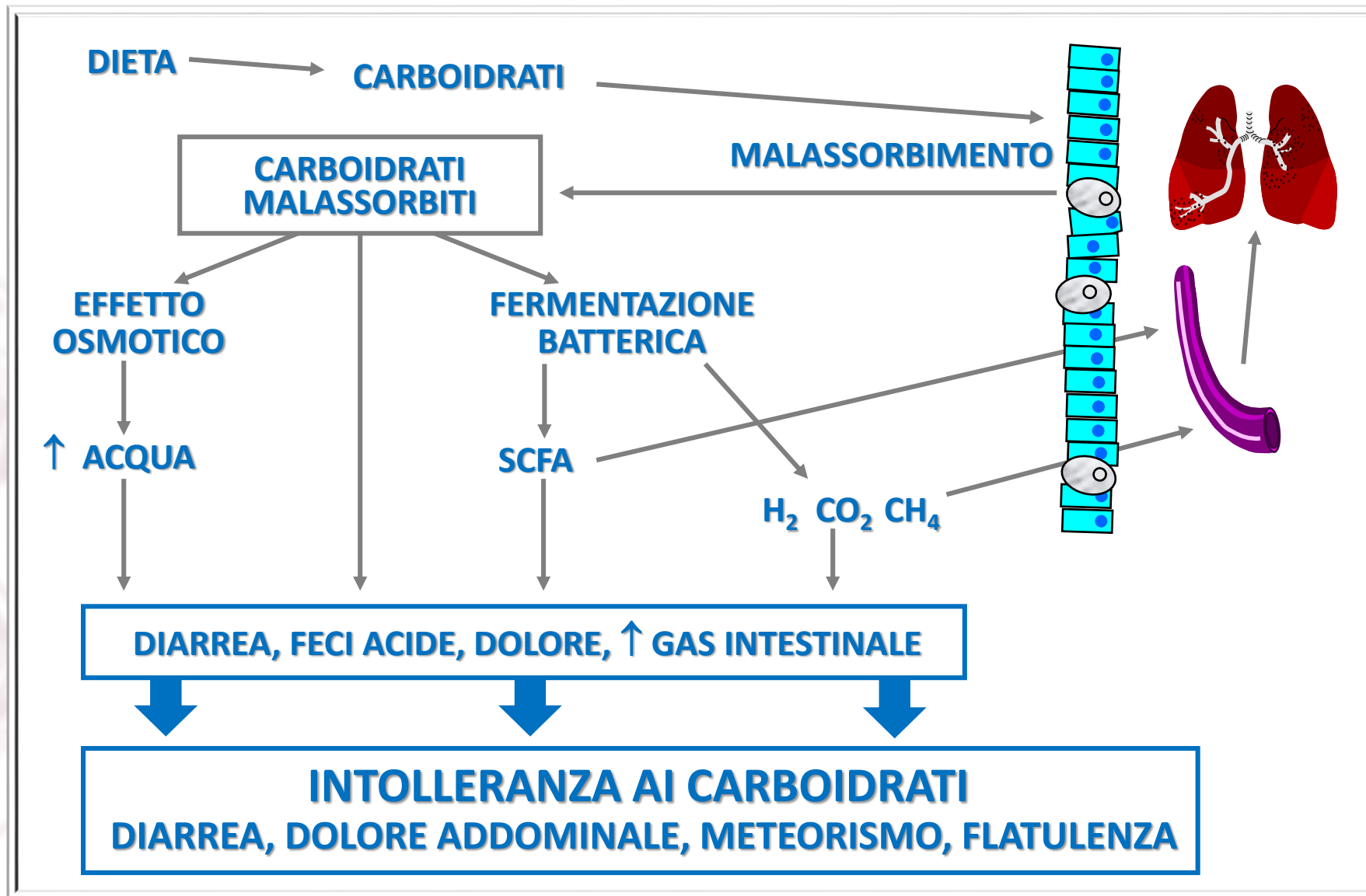
# EFFETTO DELLA FIBRA ALIMENTARE IN PAZIENTI CON IBS

| Alimento                       | Miglioramento (%) | Peggioramento (%) | Invariato (%) |
|--------------------------------|-------------------|-------------------|---------------|
| <b>Fibra alimentare</b>        | <b>10</b>         | <b>55</b>         | <b>35</b>     |
| <b>Cornflakes</b>              | <b>0</b>          | <b>0</b>          | <b>100</b>    |
| <b>Riso soffiato croccante</b> | <b>0</b>          | <b>0</b>          | <b>100</b>    |
| <b>Porridge</b>                | <b>0</b>          | <b>12</b>         | <b>88</b>     |
| <b>Muesli</b>                  | <b>0</b>          | <b>27</b>         | <b>73</b>     |
| <b>Ortaggi/Verdure</b>         | <b>3</b>          | <b>25</b>         | <b>72</b>     |
| <b>Frutta</b>                  | <b>5</b>          | <b>45</b>         | <b>50</b>     |
| <b>Legumi</b>                  | <b>0</b>          | <b>25</b>         | <b>75</b>     |
| <b>Frutta secca</b>            | <b>0</b>          | <b>27</b>         | <b>73</b>     |

