

How to avoid complete elimination

Yu Okada^{1, 2)}, Noriyuki Yanagida²⁾,
Sakura Sato²⁾, Motohiro Ebisawa²⁾

- 1) Department of Family Physician, Kameda Family Clinic Tateyama, Chiba, Japan
- 2) Department of Allergy, Clinical Research Center for Allergy and Rheumatology, Sagamihara National Hospital, Kanagawa, Japan

Disclosure

I declare that there are
no conflicts of interest.

Primary Prevention

- LEAP study for high risk children

Skin prick test	Consumption	Avoidance	<i>P</i> value
Negative	1.9%	13.7%	<0.001
Positive	10.6%	35.3%	0.004

Du Toit G, et al. *N Engl J Med*. 2015; **372**: 803-13.

- EAT study for general population

Early introduction	Standard introduction	<i>P</i> value
5.6%	7.1%	0.32

Perkin MR, et al. *N Engl J Med*. 2016; **374**: 803-13.

Very low dose oral food challenge

- **Usual food allergy management**
- Very low dose OFC to Milk & Wheat
- Heated egg yolk with slightly contaminated with egg white OFC
- Low dose Oral immunotherapy
- Summary

Complete elimination

- Easy to introduce

- Accidental exposure 10-40%/year

Cherkaoui S, et al. *Clin Transl Allergy* 2015; **5**: 16.

- Common food allergens are present in many dishes.
- Complete elimination require correct labeling.

Vazquez-Oriz M, et al. *Pediatr Allergy Immunol* 2016; **27**: 117-25.

Oral immunotherapy

- Clinical tolerance 25-50%

Moran TP, et al. *Curr Allergy Asthma Res* 2015; **15**: 23.

- Anaphylaxis at home
10% of patients, 0.05% of doses

Vazquez-Oriz M, et al. *Pediatr Allergy Immunol* 2016; **27**: 117-25.

- Poor long term adherence over 60% of cases

Keet CA, et al. *J Allergy Clin Immunol* 2013; **132**: 737-9.

Burks AW, et al. *J Allergy Clin Immunol* 2015; **135**: 1240-8.

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Stepwise oral food challenge

- Processing (e.g. baking)
 - Baking reduce allergenicity of proteins
 - 70% tolerate baked egg/milk

Leonard SA, et al. *J Allergy Clin Immunol Pract.* 2015; **3**: 13-23.

- Dose
 - Total dose is increased stepwise

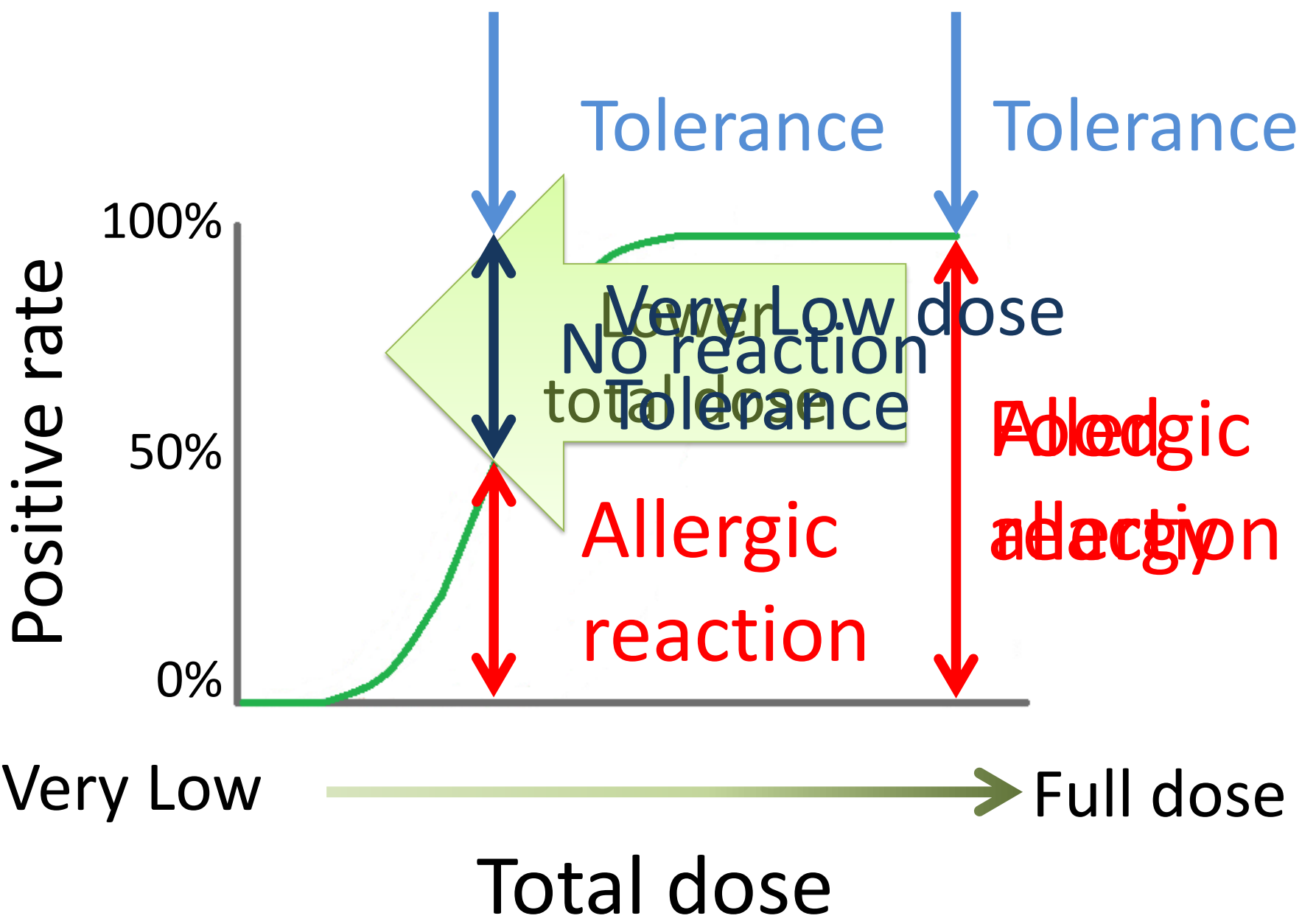
Yanagida N, et al. *Allergol int* 2016; **65**: 135-140.

Stepwise oral food challenge

	Cow's milk	Wheat
Very Low dose OFC	3 mL heated milk 10 g butter (100 mg protein)	2 g udon noodles (52 mg protein)
Low dose OFC	25 mL heated milk (850 mg protein)	15 g udon noodles (390 mg protein)
Middle dose OFC	48 g yogurt (1700 mg protein)	50 g udon noodles (1300 mg protein)
Full dose OFC	200 mL cow's milk (6800 mg protein)	200 g udon noodles 1 slice white bread (5200 mg protein)

Yanagida N, et al. *Allergol int* 2016; **65**: 135-140.

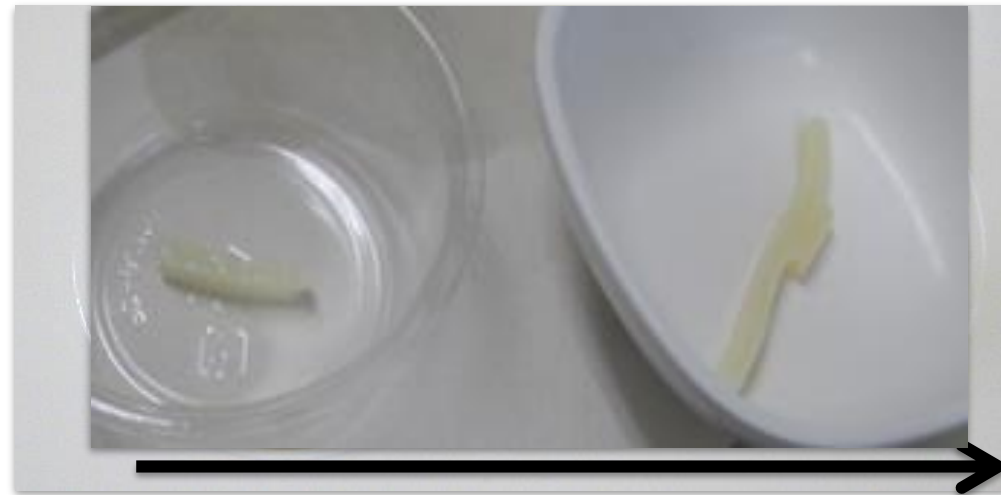
Yanagida N, et al. *Allergy Asthma Immunol Res.* 2015; **7**: 186-9.



