

























































# Vitamin D level and brochial inflammation in asthmatic children

M. Miraglia del Giudice et al JBRHA 2015; 2: 125-29



66 bambini asmatici ( 45 M e 21 F) di età compresa tra 4 e 19 anni.

I bambini, sono stati divisi in due gruppi:

>Gruppo 1 : bambini (n° 46) con livelli ematici di 25 OH vitamina D < 30 ng/ml .

>Gruppo 2 : bambini (n° 20) con livelli ematici di 25 OH vitamina D > 30 ng/ml.

Parametri	Gruppo 1 (Vit.D<30 ng/ml)	Gruppo 2 (Vit.D>30 ng/ml)	Valore di P*
Vit D ( ng/ml )	21,1 ± 6	32 ± 1	<0,0001
FeNO in ppb	32,3 ± 31,8	10,1 ± 3,6	0,0018
C-ACT	20,3 ± 4,3	20,9 ± 3,6	0,9



I b. asmatici con livelli di 25 OH Vit. D > 30 ng/ml mostravano una riduzione significativa nei livelli di di FeNO( p = 0,0018 ) rispetto ai quelli con livelli di 25 OH Vit. D < 30 ng/ml.

**In conclusione, i nostri dati evidenziano un effetto antinfiammatorio della Vit.D sull'infiammazione bronchiale misurata con il FeNO in b. asmatici**

# Effect of Vitamin D and Inhaled Corticosteroid Treatment on Lung Function in Children

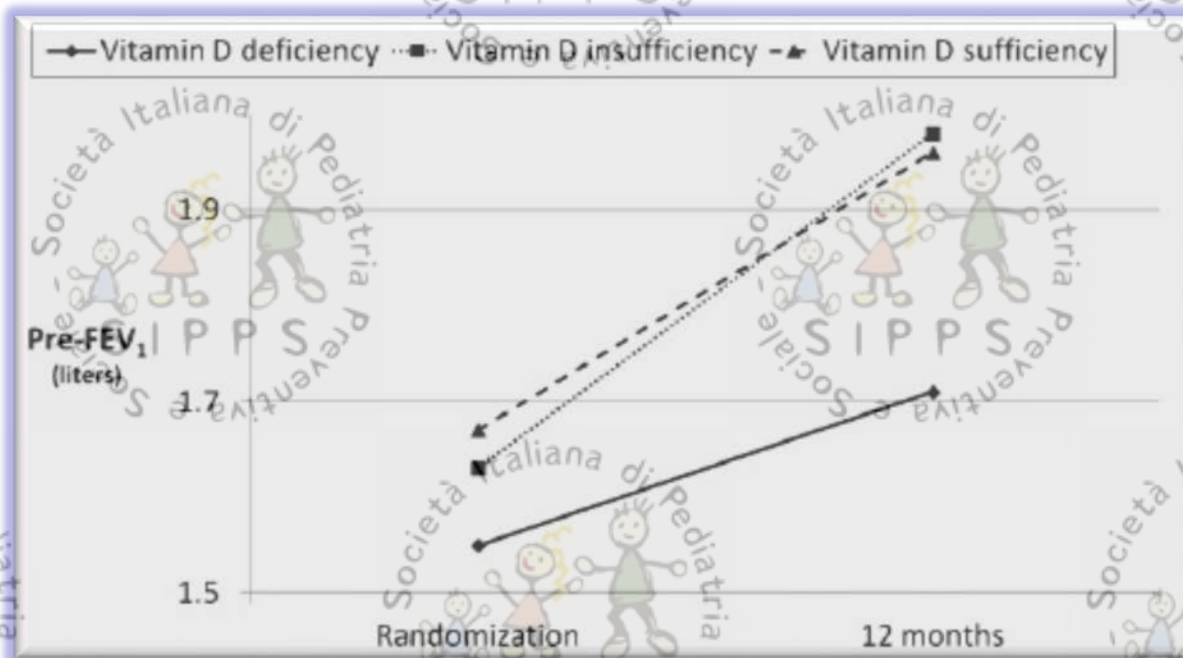
Wu AC et al *Am J Respir Crit Care Med* 2012; 186:508–513

■ Bambini asmatici (n° 1024) con bassi livelli di Vit D hanno un ridotto miglioramento del FEV1 dopo 1 anno di trattamento con CSI rispetto a quelli con livelli sufficienti di vitamina D.