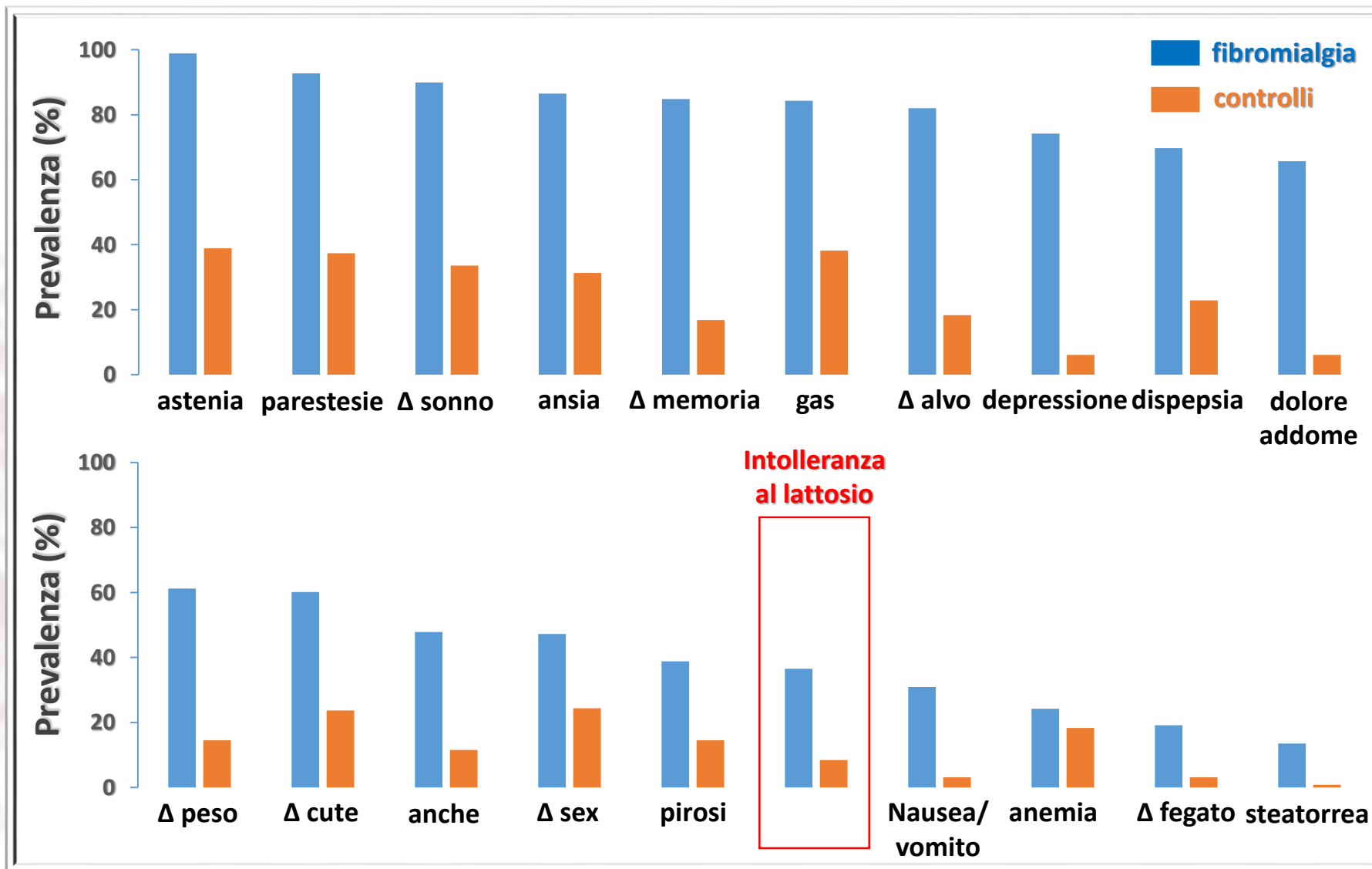
Francis & Whorwell, *Lancet* 1994



# FISIOPATOLOGIA DEL MALASSORBIMENTO DI CARBOIDRATI



# FREQUENZA DI SINTOMI CELIAC-LIKE IN 178 PAZIENTI CON FIBROMIALGIA

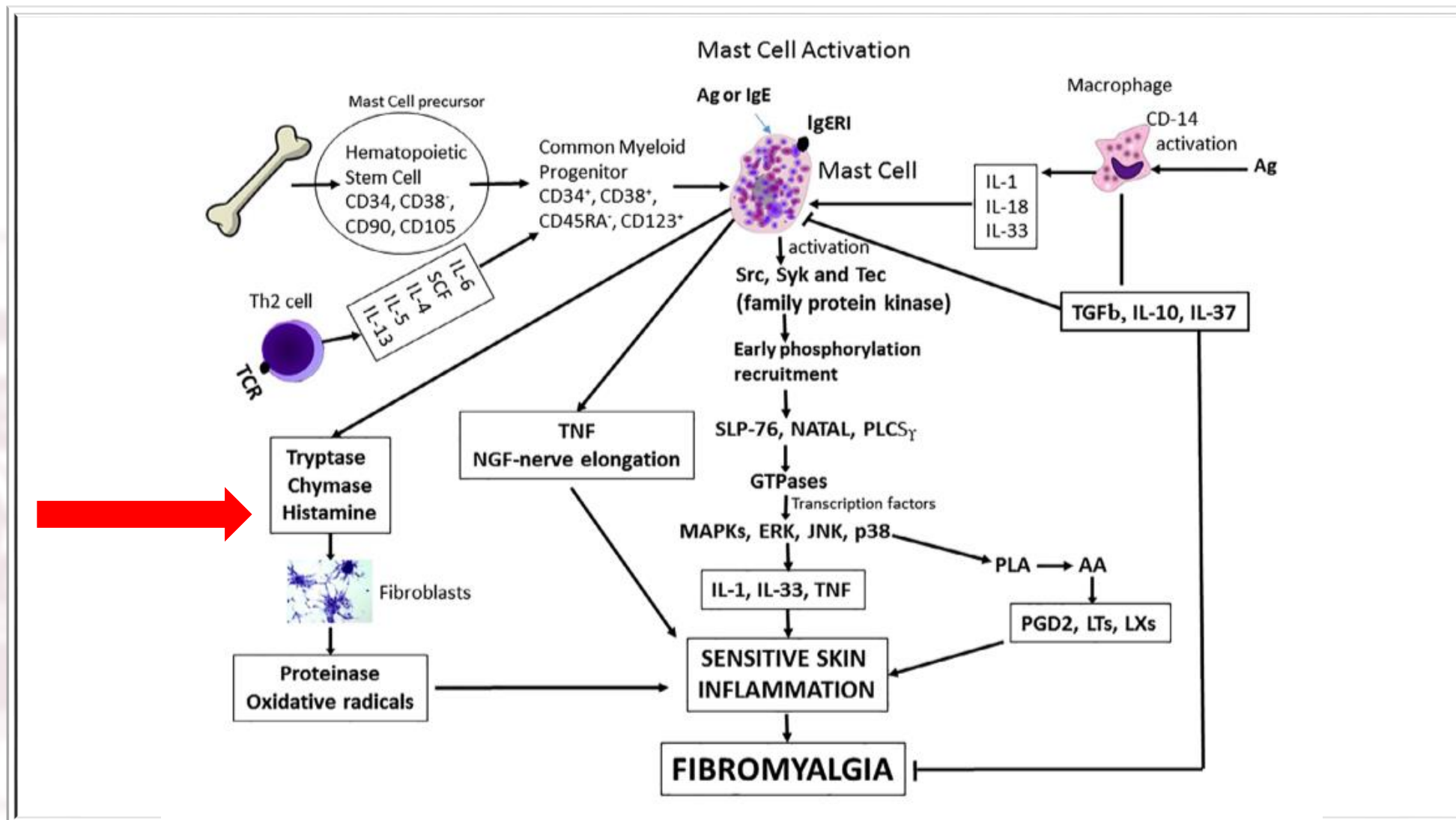


# PRODOTTI CASEARI E SINTOMI DA INTOLLERANZA IN IBS

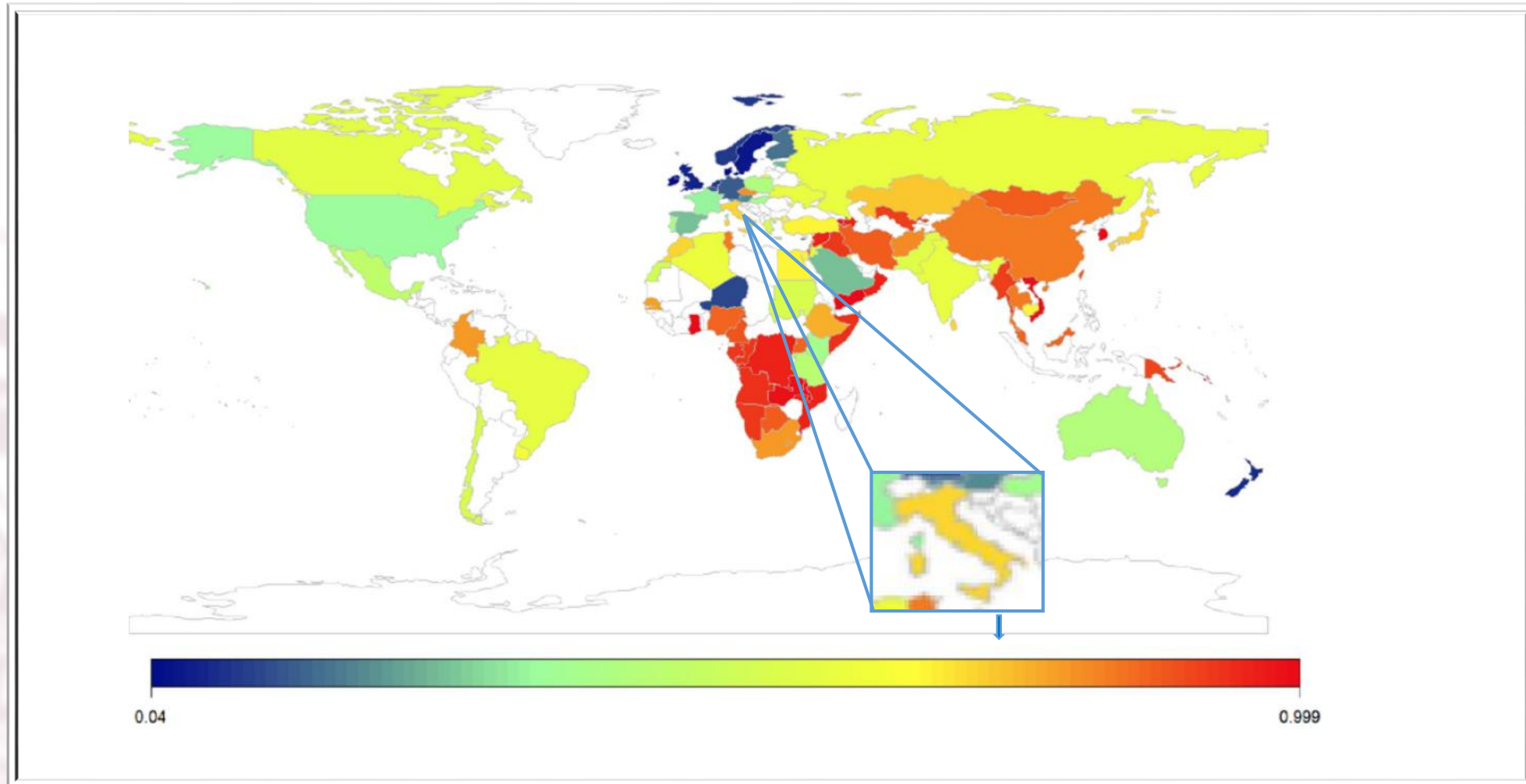
| Food item/food group                              | Number of patients who reported GI symptoms with each food item/food group (n=197) |
|---|--|
| <b><i>Incompletely absorbed carbohydrates</i></b> |  |
| Dairy products (milk, sour milk, yogurt, cheese)  | 97 (49.2%)   |
| Beans/lentils                                     | 71 (36.0%)   |
| Apple   | 55 (27.9%)   |
| Flour (wheat and other)                           | 48 (24.4%)   |
| Plum  | 46 (23.4%)   |
| Peas  | 38 (19.3%)   |
| Chocolate   | 33 (16.8%)   |
| Pear  | 31 (15.7%)   |
| Bananas   | 25 (12.7%)   |
| Dried fruit                                       | 25 (12.7%)   |
| Nectarine   | 23 (11.7%)   |
| Apricot   | 20 (10.2%)   |
| Potato  | 20 (10.2%)   |
| Cherries  | 19 (9.6%)  |
| Peach   | 19 (9.6%)  |
| Soy beans   | 11 (5.6%)  |
| Melon   | 10 (5.1%)  |
| Avocado   | 9 (4.6%)   |
| Celery  | 8 (4.1%)   |
| <i>Fatty/fried foods</i>                          | 103 (52.3%)  |

| Food item/food group              | Number of patients who reported GI symptoms with each food item/food group (n=197) |
|-----------------------------------|--|
| <b><i>Histamine-releasing</i></b> |  |
| Milk                              | 85 (43.1%)   |
| Wine/beer                         | 61 (31.0%)   |
| Pork                              | 41 (20.8%)   |
| Chocolate                         | 33 (16.8%)   |
| Orange                            | 33 (16.8%)   |
| Shellfish                         | 25 (12.7%)   |
| Strawberries                      | 22 (11.2%)   |
| Tomato                            | 18 (9.1%)  |
| Fish                              | 10 (5.1%)  |
| Egg                               | 0  |

# MAST CELL ACTIVATION IN SENSITIVE SKIN FROM FM PATIENTS



# PREVALENCE OF LACTOSE MALABSORPTION



Misselwitz B et al, *Gut* 2019

# CONSUMO PRO-CAPITE DI LATTE IN ITALIA

| Indicatori                              |        | 2012       |      |        |            | 2016       |      |        |            |
|---|--------|------------|------|--------|------------|------------|------|--------|------------|
|   | udm    | LATTE tot. | UHT  | FRESCO | ARRICCHITO | LATTE tot. | UHT  | FRESCO | ARRICCHITO |
| <i>Indice di penetrazione</i>           | (%)    | 96,8       | 86,2 | 54,5   | 35,8       | 96,4       | 86,3 | 51     | 34,3       |
| <i>Acquirenti in promozione</i>         | (%)    | 65,9       | 53,8 | 21,5   | 18,2       | 67,4       | 56,8 | 20,5   | 17         |
| <i>Prezzo medio</i>                     | (€/Kg) | 1,1        | 0,9  | 1,3    | 4,7        | 1,1        | 0,8  | 1,3    | 4,4        |
| <i>Acquisto medio per famiglia/anno</i> |        |            |      |        |            |            |      |        |            |
| - in volume                             | (Kg)   | 87,8       | 63,7 | 51,1   | 6          | 81,2       | 61,2 | 46,2   | 5,9        |
| - in valore                             | (€)    | 97,7       | 55,3 | 67     | 28,6       | 87,3       | 51,6 | 60,3   | 26,1       |
| <i>N. medio di atti d'acquisto/anno</i> | (n)    | 35,5       | 18,8 | 33,3   | 7,6        | 33,3       | 18,9 | 30,3   | 7,4        |
| <i>Intervallo d'acquisto/anno</i>       | (gg)   | 10,2       | 19,3 | 10,9   | 47,8       | 10,9       | 19,2 | 12     | 48,9       |
| <i>Acquisto medio per atto</i>          |        |            |      |        |            |            |      |        |            |
| - in volume                             | (Kg)   | 2,5        | 3,4  | 1,5    | 0,8        | 2,4        | 3,2  | 1,5    | 0,8        |
| - in valore                             | (€)    | 2,7        | 2,9  | 2      | 3,8        | 2,6        | 2,7  | 2      | 3,5        |

ISMEA su dati Nielsen Consumer Panel

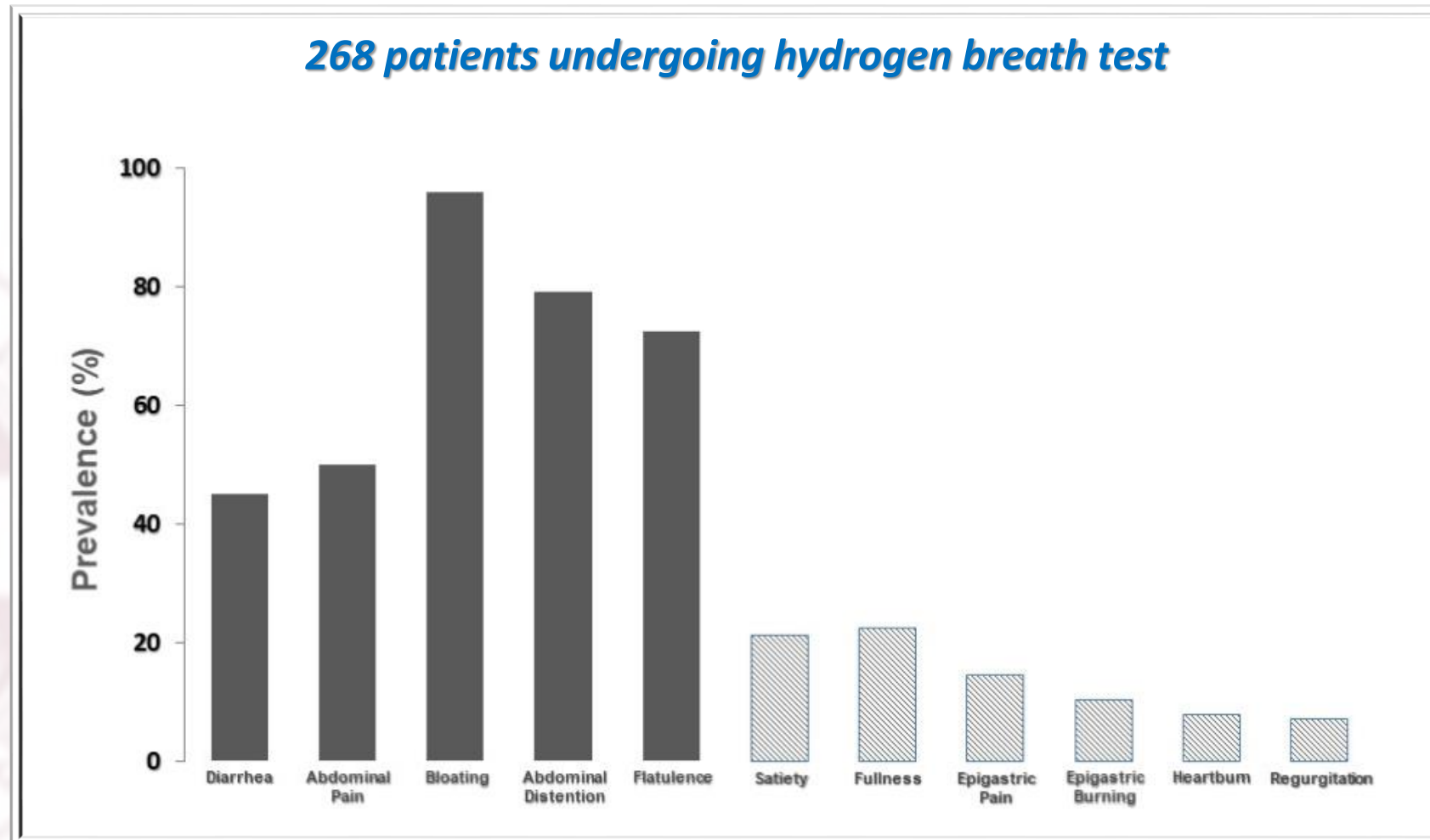
# CONSUMO PRO-CAPITE DI LATTE NEL MONDO

| Paese           | 2013 Kg | 2014 Kg | 2015 Kg | 2016 Kg | 2017 Kg | 2018 Kg | ± su 2017 |
|-----------------|---------|---------|---------|---------|---------|---------|-----------|
| Belarus         | 106,55  | 111,12  | 112,27  | 110,76  | 112,48  | 111,09  | ▼ -1,24%  |
| Ukraine         | 117,83  | 123,39  | 120,58  | 117,94  | 113,02  | 110,48  | ▼ -2,25%  |
| Australia       | 107,73  | 110,76  | 113,45  | 105,70  | 103,47  | 105,76  | ▲ +2,22%  |
| New Zealand     | 99,82   | 108,39  | 107,69  | 106,63  | 105,61  | 105,26  | ▼ -0,33%  |
| Canada          | 84,58   | 82,74   | 81,31   | 80,38   | 78,75   | 76,64   | ▼ -2,68%  |
| United States * | 77,42   | 74,66   | 73,07   | 72,07   | 70,02   | 68,00   | ▼ -2,89%  |
| EU-28           | 66,91   | 67,16   | 66,47   | 65,86   | 65,61   | 65,38   | ▼ -0,34%  |
| India           | 42,55   | 46,36   | 48,70   | 51,13   | 53,90   | 56,26   | ▲ +4,38%  |
| Brazil          | 44,64   | 47,30   | 46,48   | 46,23   | 47,75   | 51,04   | ▲ +6,89%  |
| Russia          | 70,68   | 68,58   | 66,02   | 62,24   | 59,41   | 50,83   | ▼ -14,44% |
| Argentina       | 48,75   | 47,76   | 48,25   | 39,18   | 37,97   | 39,63   | ▲ +4,37%  |
| Mexico          | 33,95   | 33,65   | 33,24   | 32,80   | 32,32   | 31,99   | ▼ -1,01%  |
| Japan           | 30,96   | 30,49   | 30,72   | 31,22   | 31,17   | 31,41   | ▲ +0,76%  |
| South Korea     | 31,63   | 30,56   | 30,22   | 29,53   | 30,62   | 30,61   | ▼ -0,04%  |
| Taiwan          | 15,25   | 15,76   | 16,35   | 16,85   | 17,27   | 17,73   | ▲ +2,65%  |
| China           | 9,15    | 9,33    | 9,40    | 8,95    | 9,09    | 8,97    | ▼ -1,25%  |
| Philippines     | 0,65    | 0,59    | 0,61    | 0,78    | 0,82    | 0,90    | ▲ +9,96%  |