Very Low dose OFC

32 mg Lactan submils

Amount

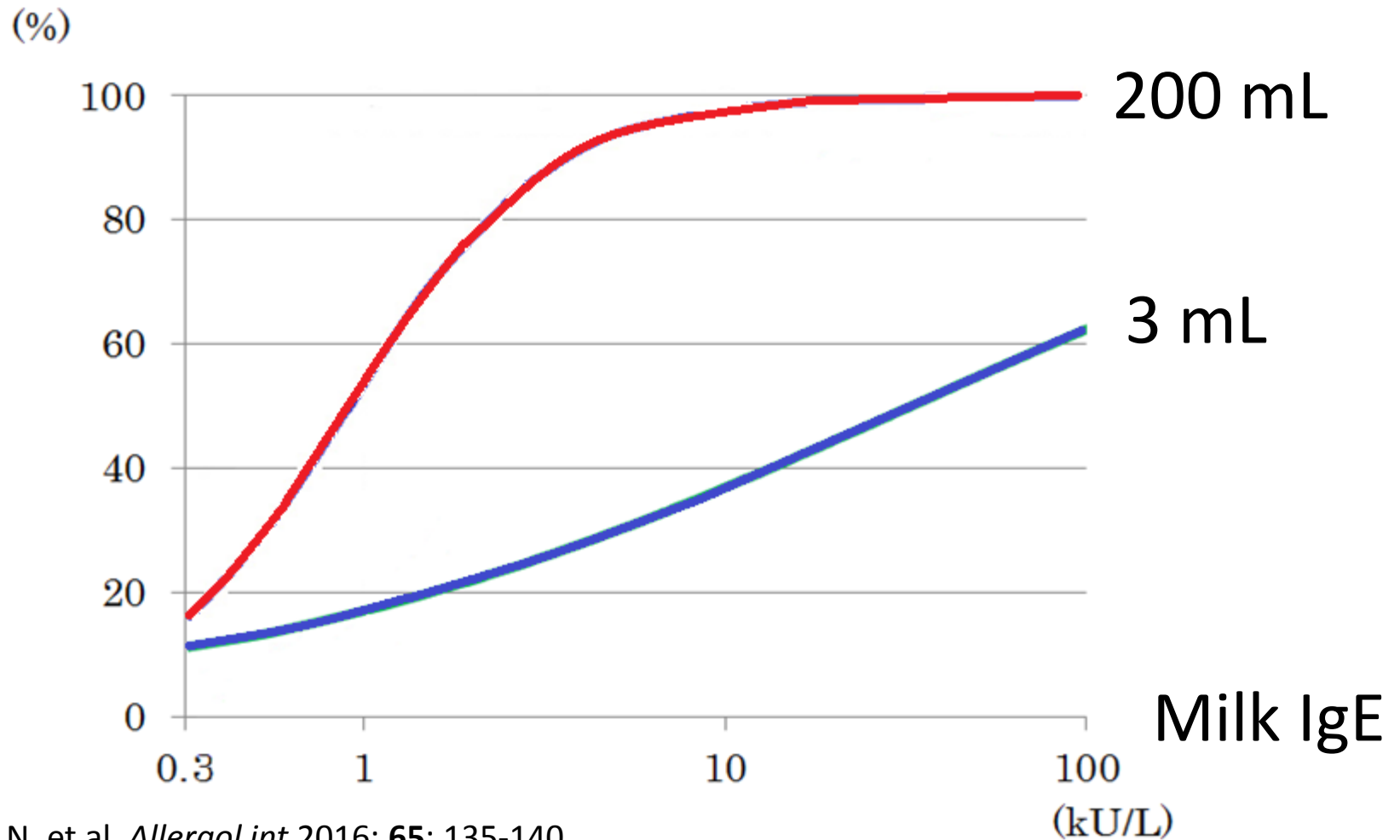


Time

0 min

60 min

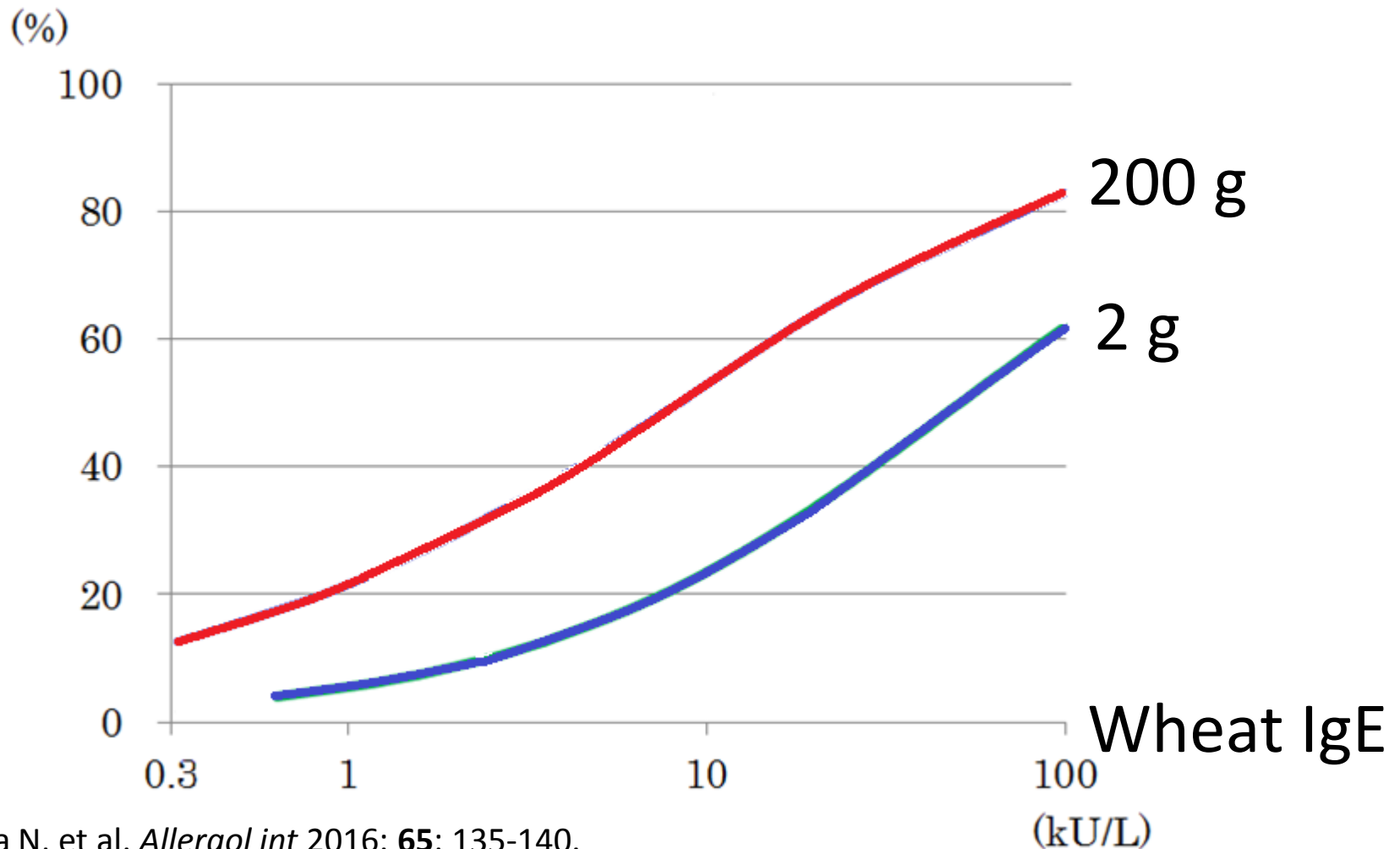
Low positive rate of Very Low dose OFC to cow's milk



Yanagida N, et al. *Allergol int* 2016; **65**: 135-140.