■ Questi risultati supportano l'ipotesi che la **supplementazione di vitamina D può aumentare l'azione antiinfiammatoria dei CSI** nei bambini con asma.



Vit. D sufficiency (>30 ng/ml), insufficiency (20–30 ng/ml), and deficiency (<20 ng/ml)



Change in prebronchodilator FEV1 predicted from randomization to 12 months for vitamin D deficiency (solid line, n 110), insufficiency (dotted line, n 260), and sufficiency (dashed line, n 663) groups, while adjusting for age, sex, race, body mass index, history of emergency department visit, and season

XXX

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SOCIETÀ ITALIANA DI PEDIATRIA  
PREVENTIVA E SOCIALE



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LA NOSTRA CARE, IL NOSTRO CUORE

TEATRO DI SIRACUSA • 7 - 10 GIUGNO 2018  
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IL RUOLO della VITAMINA D e dei  
PROBIOTICI nella  
IMMUNO-MODULAZIONE della RISPOSTA  
ALLERGICA

APPLICABILITÀ SU BASI SCIENTIFICHE

PROBIOTICI

Probiotici e ALLERGIA  
Probiotici e ASMA  
Probiotici e RINITE

VITAMINA D

Vitamina D e ASMA

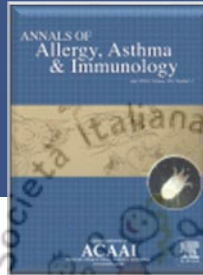
PROBIOTICI + VIT. D






# Lactobacillus reuteri DSM 17938 plus vitamin D3 as ancillary treatment in allergic children with asthma.

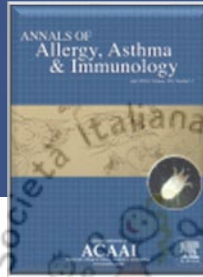
*Miraglia Del Giudice M, et al Ann Allergy Asthma Immunol. 2016 Dec;117(6):710-712*



- ➔ Randomized DBPCT, 32 ch. age 6-14 years
- ➔ **Inclusion criteria** were as follows:
  - (1) diagnosis of **mild persistent asthma** well controlled with montelukast (5 mg/d).
  - (2) allergy to **HDMs**. 
  - (3) serum **Vit. D level less than 30 ng/mL**.

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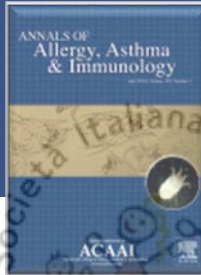
➡ **Group A** : L. Reuteri + Vitamin D3 (400 IU)

➡ **Group B** : placebo

- Children were revisited after 90-days, at the end of treatment (T1) and after a 30-days follow-up (T2).
- Montelukast treatment was continued throughout the study. Salbutamol spray was used as symptomatic treatment.

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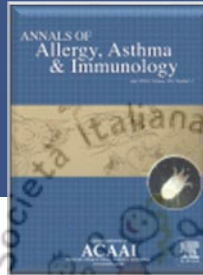
- **infiammazione allergica bronchiale** → **FeNO (primary outcome)**
- **funzionalità polmonare** → **ΔFEV<sub>1</sub>**
- **controllo dell'asma** → **C-ACT**

Variable	T0			T1			T2		
	Group A	Group B	P Value <sup>b</sup>	Group A	Group B	P Value <sup>b</sup>	Group A	Group B	P Value <sup>b</sup>
Serum vitamin D, ng/mL	18.3 (5)	17.8 (4)	NS	35.8 (8)	16.9 (7)	<.001			
FeNO, ppm	42.5 (3.9)	44 (3.6)	NS	13 (7)	51 (40)	<.001	12.9 (6.7)	55 (47)	<.001
ΔFEV <sub>1</sub> , % of predicted	9.8 (6)	8.7 (7)	NS	6.1 (4)	8.5 (5)	.02	5.6 (3.6)	9.3 (5)	<.05
C-ACT	23 (2)	21 (3.6)	NS	24 (4)	16 (4.6)	<.001			