5°

Ultimo aggiornamento: 12/02/2020

# LACTOSE-RELATED SYMPTOMS REPORTED BY PATIENTS

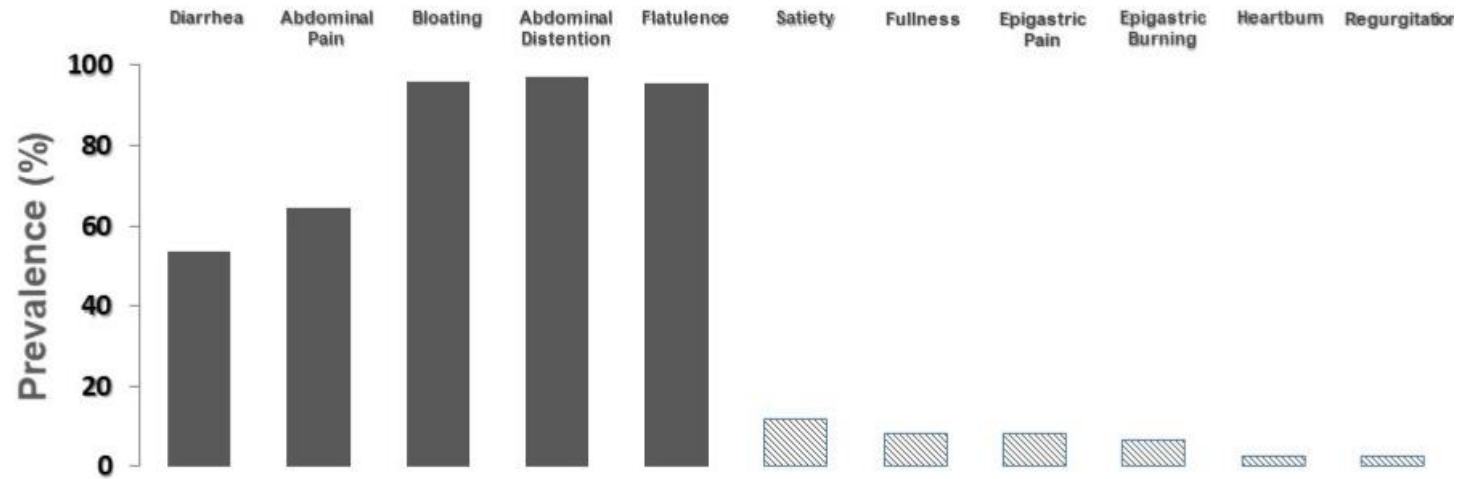


Di Stefano M et al, *Int J Environ Res Public Health* 2022

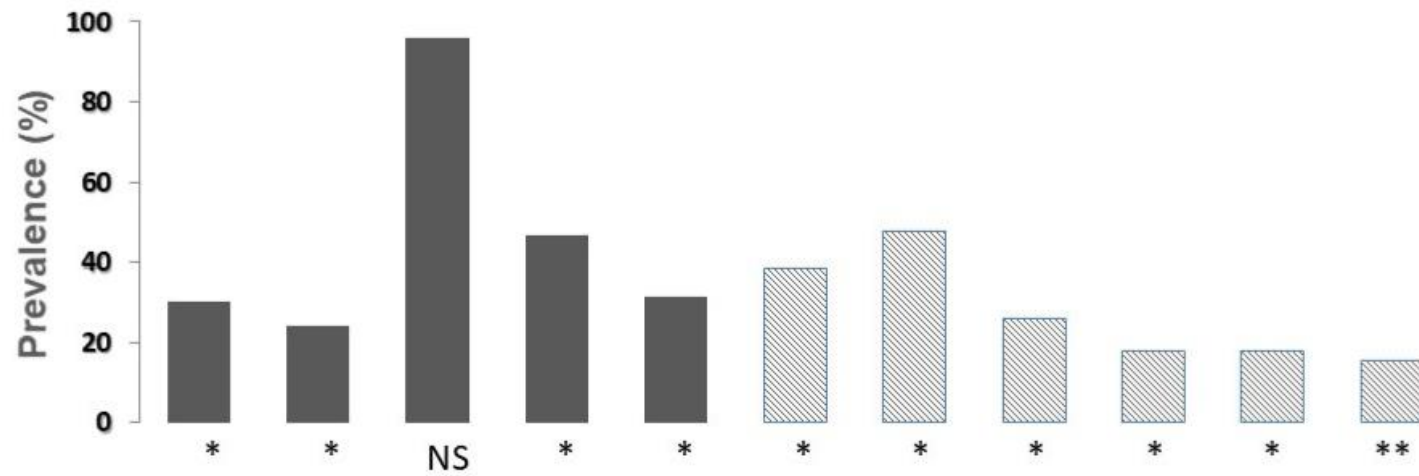


# LACTOSE-RELATED SYMPTOMS REPORTED BY PATIENTS

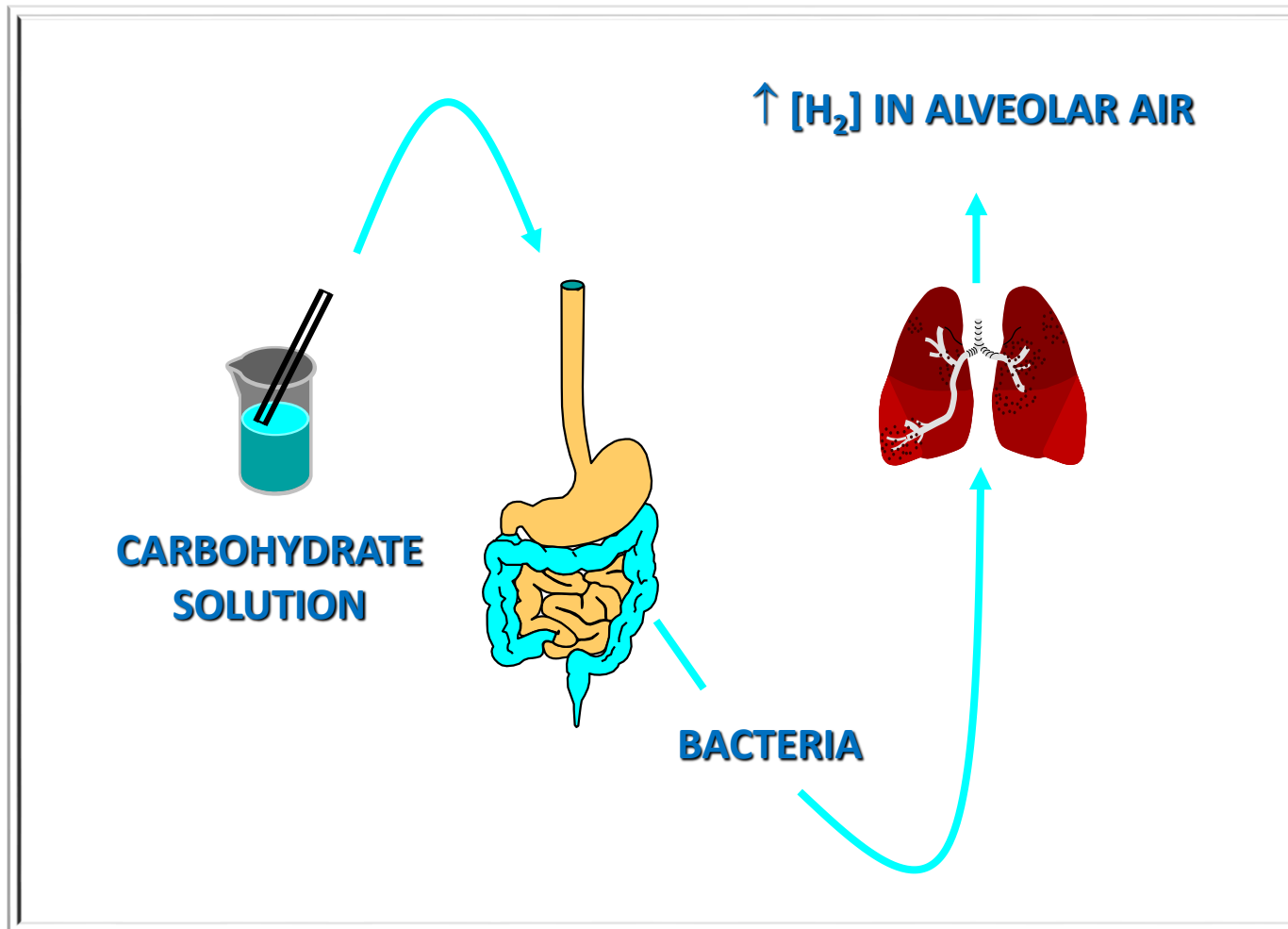
## Patients with Lactose Malabsorption



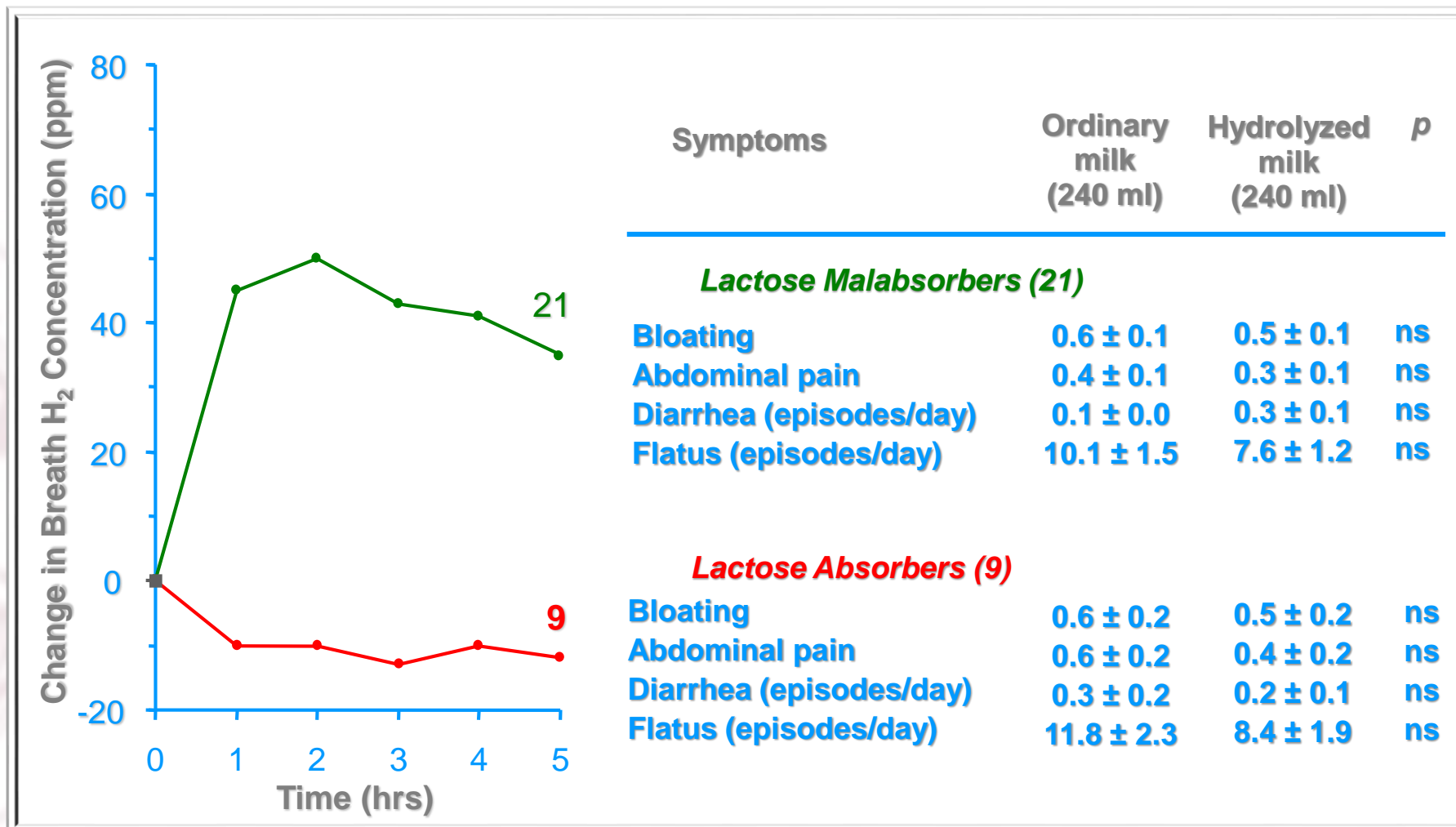
## Patients with Normal Lactose Absorption