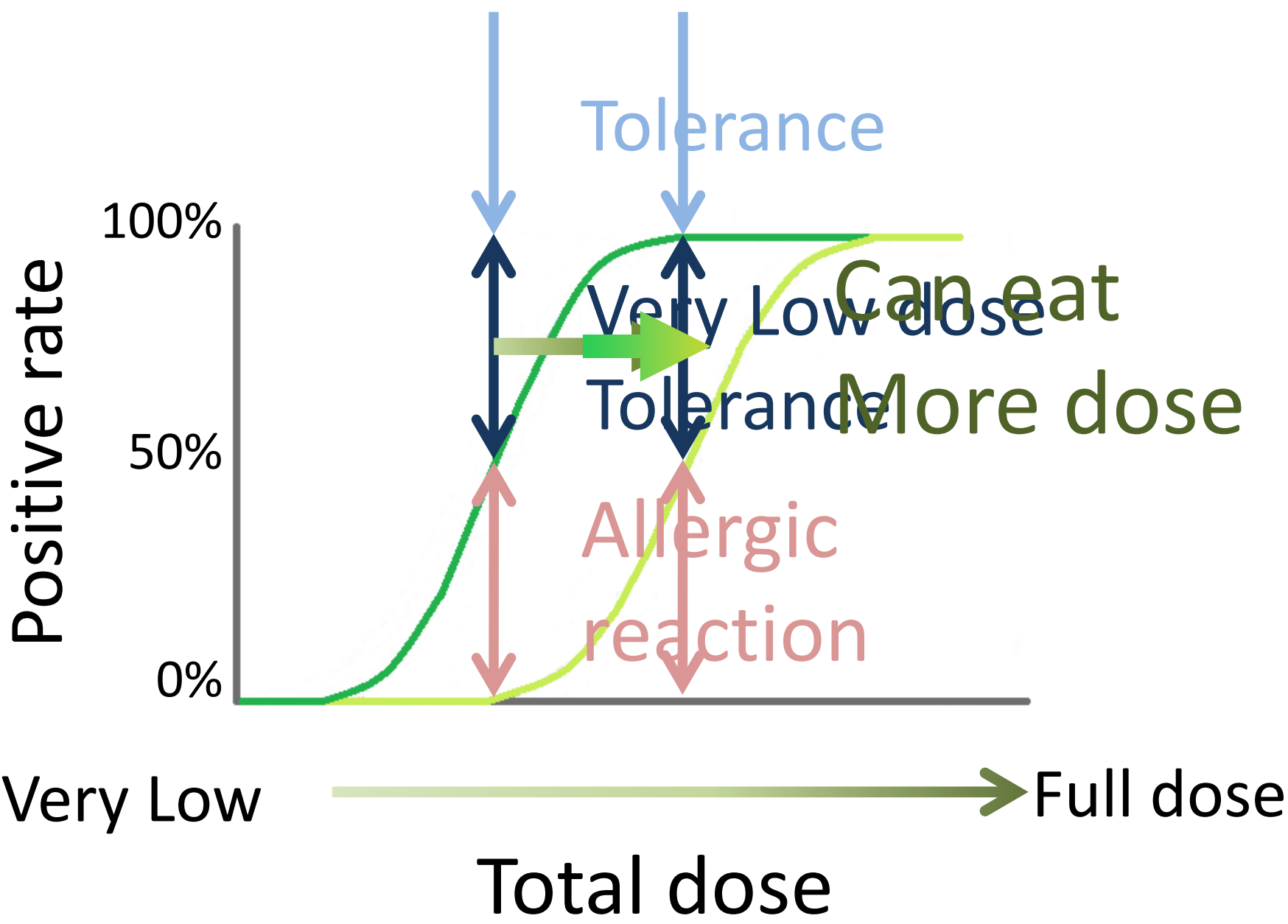
Komata T, et al. *J Allergy Clin Immunol* 2007; **119**: 1272-4.

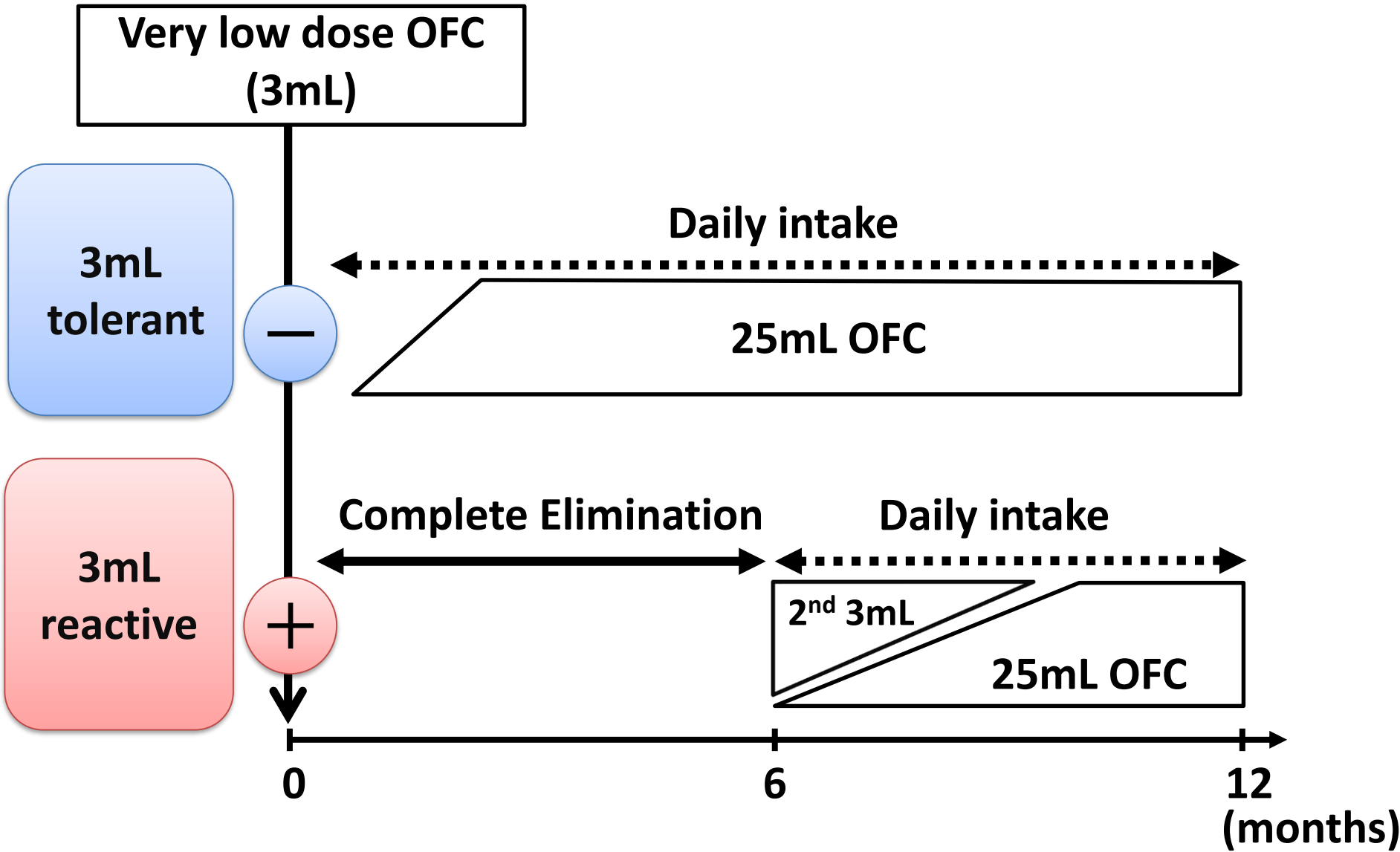
Low positive rate of Very Low dose OFC to wheat