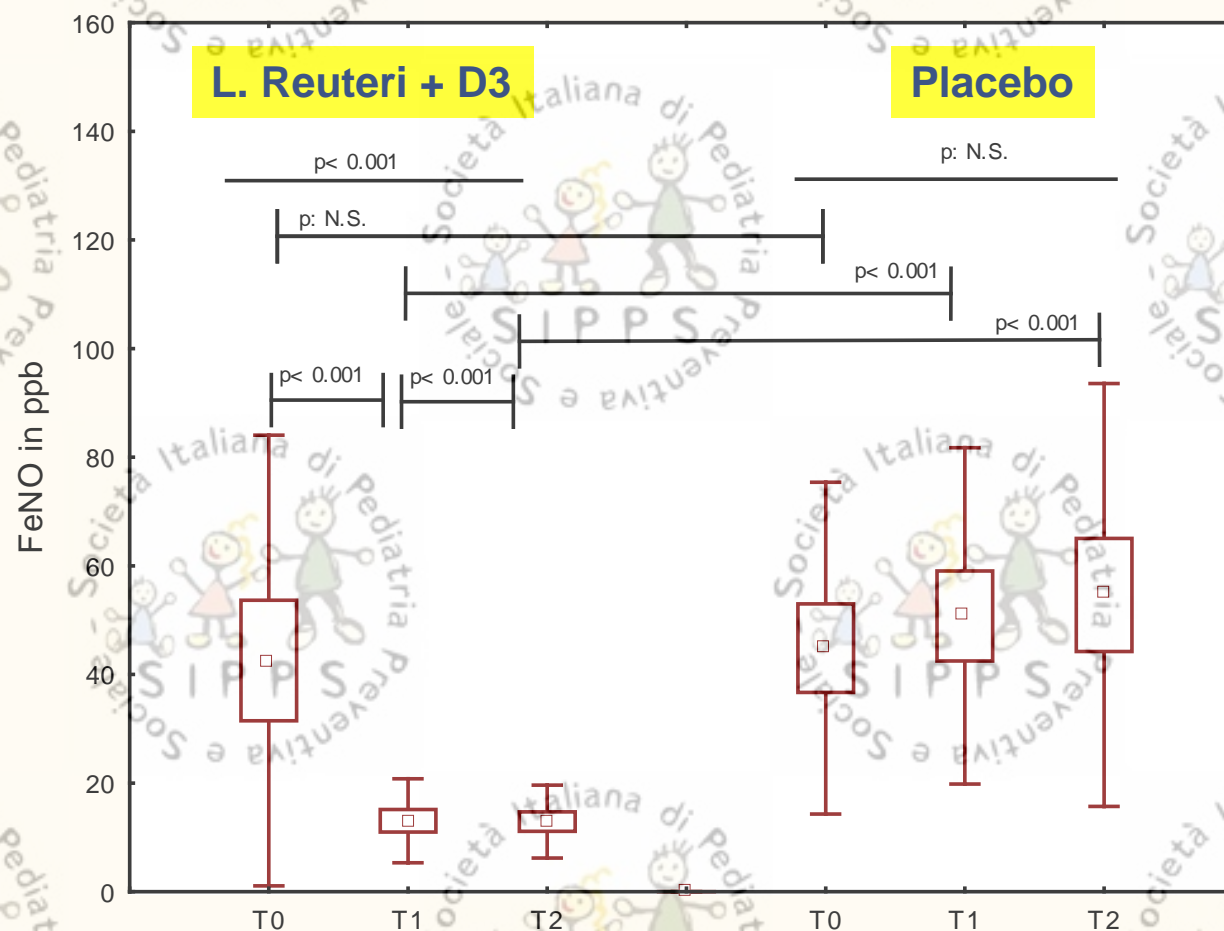


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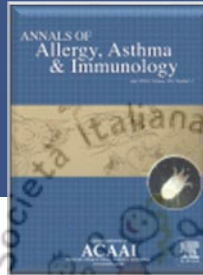
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