# HYDROGEN BREATH TEST FOR CARBOHYDRATE MALABSORPTION

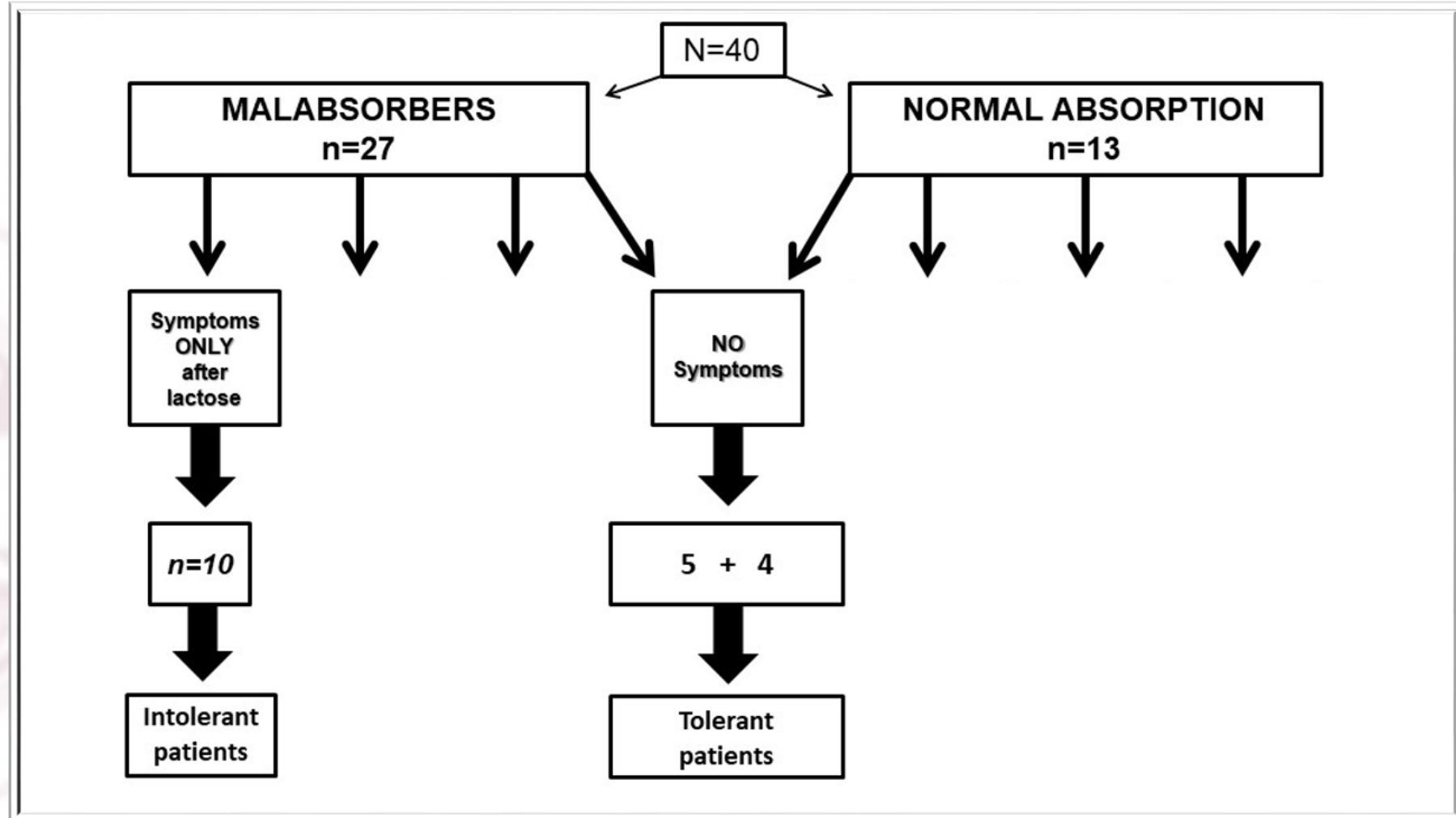


# A RANDOMIZED, DOUBLE-BLIND, CROSSOVER TRIAL IN SELF-REPORTED SEVERE LACTOSE INTOLERANT PATIENTS



Suarez et al, *NEJM* 1995

# SYMPTOM ONSET DURING BLINDED LACTOSE OR GLUCOSE BREATH TEST IN SELF-REPORTED LACTOSE INTOLERANCE

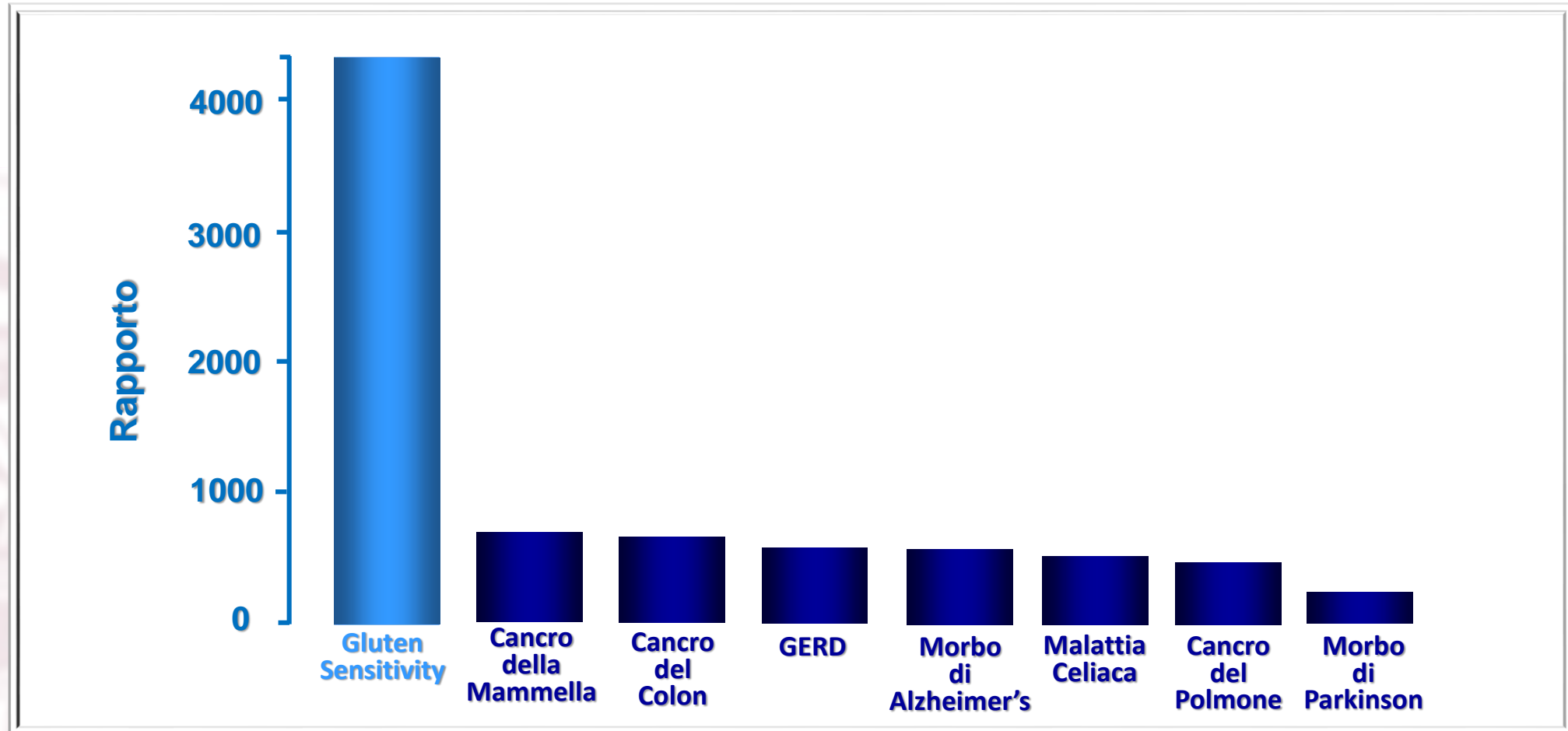


Di Stefano M et al, *Int J Environ Res Public Health* 2022

# CARATTERISTICHE CLINICHE DELLA NON-CELIAC GLUTEN SENSITIVITY

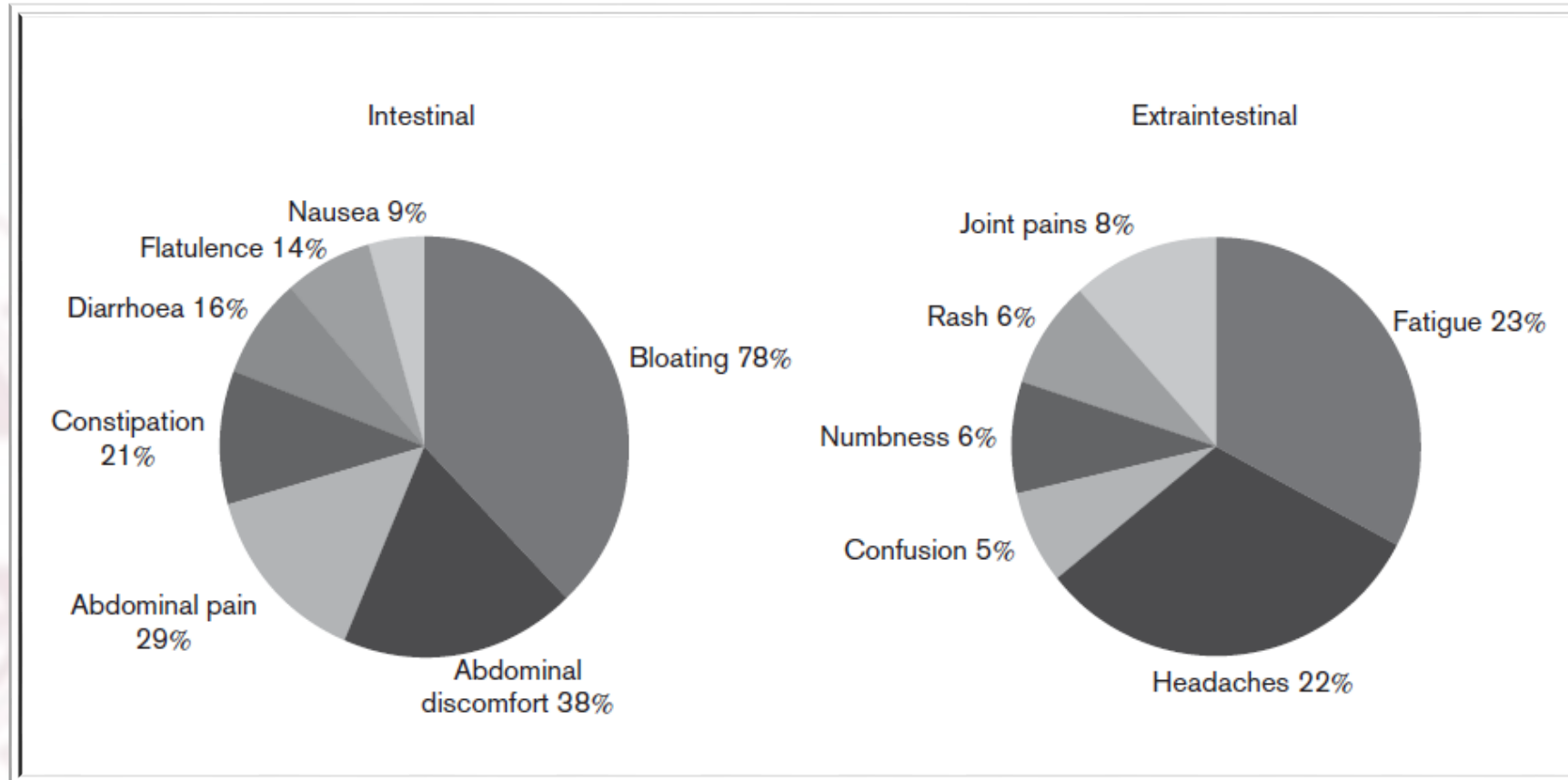
- Sintomi che **migliorano o scompaiono** dopo **abolizione del glutine** dalla dieta
- **Assenza** di lesioni intestinali
- **Negatività** degli anticorpi anti-transglutaminasi e anti-endomisio
- **Non associata** ad uno specifico pattern HLA
- Prevalenza **molto** elevata (6 volte > CD !)
- Standardized **mortality** ratio= 2.4 ?

# NCGS – CITAZIONI SU GOOGLE / CITAZIONI SU PUBMED



Corazza GR, *Ann Intern Med* 2012

# MANIFESTAZIONI CLINICHE DELLA NON-CELIAC GLUTEN SENSITIVITY

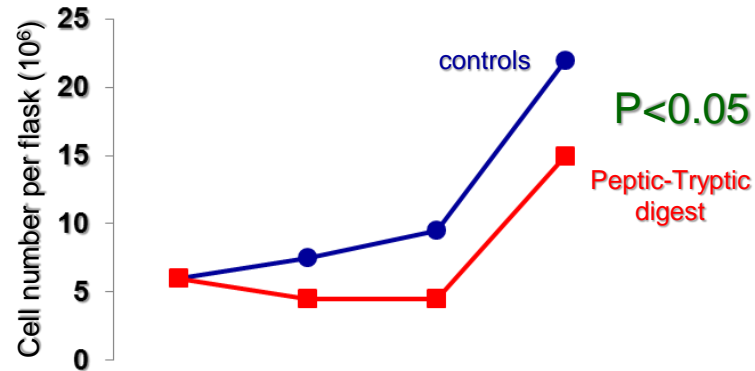


Aziz I, et al, *EJGH* 2013

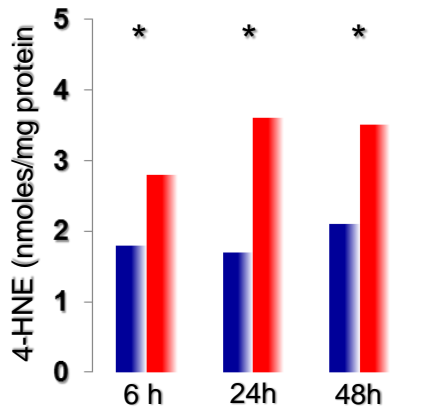
# TOSSICITA' DEL GLUTINE *IN VITRO*

## Incubazione con digesto peptico-triptico di comune pane di frumento

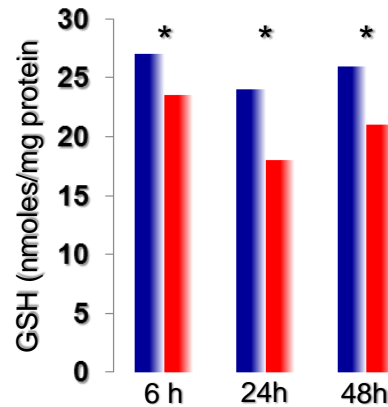
### Replicazione di Cellule Intestinali Caco-2



### Perossidazione lipidica

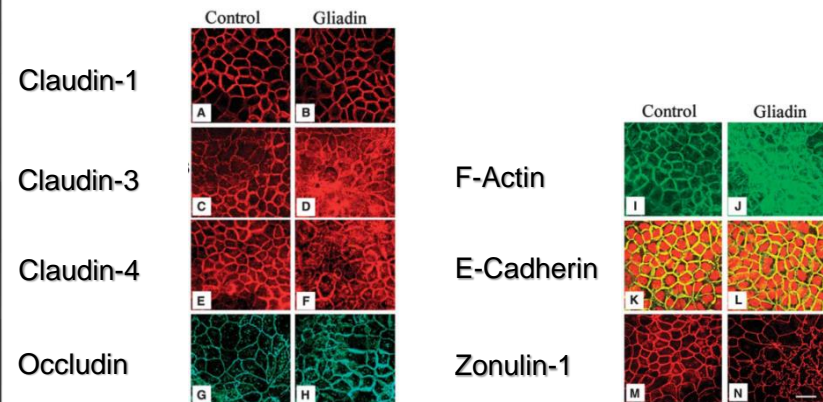
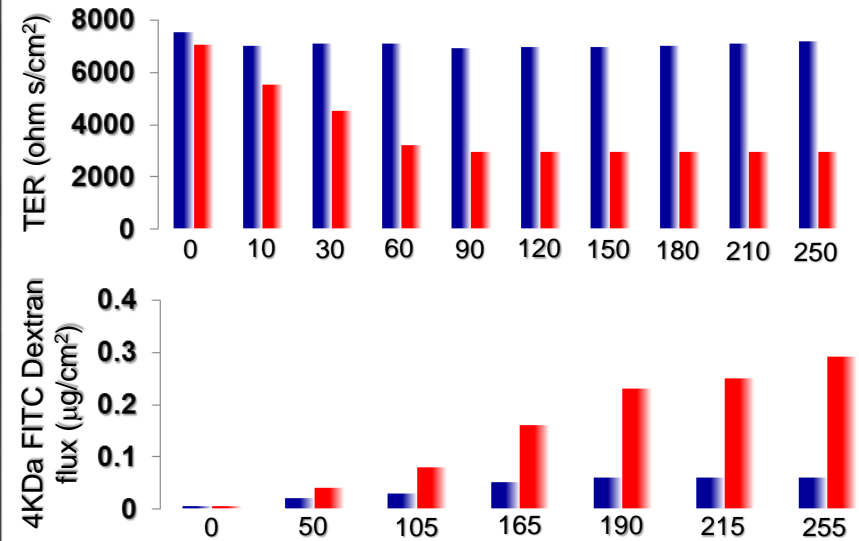