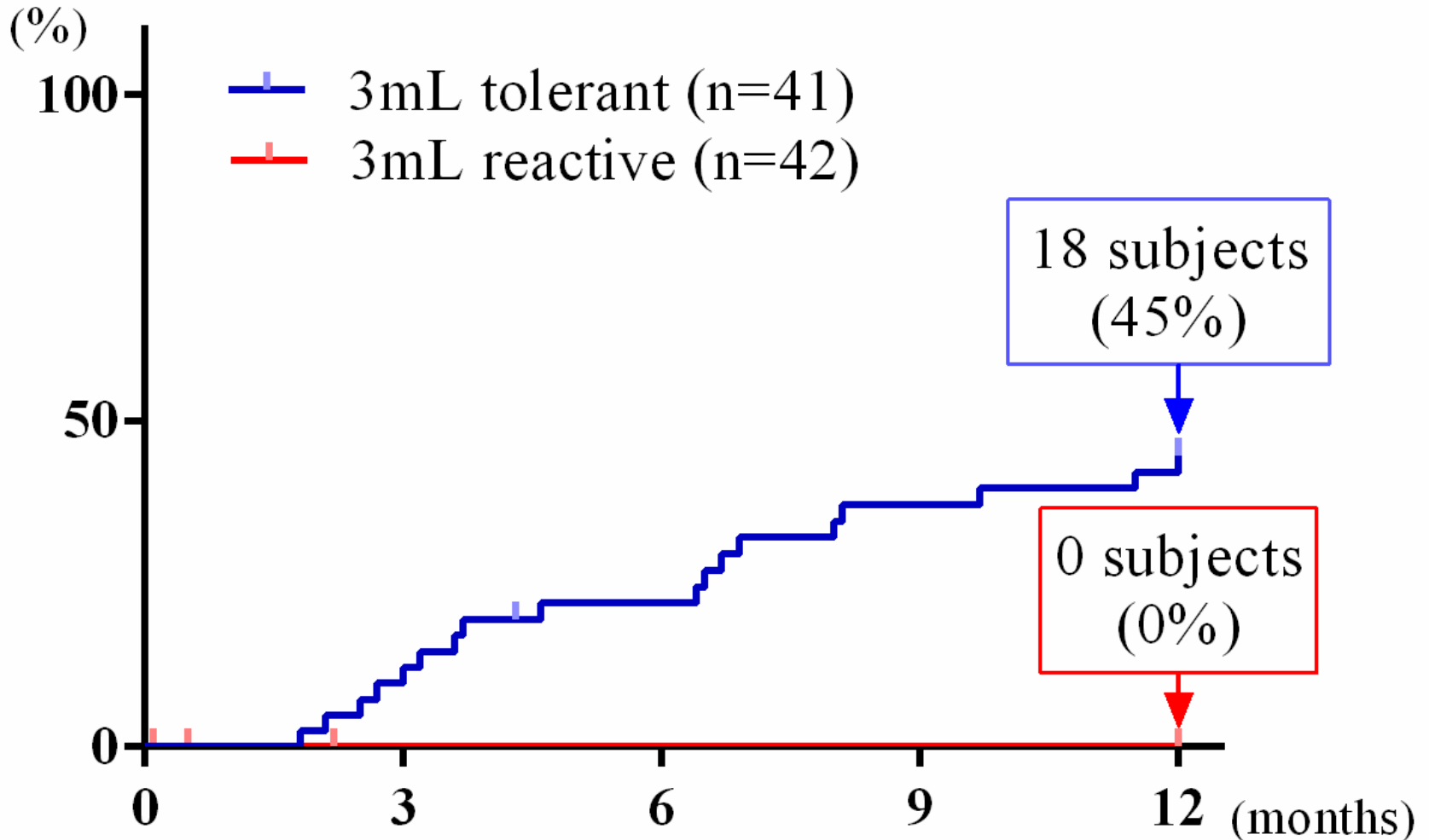
Yanagida N, et al. *Allergol int* 2016; **65**: 135-140.

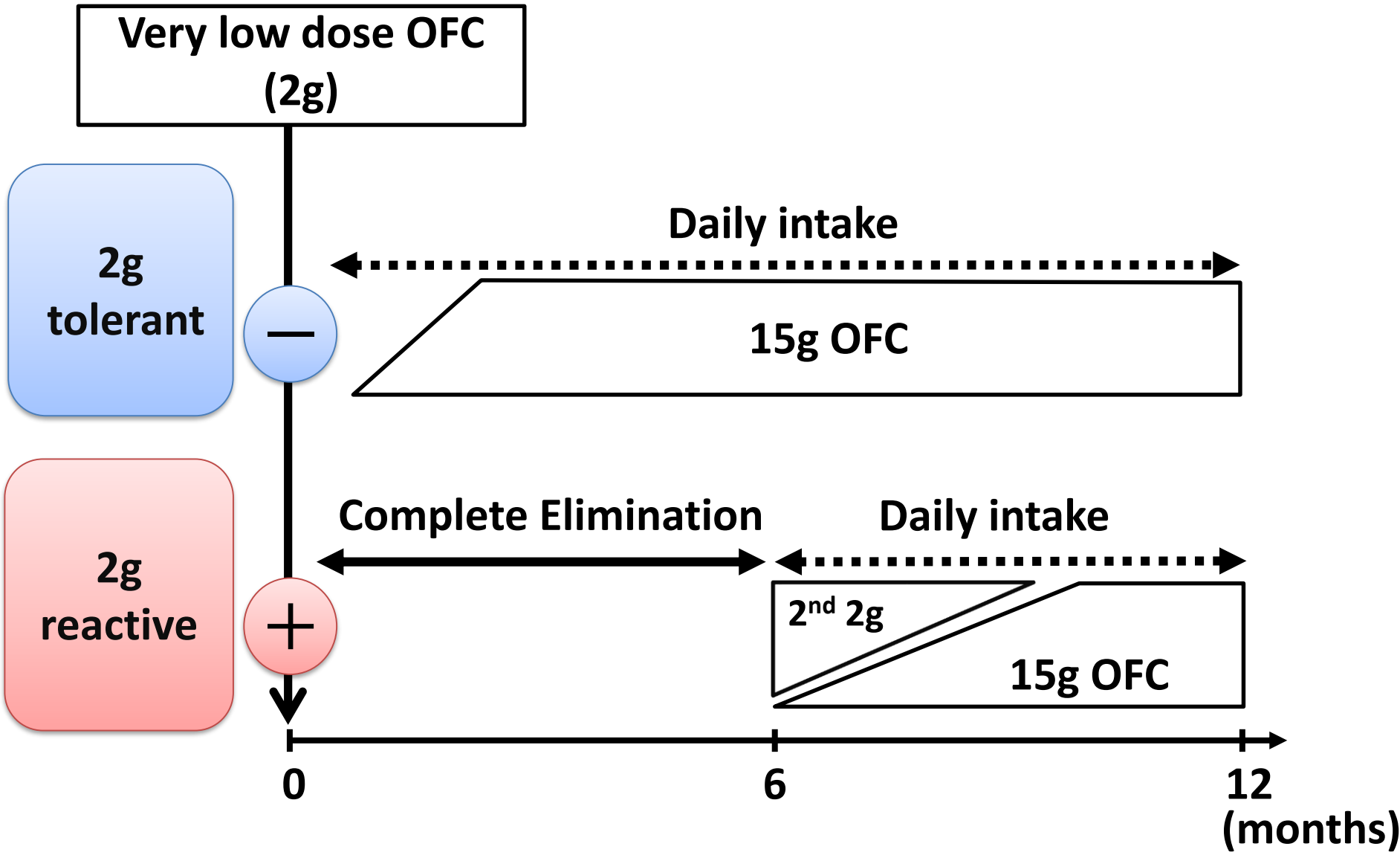
Ebisawa M, et al. *Int Arch Allergy Immunol* 2012; **158**: 71-6.