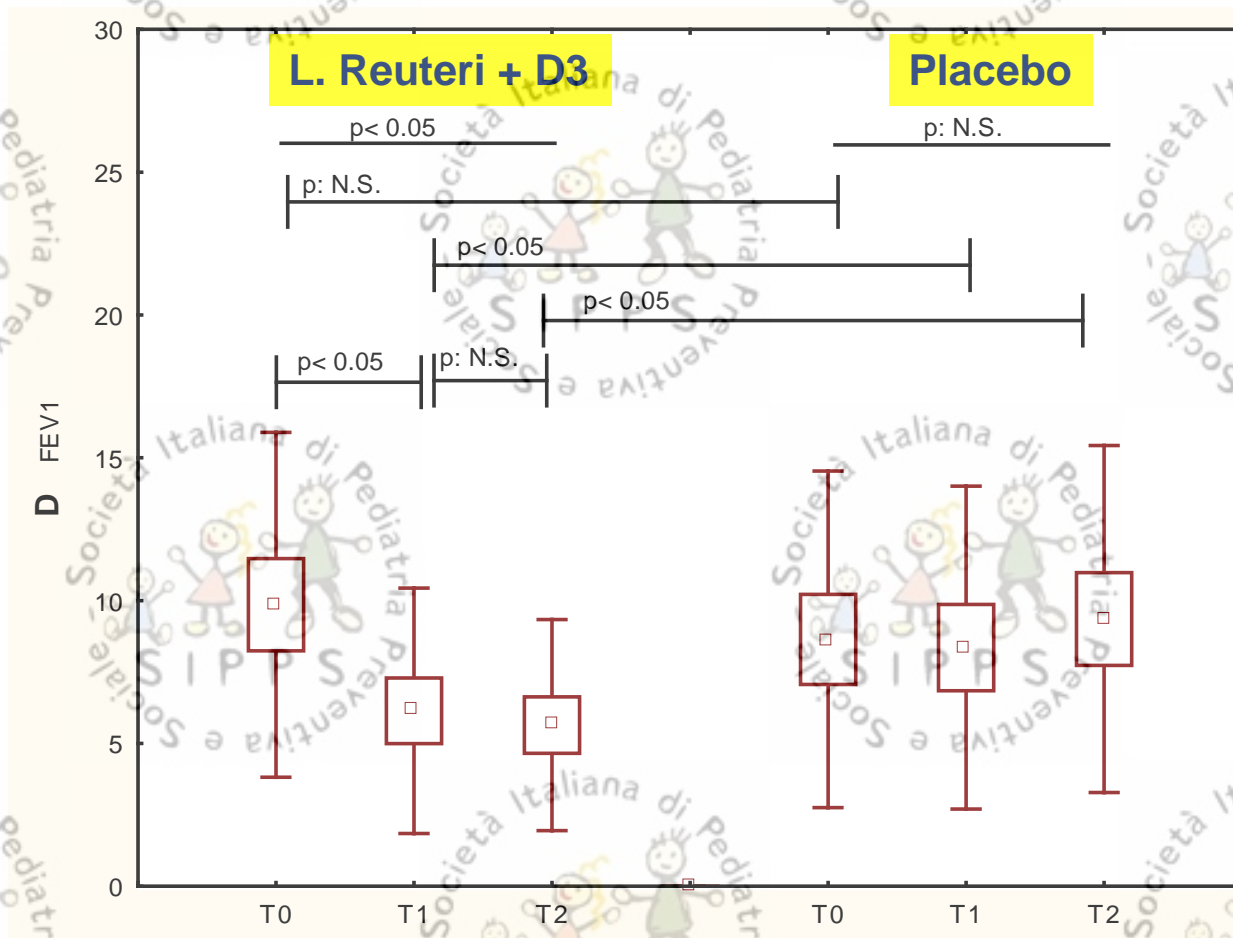


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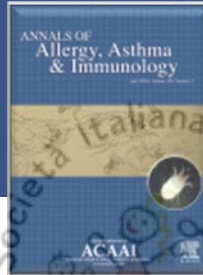