### GSH Intracellulare



Rivabene R et al, *BBA* 1999

### Permeabilità delle cellule Caco-2

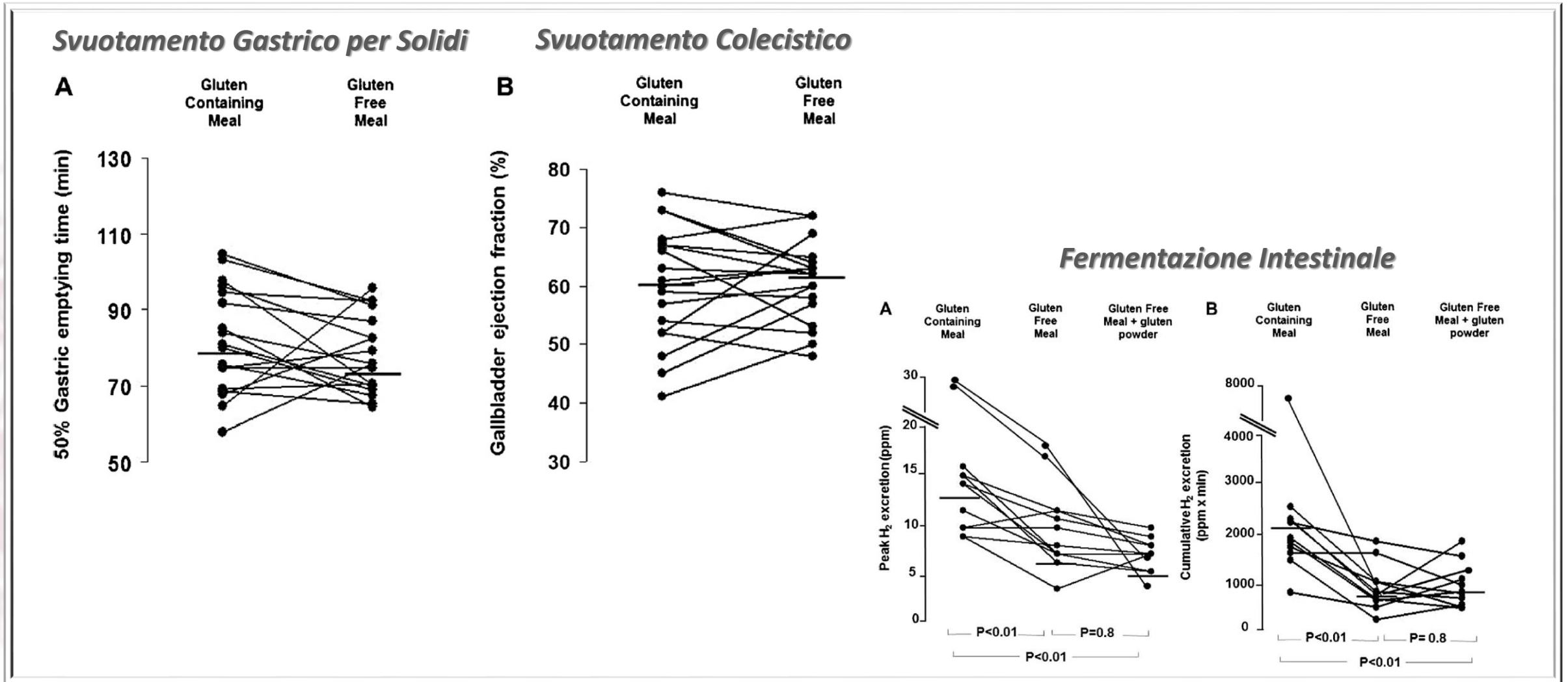


Sander GR et al, *FEBS Letters* 2005

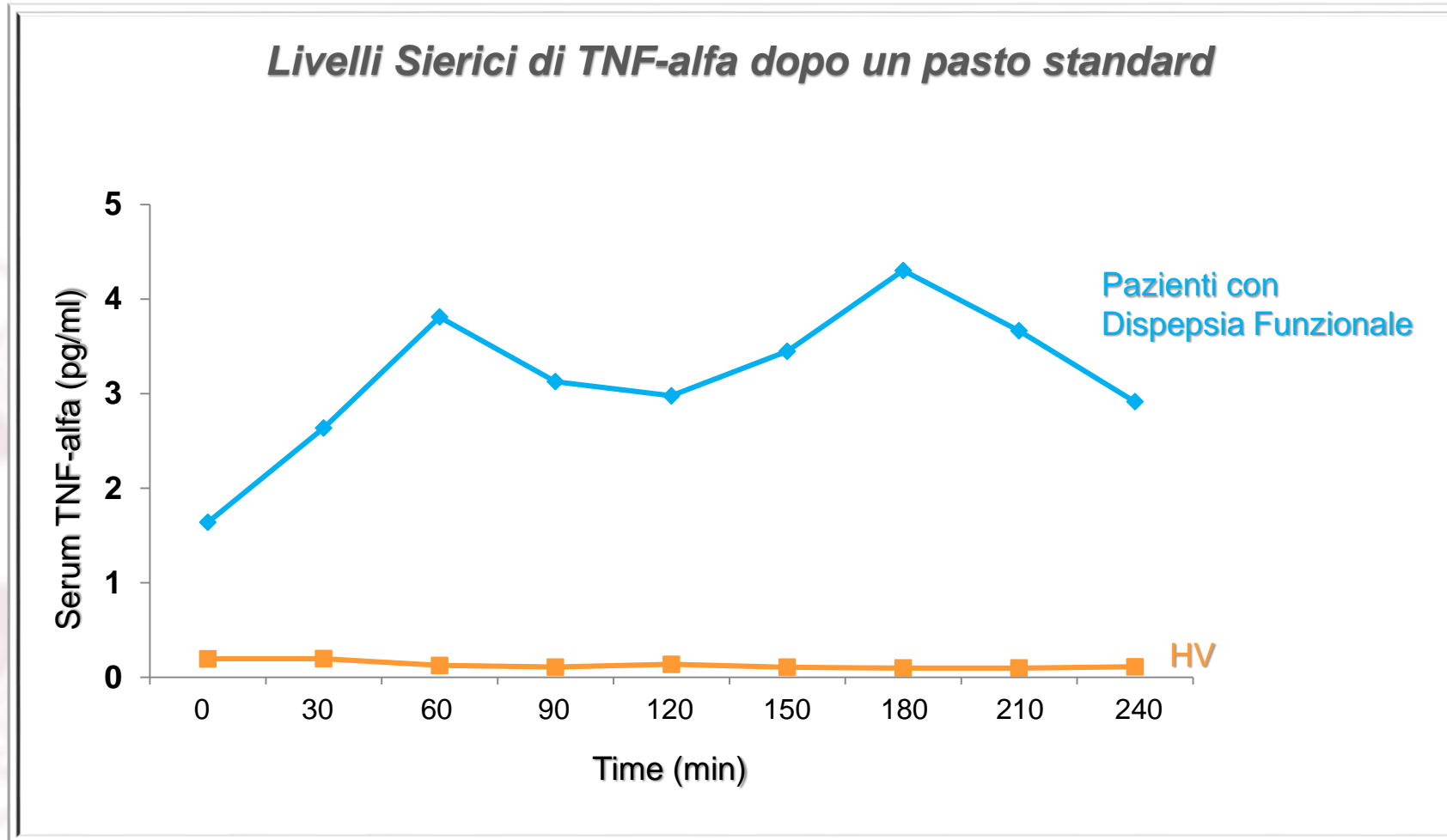


# TOSSICITA' DEL GLUTINE *IN VIVO*

Somministrazione di una porzione di pasta glutinata vs aglutinata in volontari sani