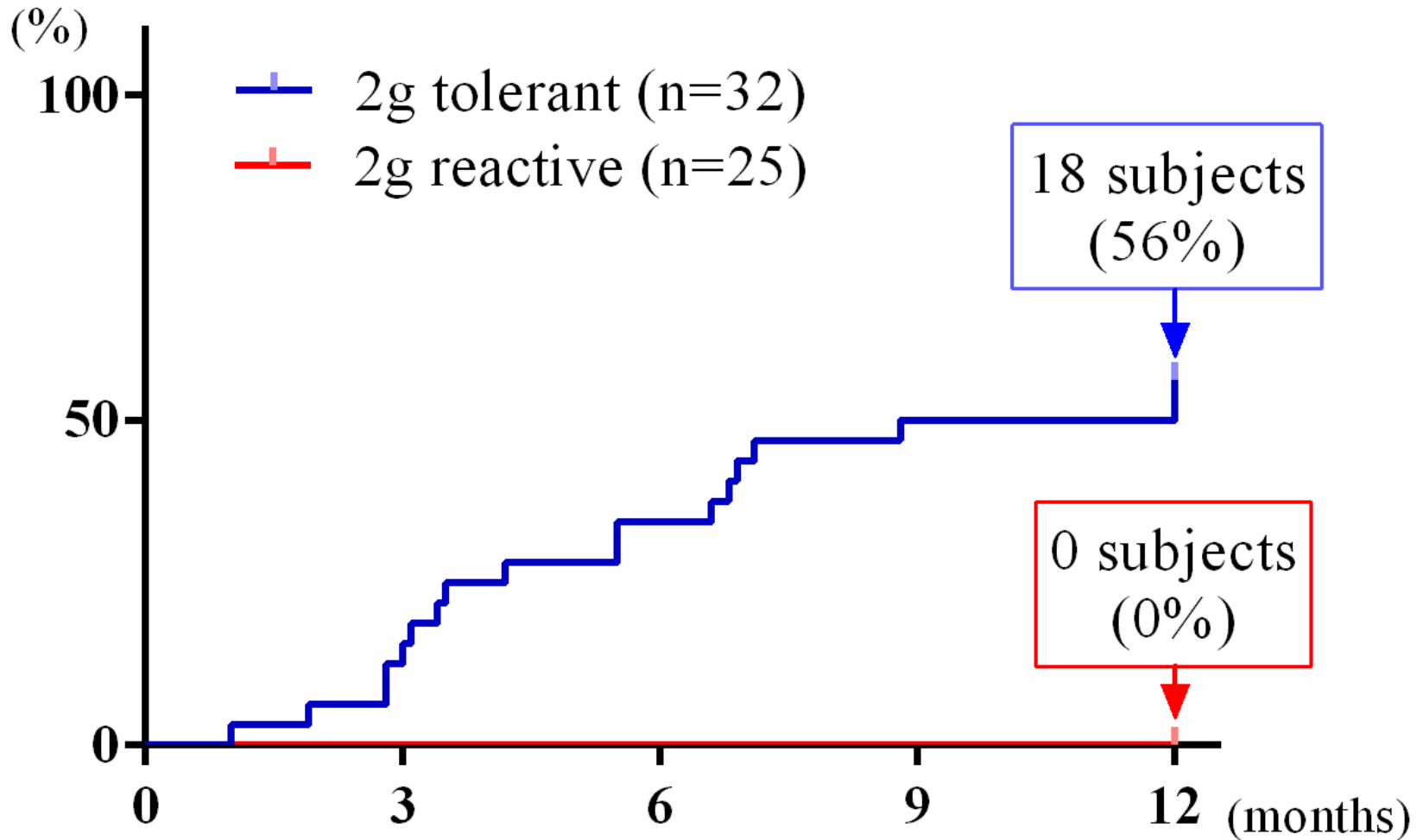


Half of 3mL tolerant tolerated 25 mL of milk





Half of 2g tolerant tolerated 15 g of udon



Anaphylaxis at home

	Very low dose	Dose escalation
Cow's milk	2.4% to 3 mL heated milk	7.5% to 4-25 mL heated milk
Wheat	3.1% to 2 g Udon noodles	0% to 3-15 g Udon noodles

Okada Y, et al. *Allergol int* 2015; **64**: 272-6.

Okada Y, et al. *Allergol int* 2016; **65**: 82-7.

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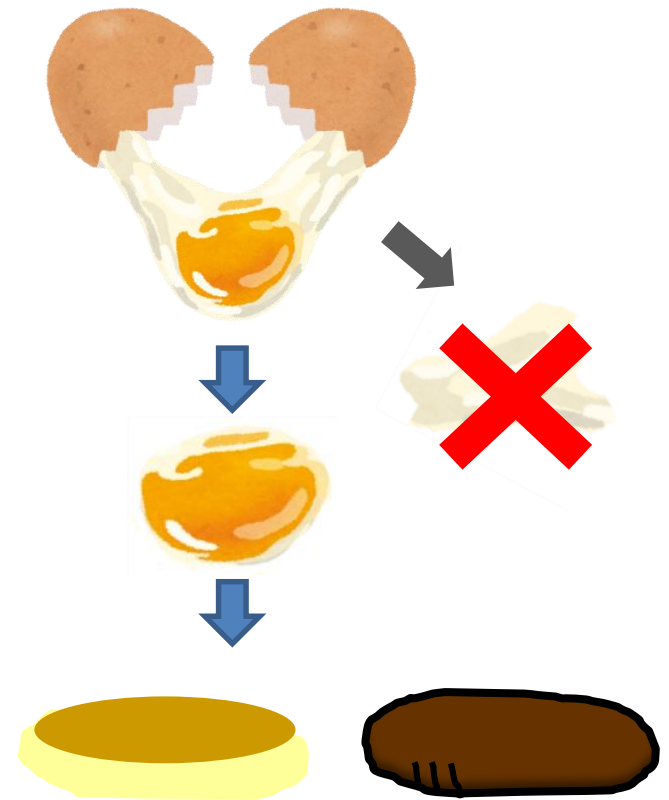
EYSEW OFC