Funzionalità polmonare →  $\Delta$ FEV<sub>1</sub>

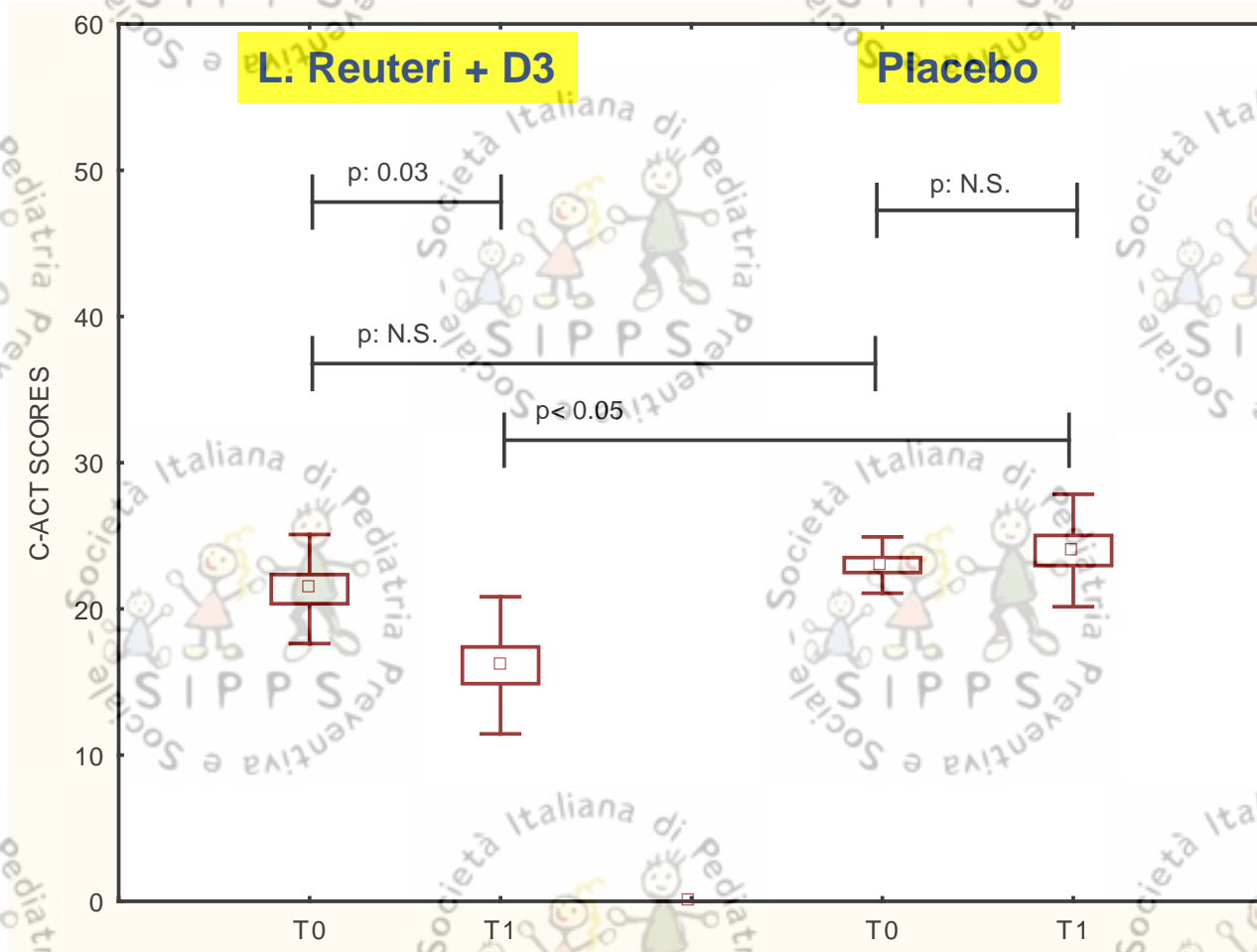


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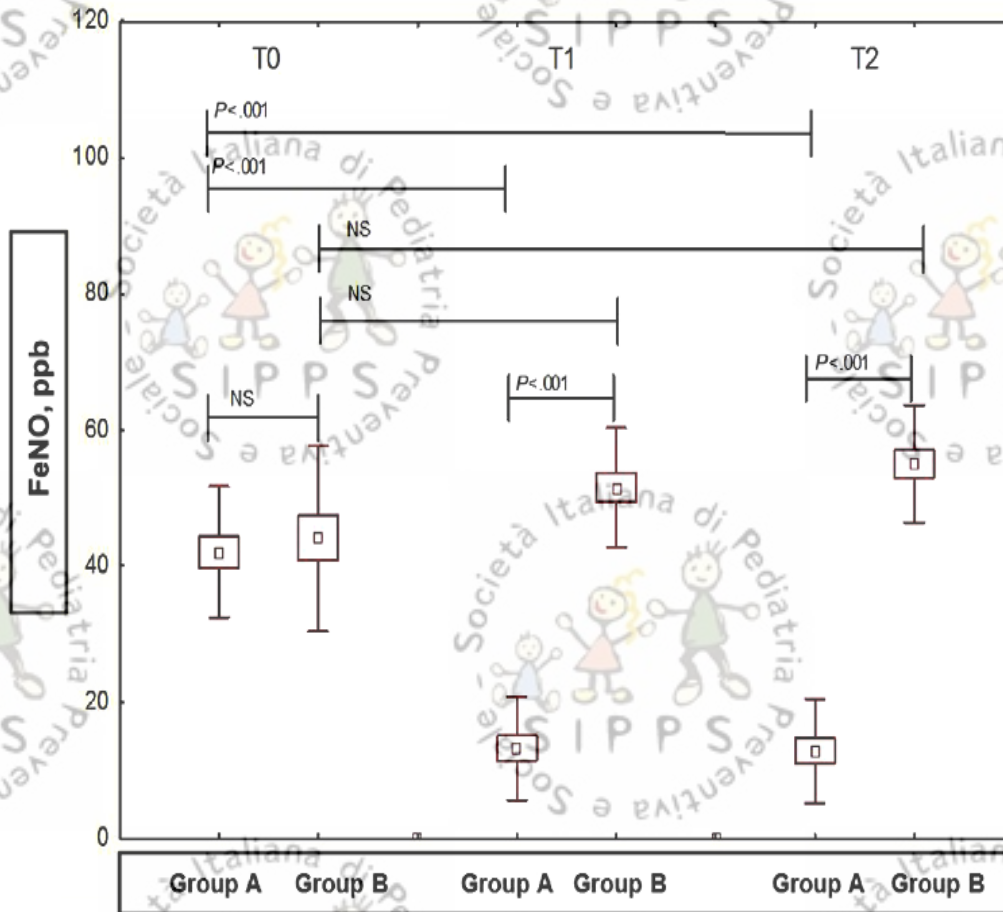
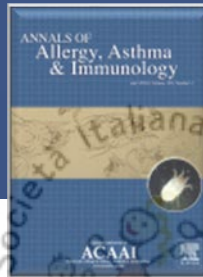


controllo dell'asma → C-ACT



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➡ The present pilot study found that the food supplement that contained **L reuteri DSM 17938 (108 CFU) plus vitamin D3 (400 IU)** was effective in reducing bronchial inflammation.

➡ In addition, there was a **better asthma control** and a **reduced response to bronchodilation** in actively-treated children.

➡ These findings were associated with significant increase in serum vitamin D3 concentration