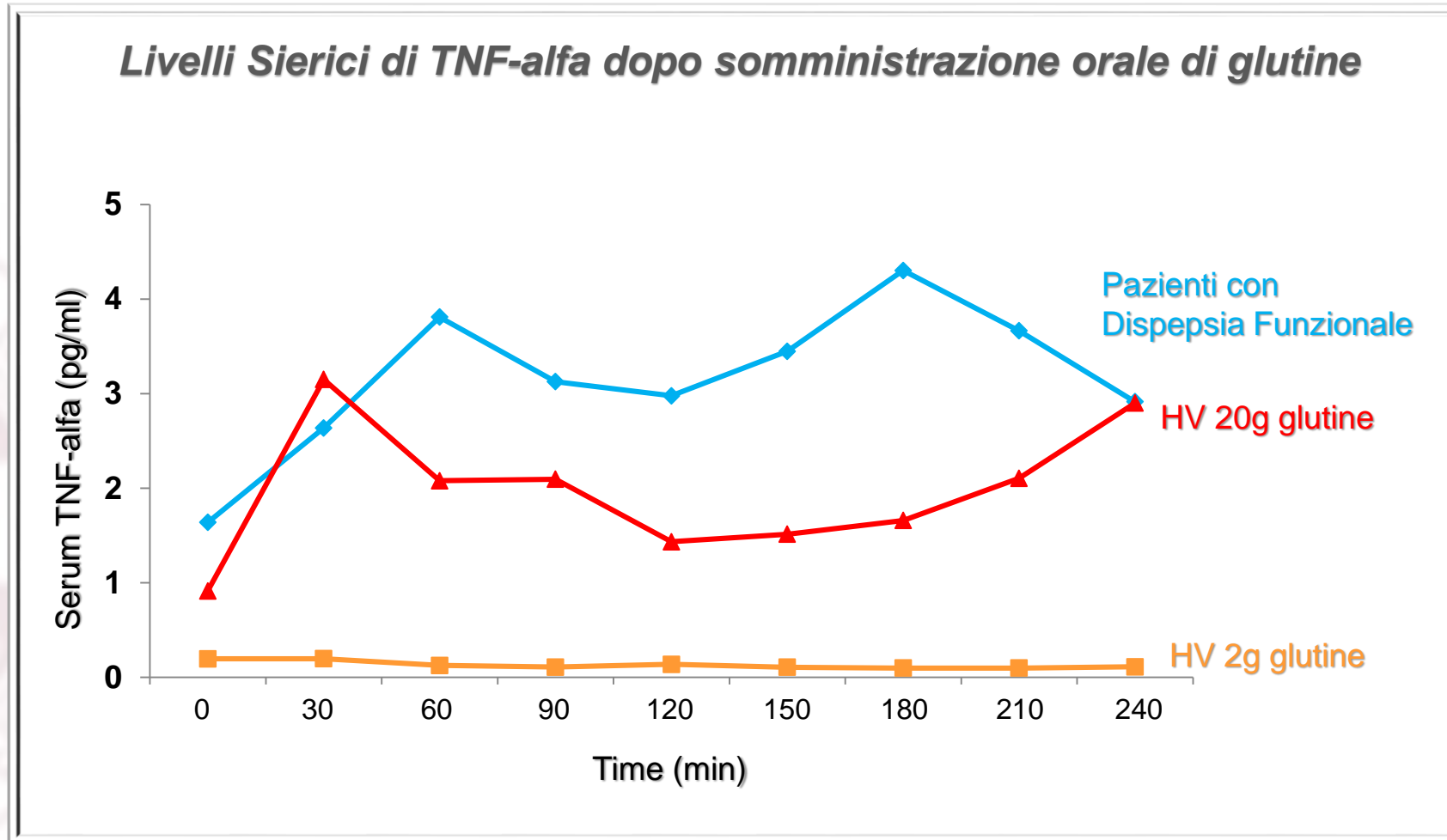


# I SISTEMI PRO-INFIAMMATORI NEL POSTPRANDIUM



Di Stefano M, 2016

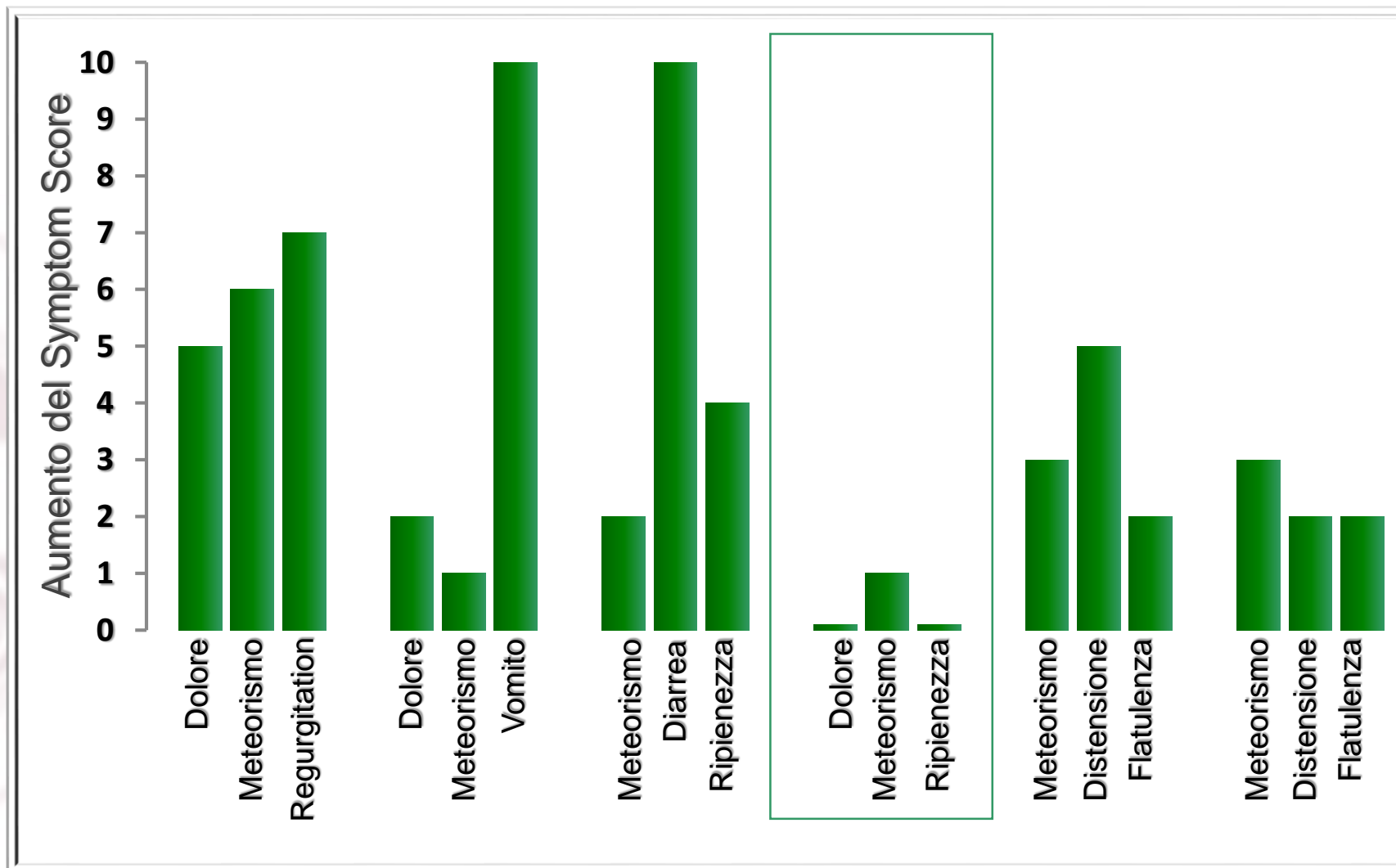
# TOSSICITA' DEL GLUTINE *IN VIVO* IN VOLONTARI SANI



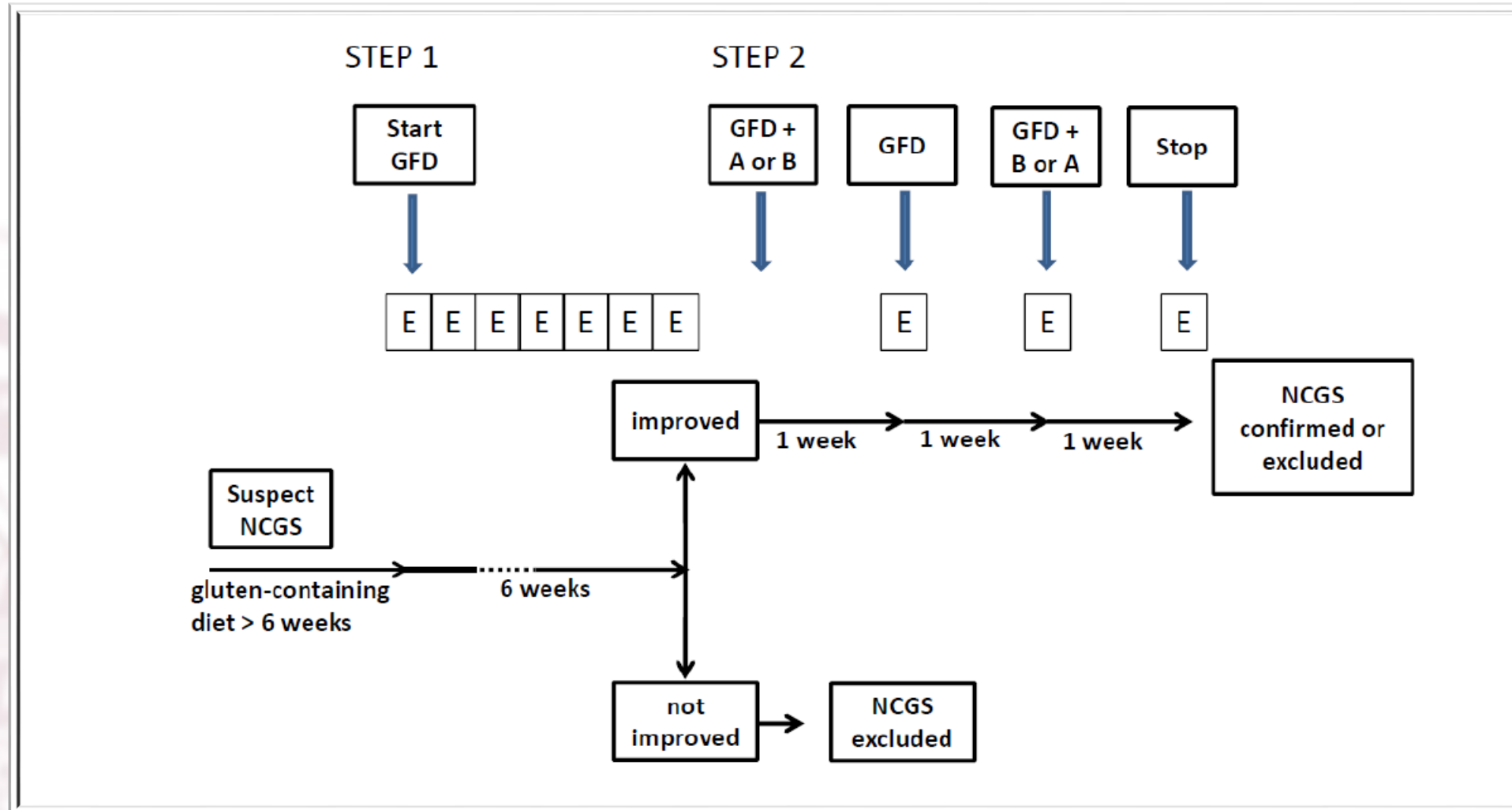
Di Stefano M, 2016

# EFFETTO NOCEBO IN SELF-REPORTED NCGS

*Peggioramento della severità dei sintomi dopo pasta gluten-free*



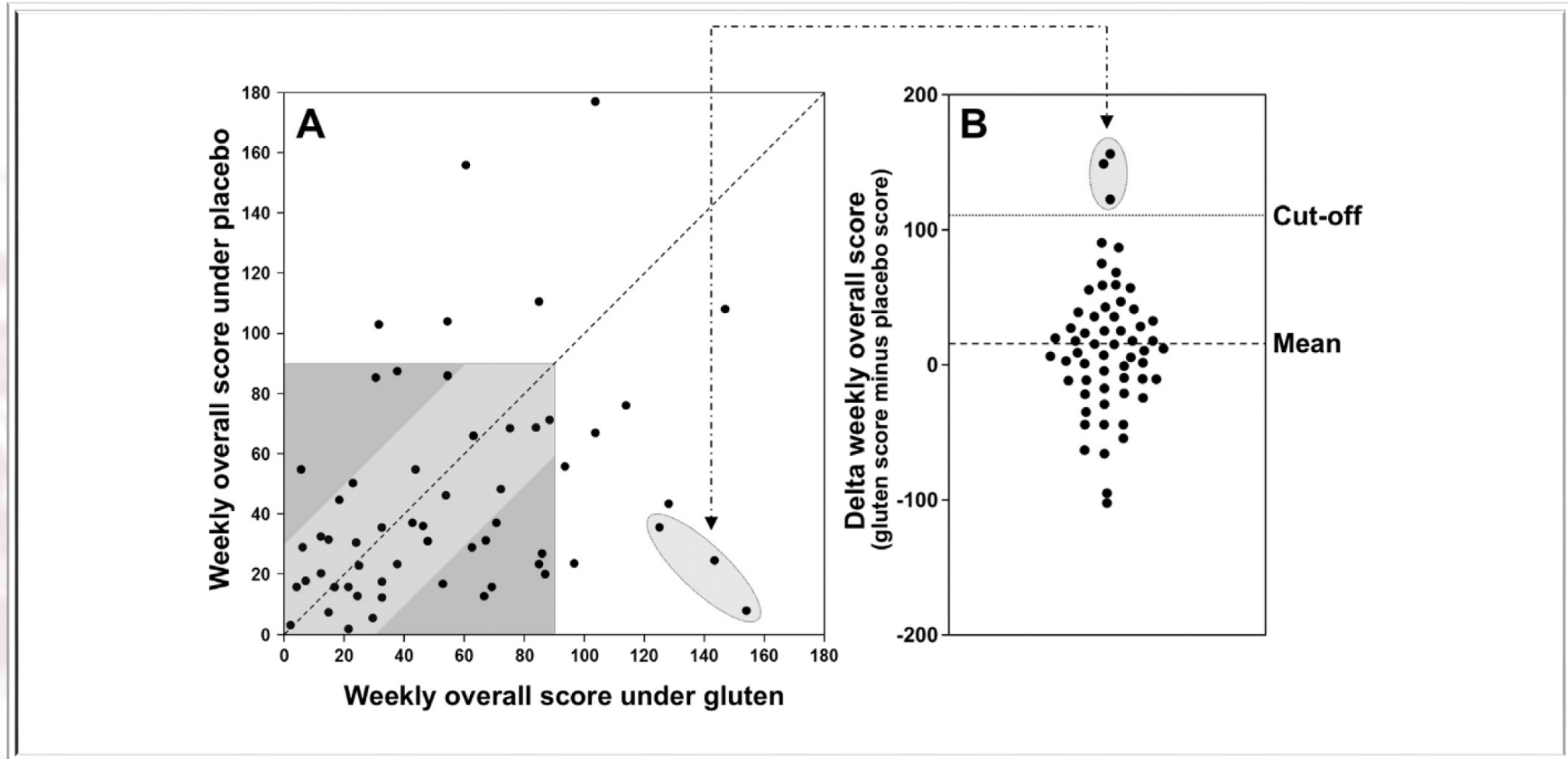
# DOUBLE BLIND, PLACEBO CONTROLLED CHALLENGE GLUTEN vs PLACEBO IN NCGS



Catassi C et al, *Nutrients* 2015

# BASSE DOSI DI GLUTINE IN PAZIENTI CON SOSPETTA NCGS

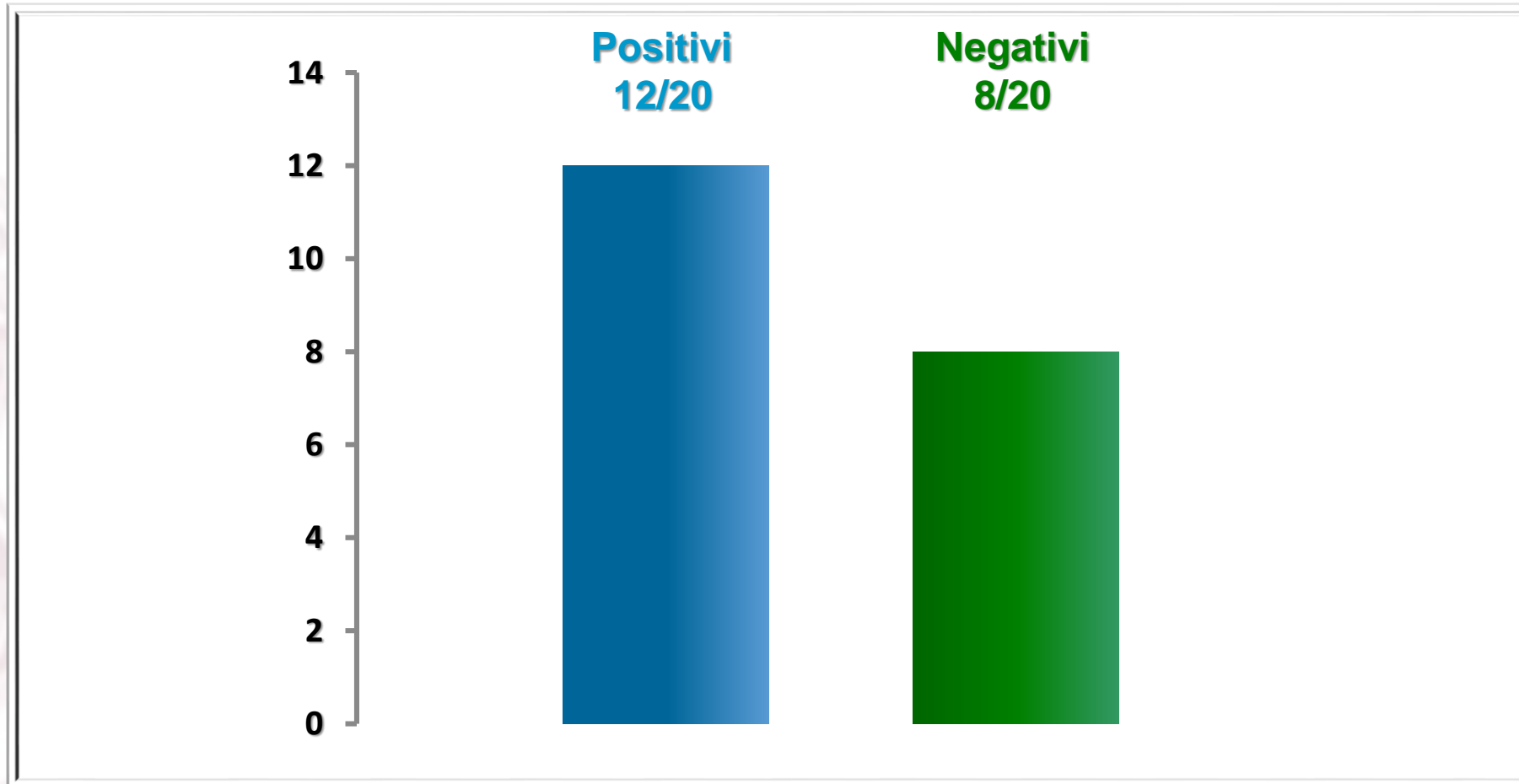
*4.375 g glutine/die (10 capsule) per una settimana*