Heated **e**gg **y**olk

slightly contaminated with

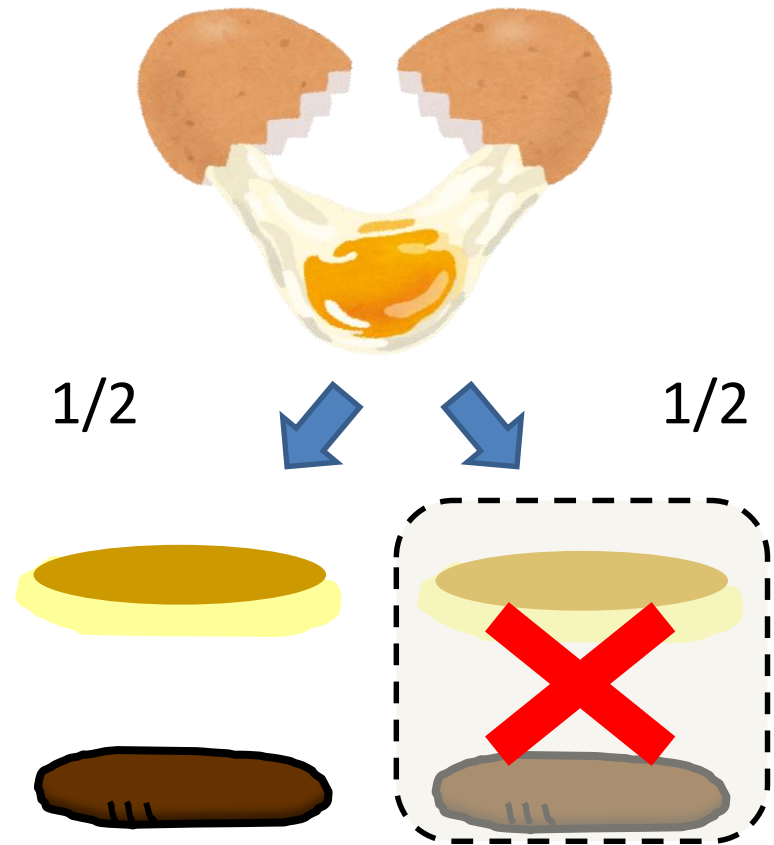
egg **w**hite

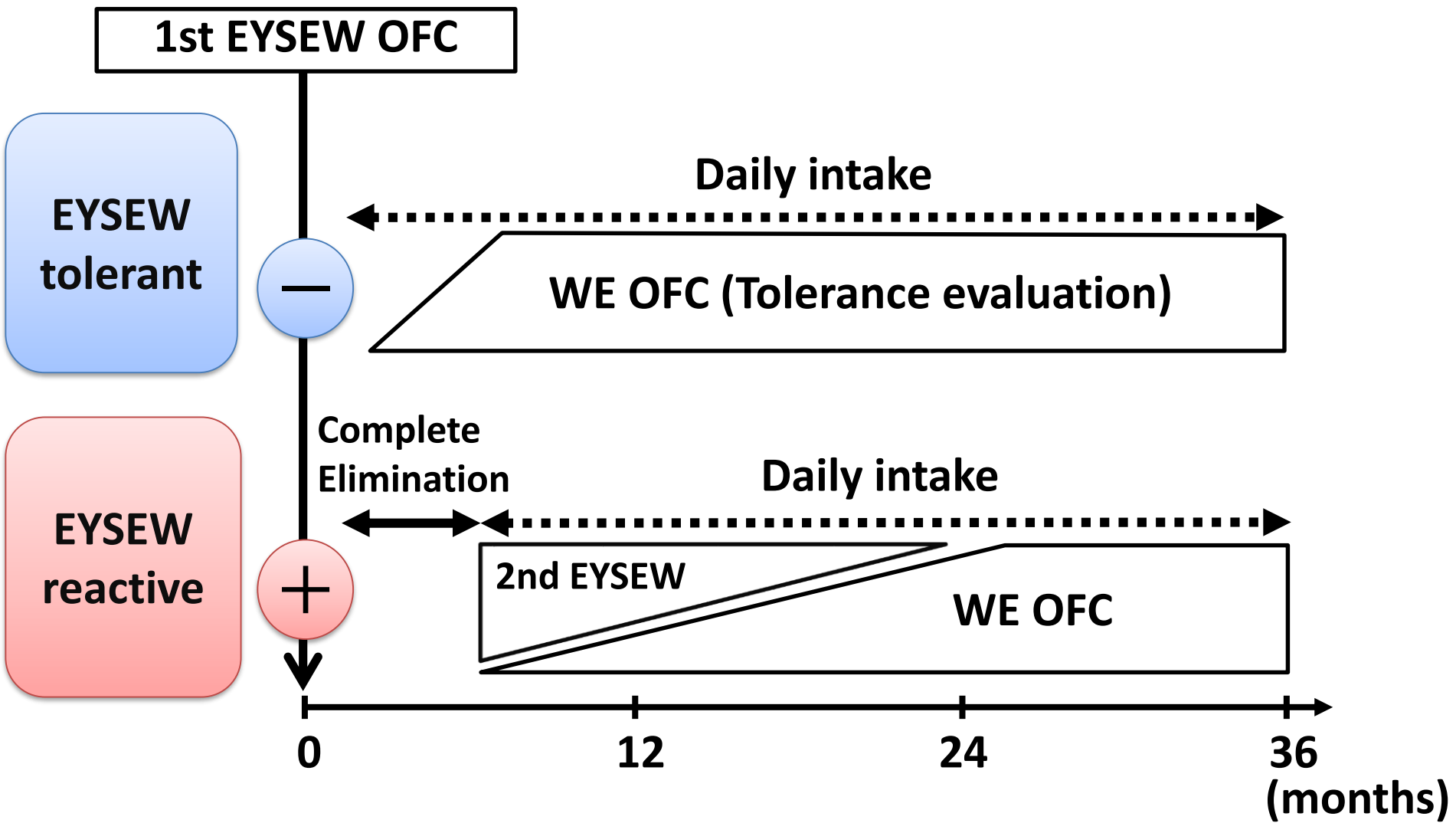
(200mg protein)



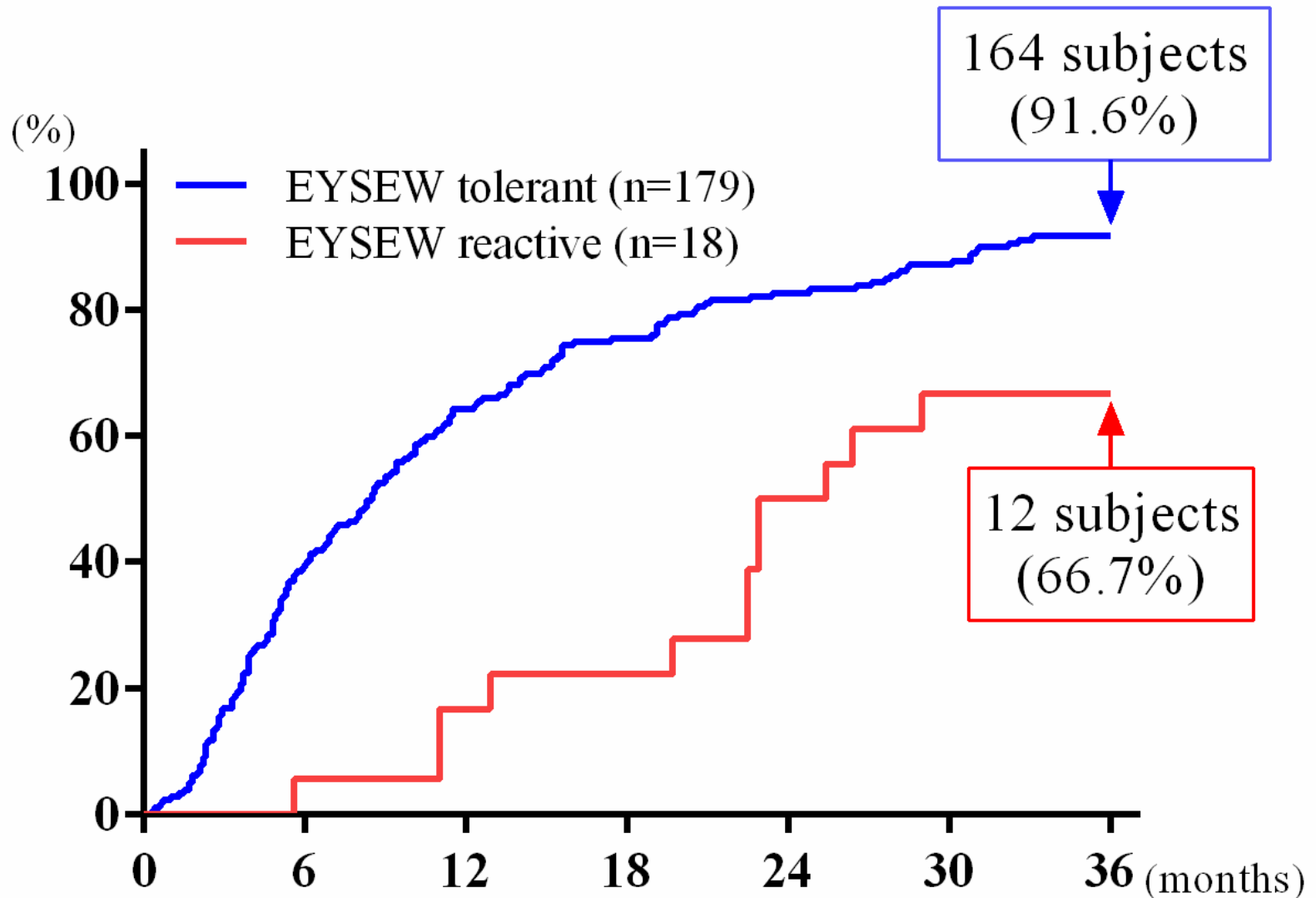
WE OFC

Half of a heated
whole **e**gg
(2200mg protein)





Almost all of EYSEW tolerant tolerated heated hen's egg



Persistent egg allergy at 36 months

Variables		Odds (95% CI)	<i>P</i> value
EYSEW OFC	EYSEW reactive	4.6 (1.4-15.0)	0.010
	EYSEW tolerant	1.0	
Egg IgE	per tenfold increase	3.3 (1.3-8.7)	0.013