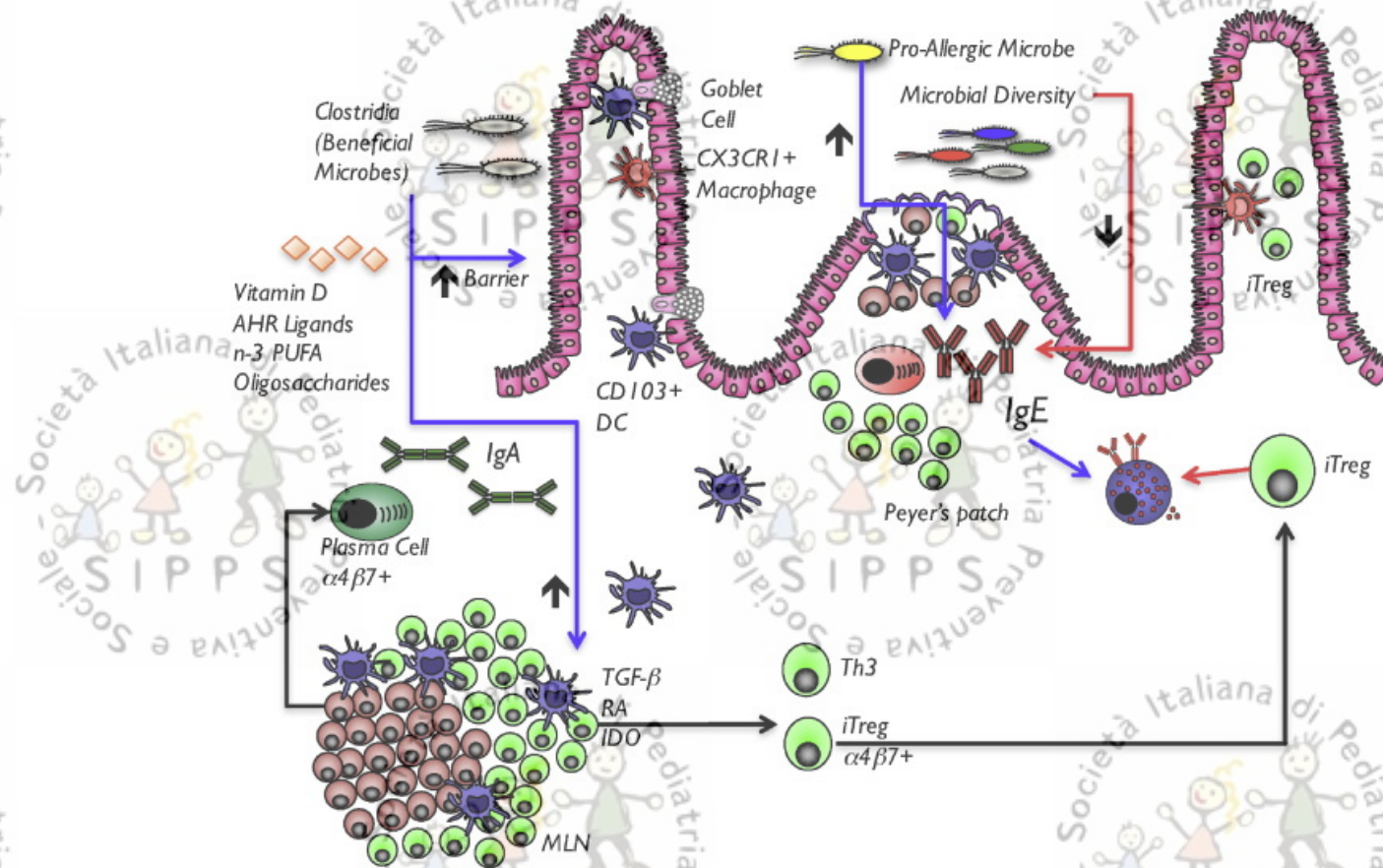




**WINE**

# The rise of food allergy: Environmental factors and emerging treatments

Sara Benedé et al *EBioMedicine* 7 (2016) 27–34

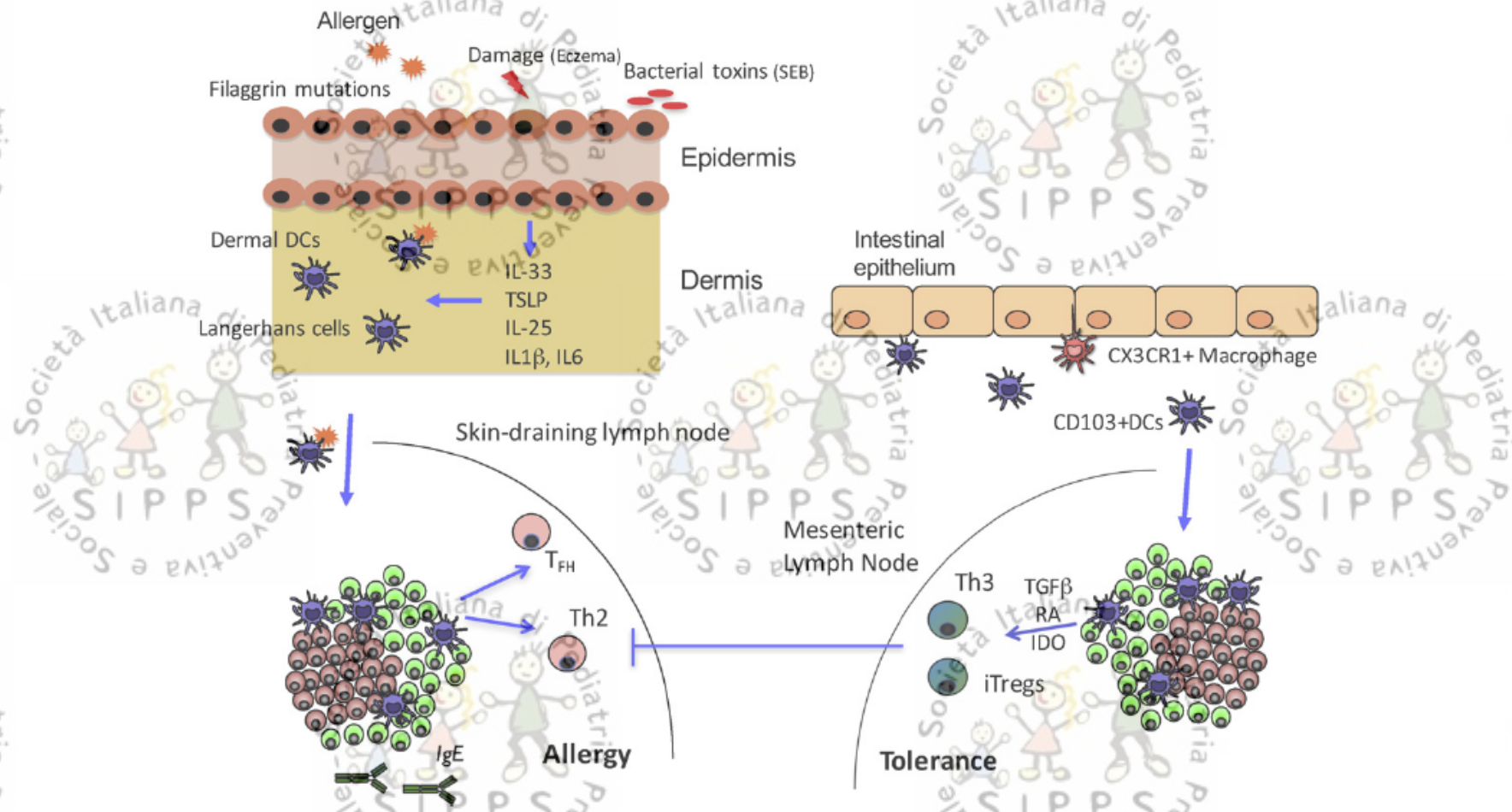


Microbiota and diet influence the development of allergy and tolerance. Microbial diversity suppresses IgE class-switching, which occurs within the Peyer's patch. Strains of bacteria including Clostridia have been shown to suppress allergy, and to enhance the generation of Tregs and improve epithelial barrier function. There is also evidence that microbial composition can promote food allergy, suggesting the role of pro-allergic bacteria. Nutrients including vitamin D, aryl hydrocarbon receptor (AHR) ligands, polyunsaturated fatty acids (PUFA) and oligosaccharides can also suppress food allergy through enhancement of regulatory responses



# The rise of food allergy: Environmental factors and emerging treatments

Sara Benedé et al *EBioMedicine* 7 (2016) 27–34



Allergen exposure through the skin in the presence of skin damage, filaggrin mutation or bacterial toxins (SEB) promotes sensitization. Depending on the nature of the allergen and adjuvant, epithelial cells produce cytokines that instruct dendritic cells on the skin. They transport the antigen to the skin-draining lymph nodes, where Th2 and T follicular helper (T<sub>FH</sub>) cells are generated and promote IgE class-switching. Antigen exposure by oral route leads to tolerance. CX3CR1+ macrophages sample antigen from the lumen and transfer it to CD103+DCs that transport the antigen to the mesenteric lymph nodes and promote the induction of Tregs. Oral tolerance can prevent the development of sensitization through the skin.