Di Sabatino A et al, *CGH* 2015

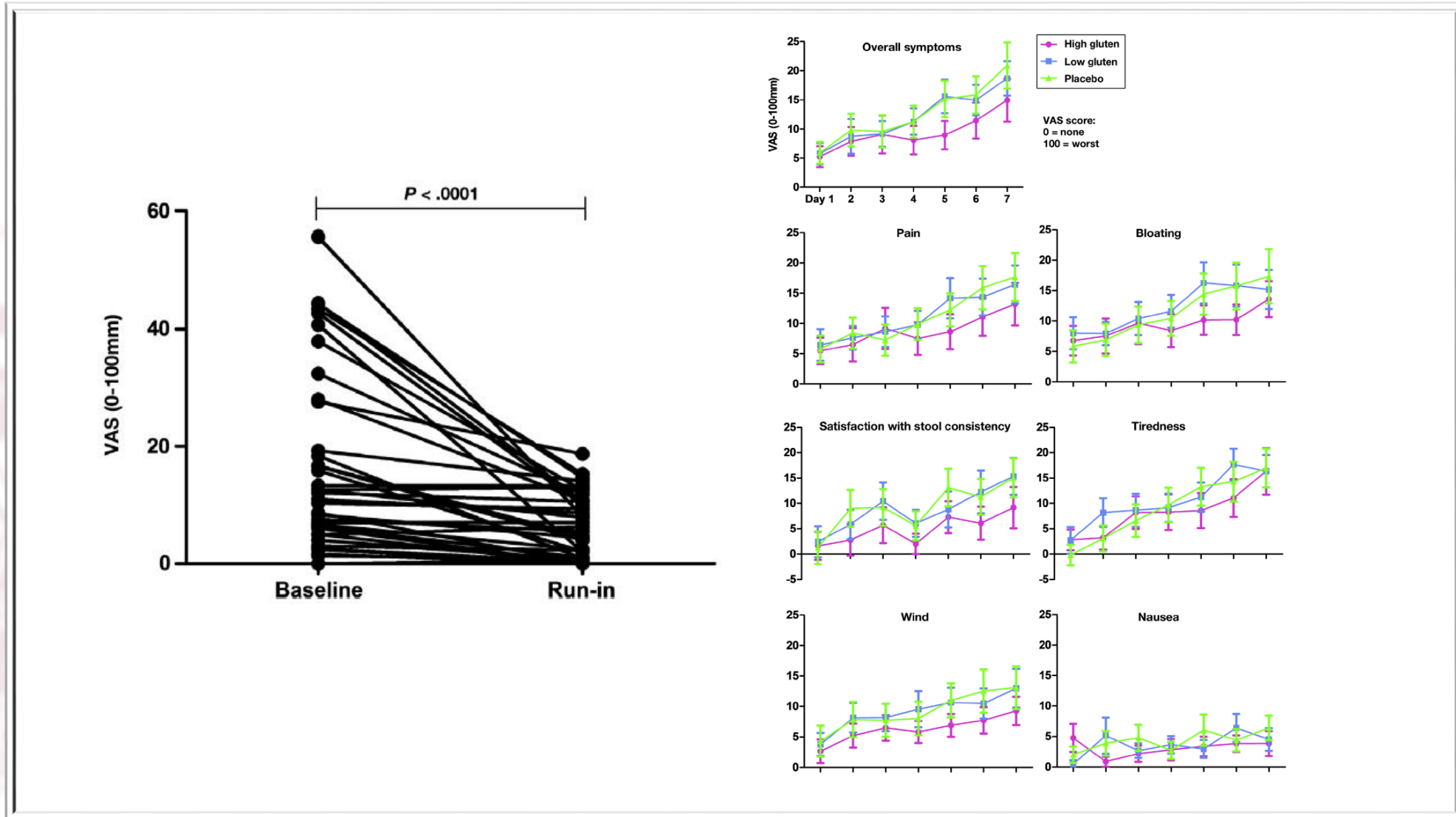
# BASSE DOSI DI GLUTINE IN PAZIENTI CON METEORISMO FUNZIONALE

*5 g glutine/die (10 capsule) per 1 settimana*



Di Stefano M et al, 2016

# RESTRIZIONE IN FODMAP IN IBS CON SELF-REPORTED NCGS





# NON-CELIAC GLUTEN SENSITIVITY: UN PROBLEMA TRASVERSALE?

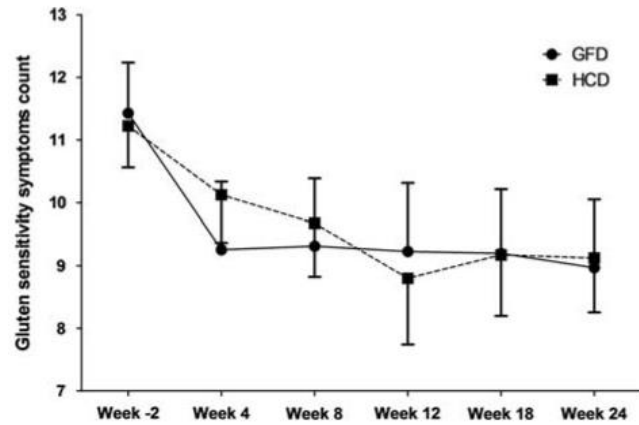
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- Sempre più frequentemente viene **referita** una sensibilizzazione al glutine a viene **introdotta** una dieta priva di glutine in **assenza** di diagnosi di malattia celiaca o allergia al frumento
- E' caratterizzata da sintomi **intestinali** ed **extraintestinali**
- Componenti del frumento **diverse** dal glutine possono essere responsabili dello scatenamento dei sintomi in pazienti con NCGS
- **Non** esistono **biomarkers** accurati per diagnosticare tale condizione
- I pazienti con NCGS sono un gruppo **eterogeneo** e dovrebbero essere messi al corrente delle **difficoltà diagnostiche** di tale condizione

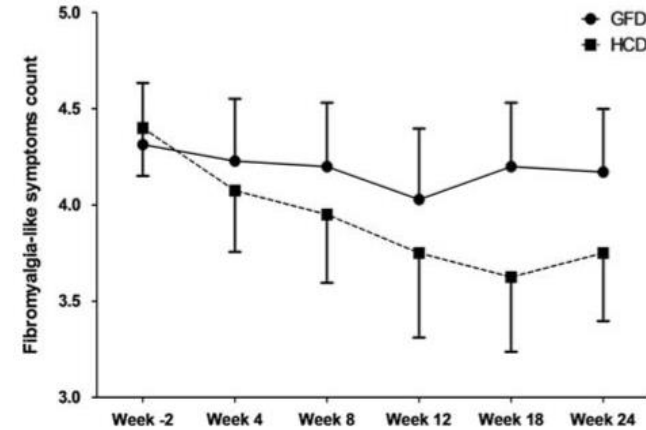
# GFD vs DIETA IPOCALORICA IN PAZIENTI CON FIBROMIALGIA

75 pazienti con fibromialgia: 35 trattati con GFD, 40 trattati con dieta ipocalorica

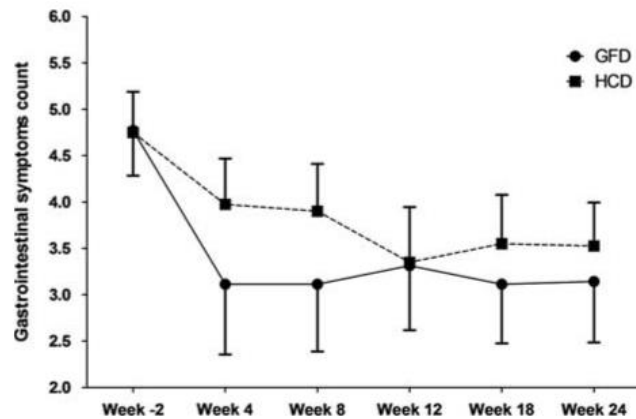
## Sintomi da Gluten sensitivity



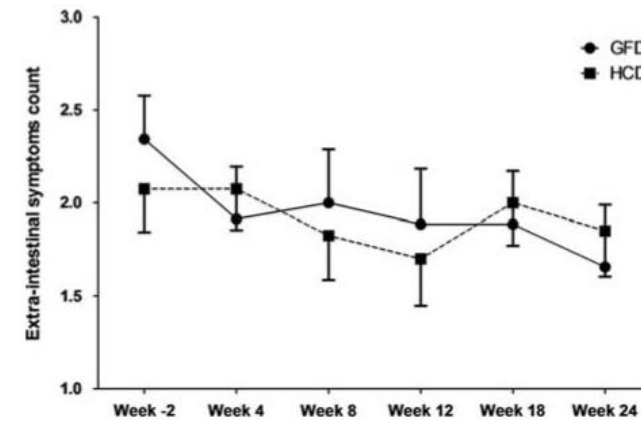
## Sintomi da Fibromialgia



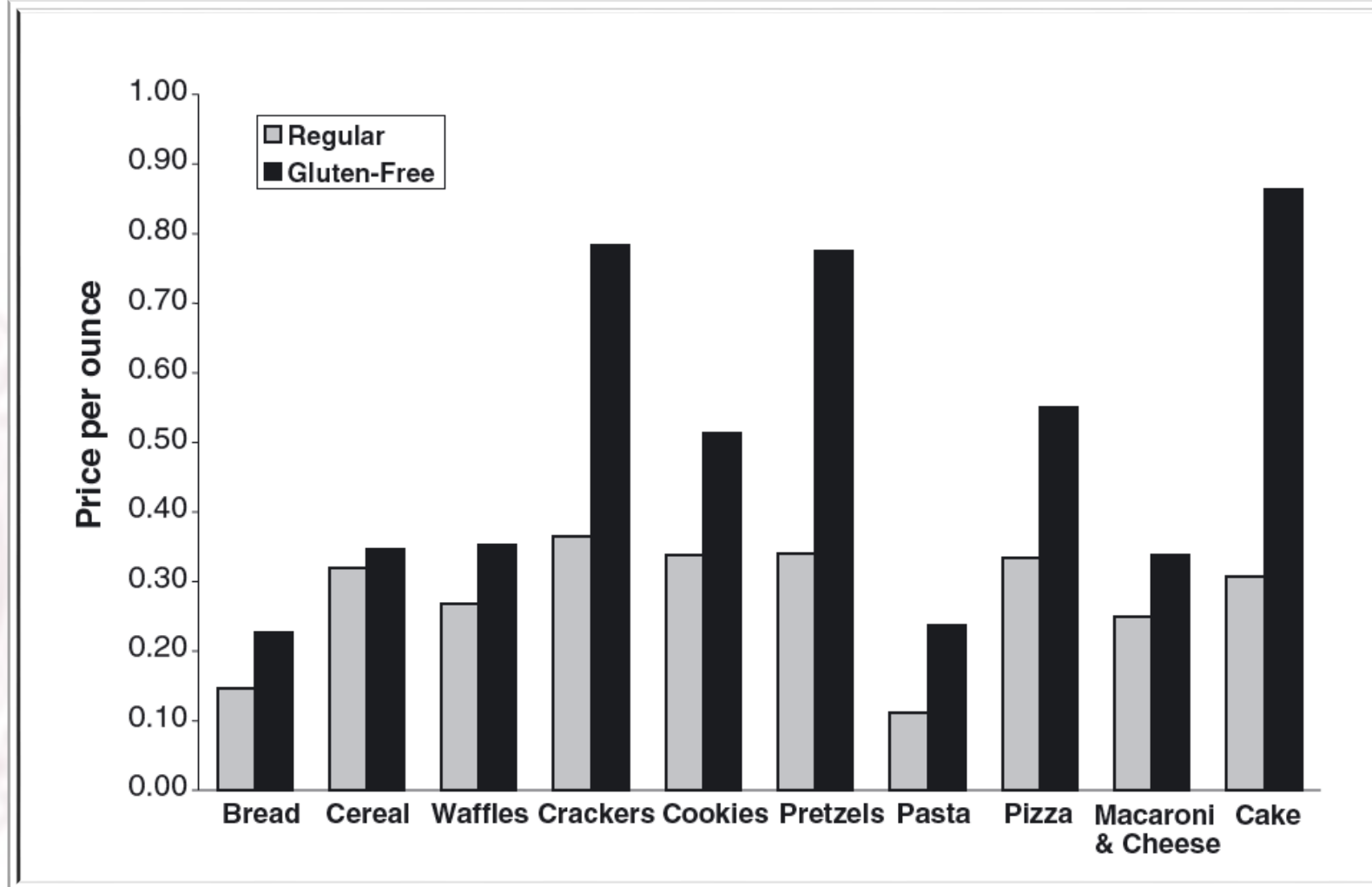
## Sintomi Gastrointestinali



## Sintomi Extraintestinali



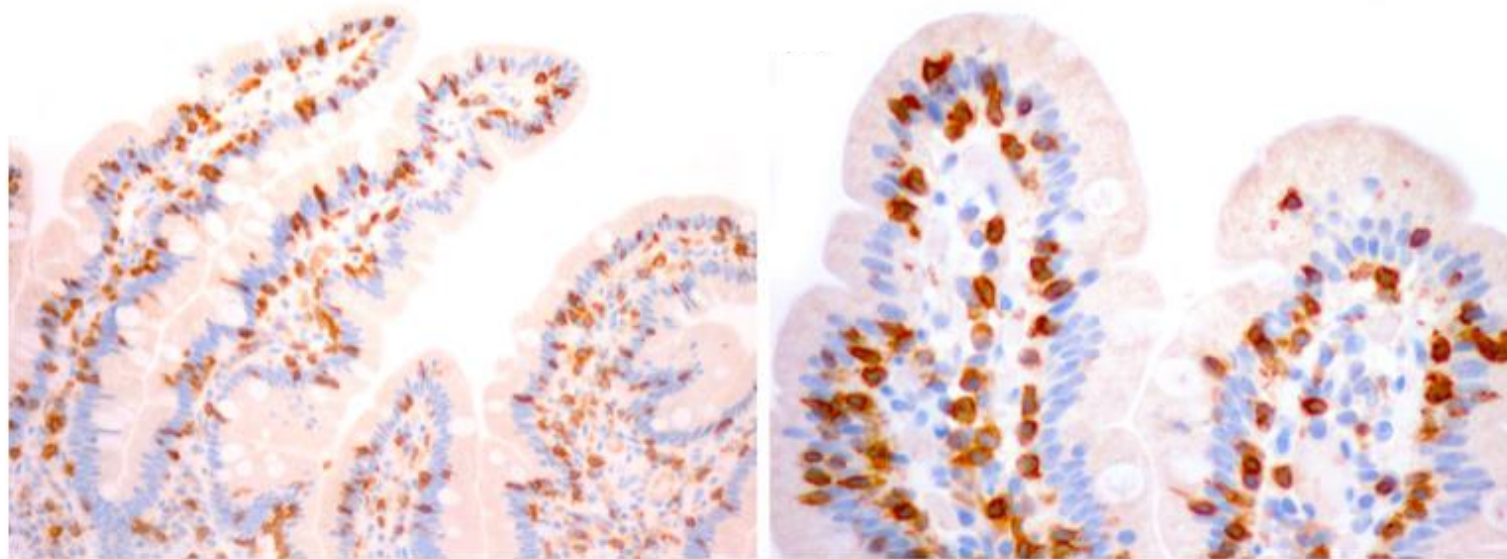
# PESO ECONOMICO DELLA DIETA PRIVA DI GLUTINE