Limitation

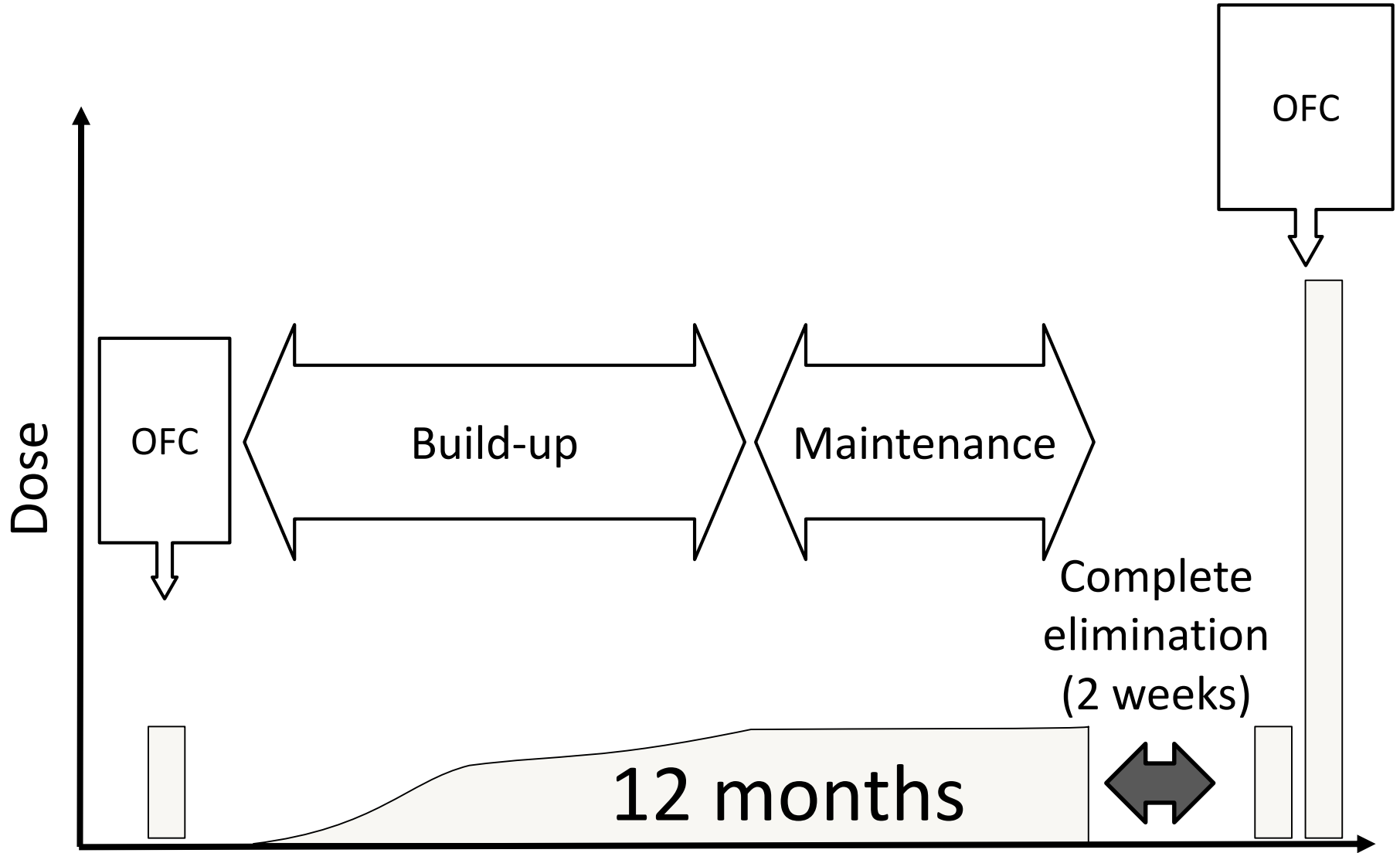
- Cofactors that lower threshold
(e.g. medications, exercise, acute infection)

Simons FE, et al. *World Allergy Organ J* 2011; **4**: 13-37.

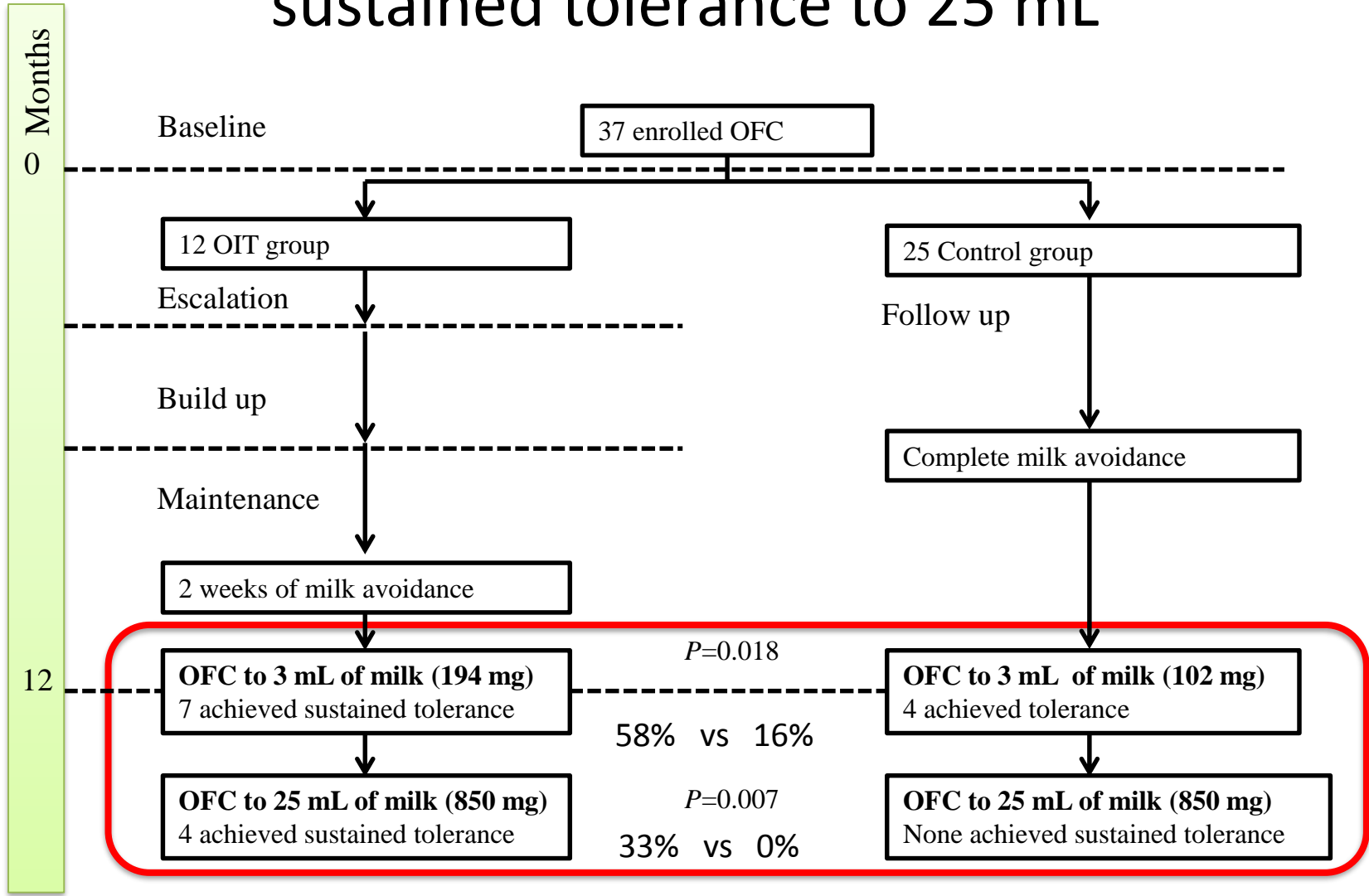
- Natural course predictors by very low dose
OFC results