Lee AR et al, *J Hum Nutr Diet* 2007

# NON-CELIAC GLUTEN SENSITIVITY E LINFOCITI INTRAEPITELIALI

*Incremento dei linfociti intraepiteliali nei villi duodenali di pazienti con NCGS*

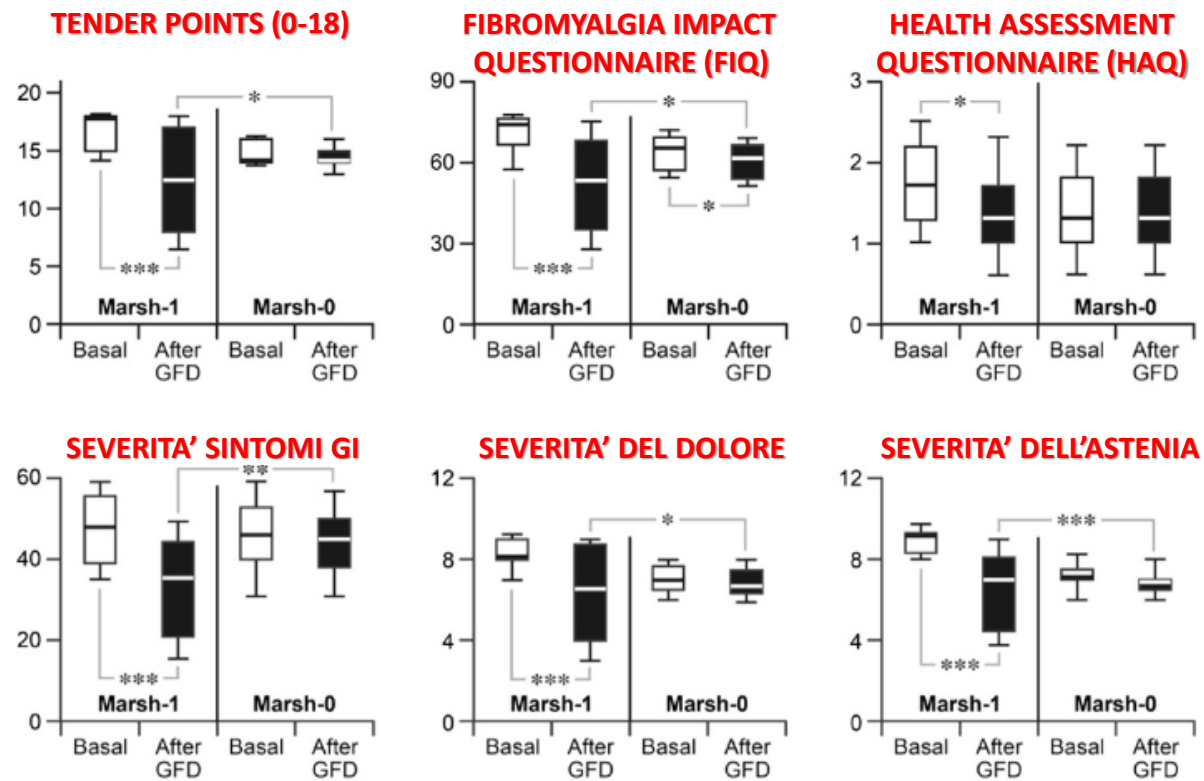


Isasi C et al, *Rheumatol Int* 2014

# DIETA PRIVA DI GLUTINE IN FIBROMIALGIA E LINFOCITOSI DUODENALE

| Pt no. | Età | Durata Malattia | Durata GFD | Remissione FM | Rientro a lavoro/<br>Vita attiva |
|--------|-----|-----------------|------------|---------------|----------------------------------|
| 1      | 49  | 20              | 31         | +             | +                                |
| 2      | 35  | 7               | 30         | +             |                                  |
| 3      | 41  | 15              | 8          | +             | +                                |
| 4      | 61  | 10              | 6          | +             |                                  |
| 5      | 46  | 10              | 24         | +             | +                                |
| 6      | 57  | 20              | 17         | +             | +                                |
| 7      | 73  | 5               | 7          | +             | +                                |
| 8      | 61  | 10              | 5          | +             |                                  |
| 9      | 42  | 10              | 22         | +             | +                                |
| 10     | 42  | 8               | 18         |               | +                                |
| 11     | 49  | 20              | 24         |               | +                                |
| 12     | 50  | 20              | 5          |               | +                                |
| 13     | 37  | 7               | 24         | +             | +                                |
| 14     | 49  | 12              | 6          | +             | +                                |
| 15     | 25  | 5               | 24         | +             | +                                |
| 16     | 37  | 15              | 16         |               |                                  |
| 17     | 33  | 3               | 8          | +             | +                                |
| 18     | 43  | 15              | 6          | +             | +                                |
| 19     | 42  | 20              | 24         | +             |                                  |
| 20     | 61  | 6               | 24         |               | +                                |

# DIETA PRIVA DI GLUTINE IN FM + IBS + LINFOCITOSI DUODENALE



**Effetto di un anno di dieta priva di glutine in pazienti con IBS e FM in rapporto alla presenza o assenza di linfocitosi duodenale**

**Controllare la familiarità per malattia celiaca e FM in pazienti con linfocitosi duodenale!  
Sono necessari ulteriori studi!**

# PREVALENZA DELLA MALATTIA CELIACA IN PAZIENTI CON FM

## MC in IBS con e senza FM

| Cohorts                            | IBS<br>(N = 125) | IBS/FMS<br>(N = 104) |
|------------------------------------|------------------|----------------------|
| Gastroduodenal biopsy              |                  |                      |
| IEL count per 100 epithelial cells | 15 (10)          | 27 (26)              |
| Marsh stage 0                      | 105 (84)         | 39 (37)              |
| Marsh stage 1                      | 20 (16)          | 58 (56)              |
| Marsh stage 3                      | 2 (2)            | 7 (7)                |

Rodrigo L et al, *Arthritis Res Ther* 2013

## MC in pazienti reumatologici

100 pts con LES      1 Positivo  
100 pts con AR      3 positivi  
100 pts con FM      0 positivi

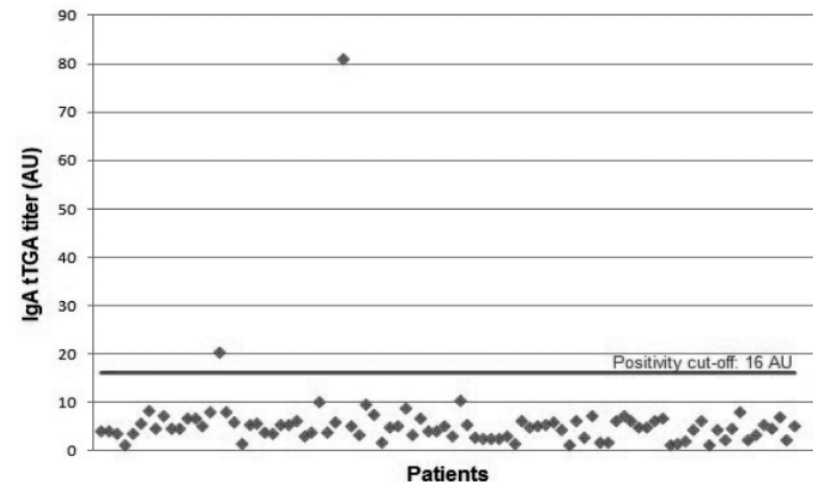
Elhami E et al, *Gastr Hep Bed Bench* 2018

## MC in pazienti Fibromialgia

94 pts con FM      0 positivi

Nisihara R et al, *Rev Esp Enferm Dig* 2016

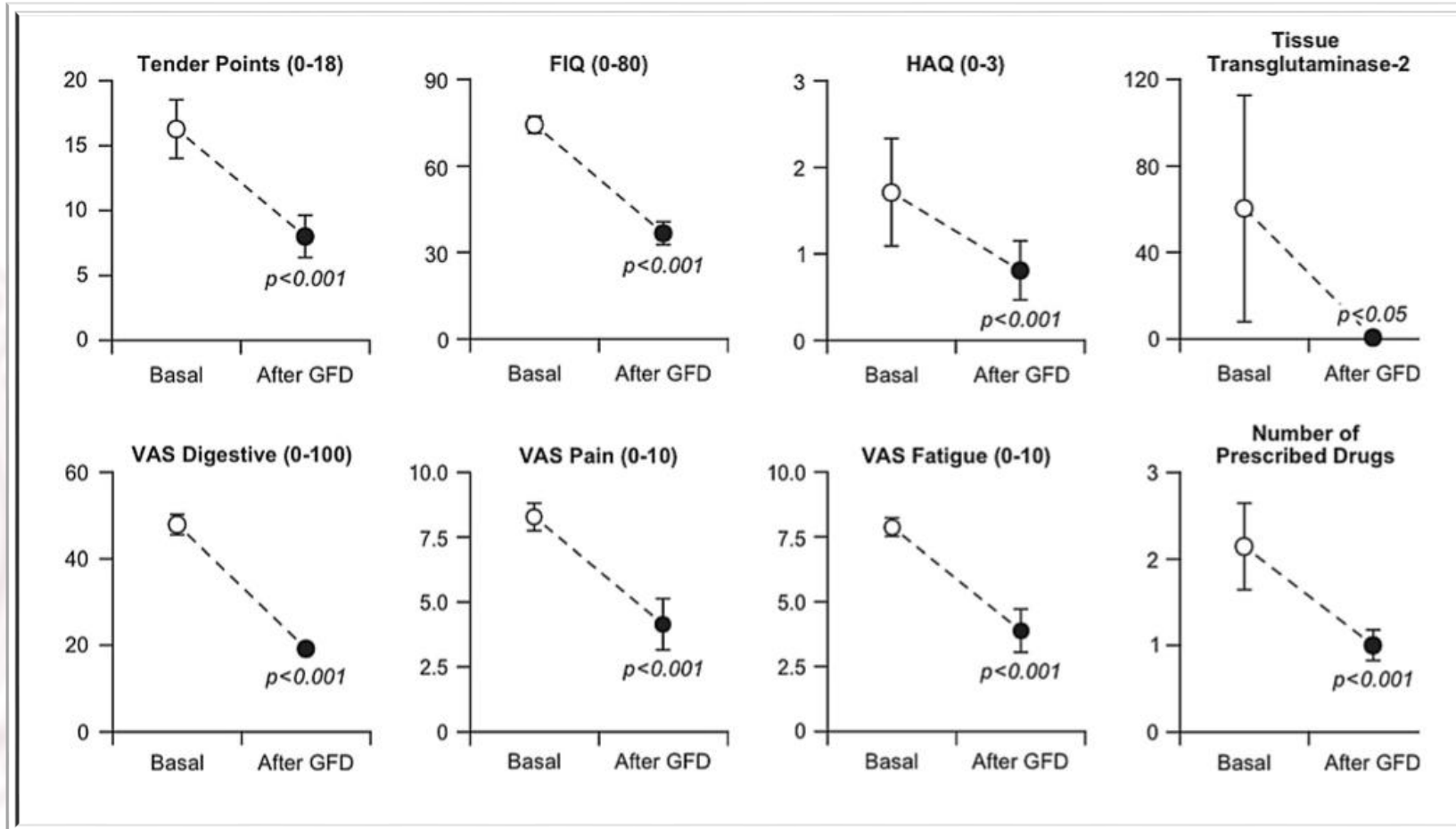
## MC in pazienti con fibromialgia



Tovoli F et al, *Clin Exp Rheumatol* 2013

# EFFETTO DELLA GFD IN FIBROMIALGICI CON MALATTIA CELIACA

## GFD per un anno in 7 pazienti con fibromialgia e malattia celiaca



Rodrigo L et al, *BMG Gastroenterology* 2013



# TAKE HOME MESSAGES

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- La **reale** prevalenza di **allergie** ed **intolleranze** alimentari nella fibromialgia **non** è a tutt'oggi ben **definita**
- La stretta **associazione** tra fibromialgia e patologie funzionali gastrointestinali rende spesso **difficile** la definizione dell'origine della sintomatologia nel singolo paziente
- La **dieta priva di glutine** potrebbe essere utile in **sottogruppi** specifici di pazienti
- **Ulteriori studi** sono necessari per definire i **rapporti** tra alimentazione e fibromialgia



**GRAZIE PER LA VOSTRA ATTENZIONE !!!**