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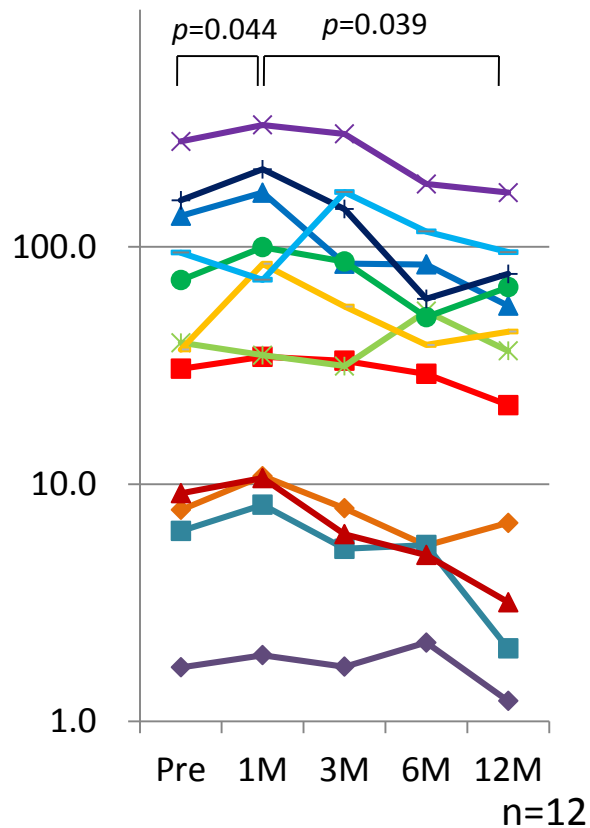
33% in OIT group achieved sustained tolerance to 25 mL



Milk IgE



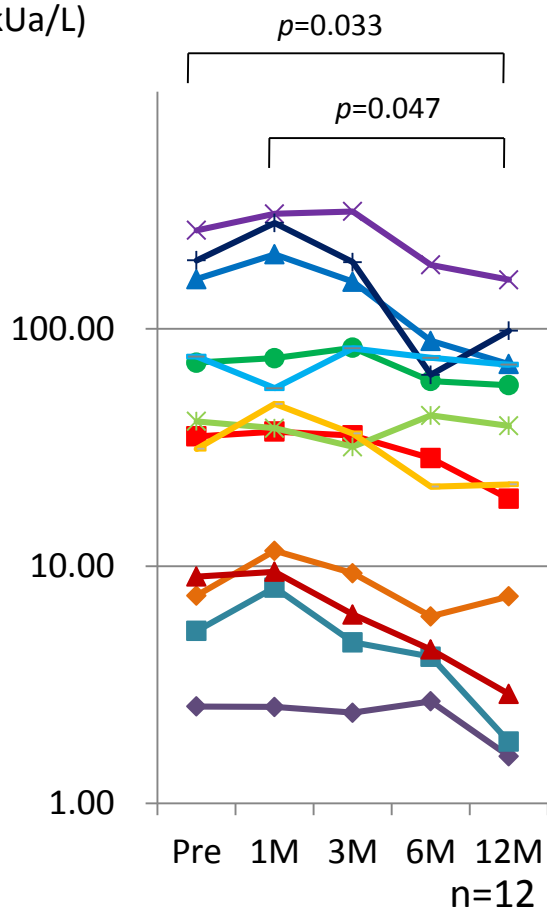
(kUa/L)



Casein IgE

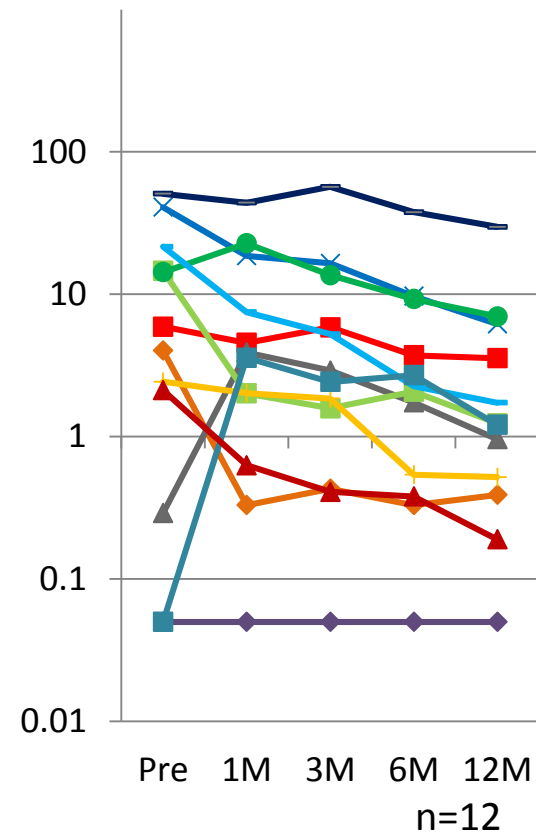


(kUa/L)

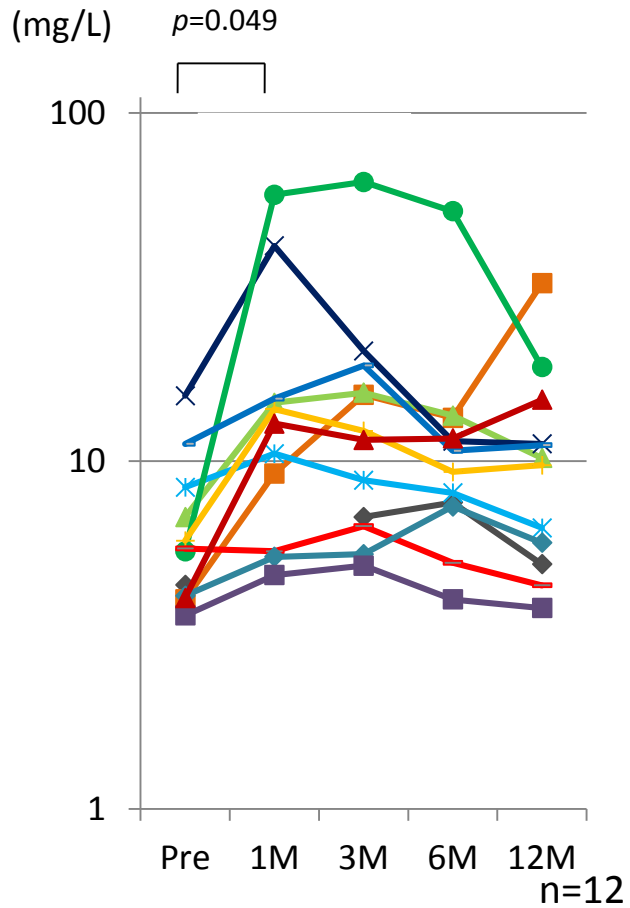


β -lactoglobulin IgE

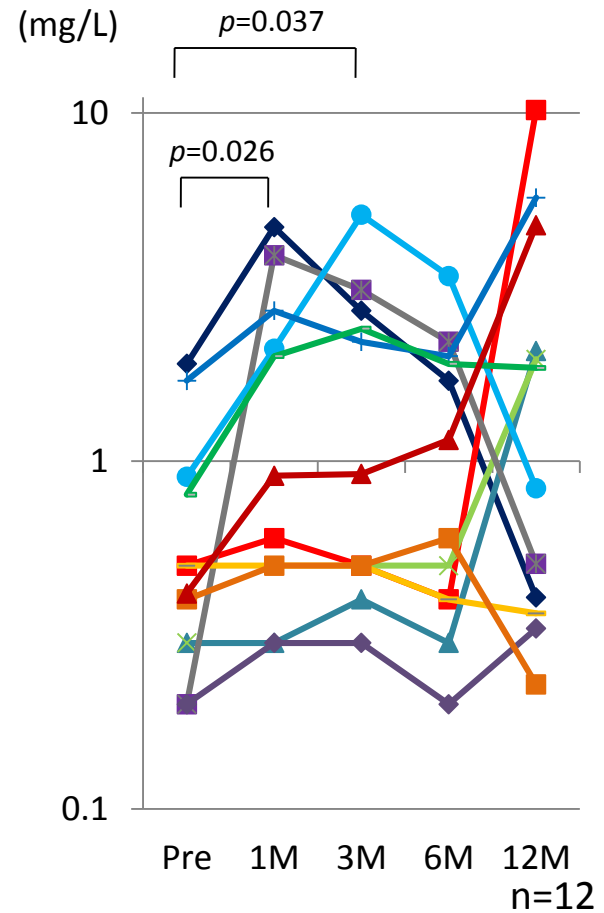
(kUa/L)



Casein IgG



Casein IgG4



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- Very low dose OFC let some food allergic patients avoid complete elimination.
- Very low dose intake could improve food allergy.

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