

PREVENTION AND MANAGEMENT OF ALLERGY IN INFANTS



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Prevention and Management of Allergy in Infants

- What is allergy in infants and how can we prevent it?
 - Food allergy and eczema
- Case studies of how to manage infants with possible allergy
- Allergy health claims for hydrolysed formula milk

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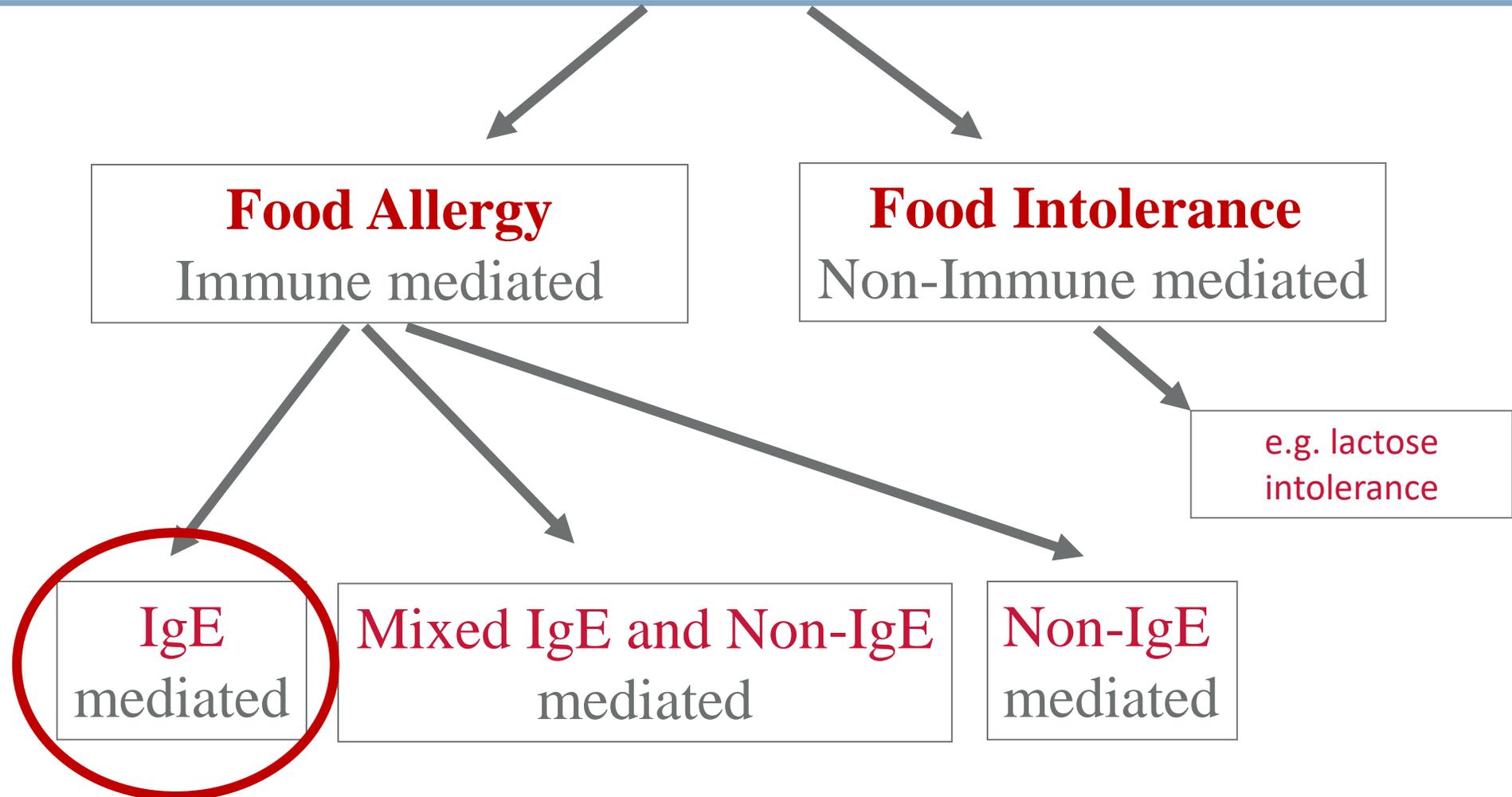
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Eczema = Atopic Dermatitis = Atopic Eczema

Itchy skin condition

- + early onset (<aged 2 years)
- + either generally dry skin
or typical appearance

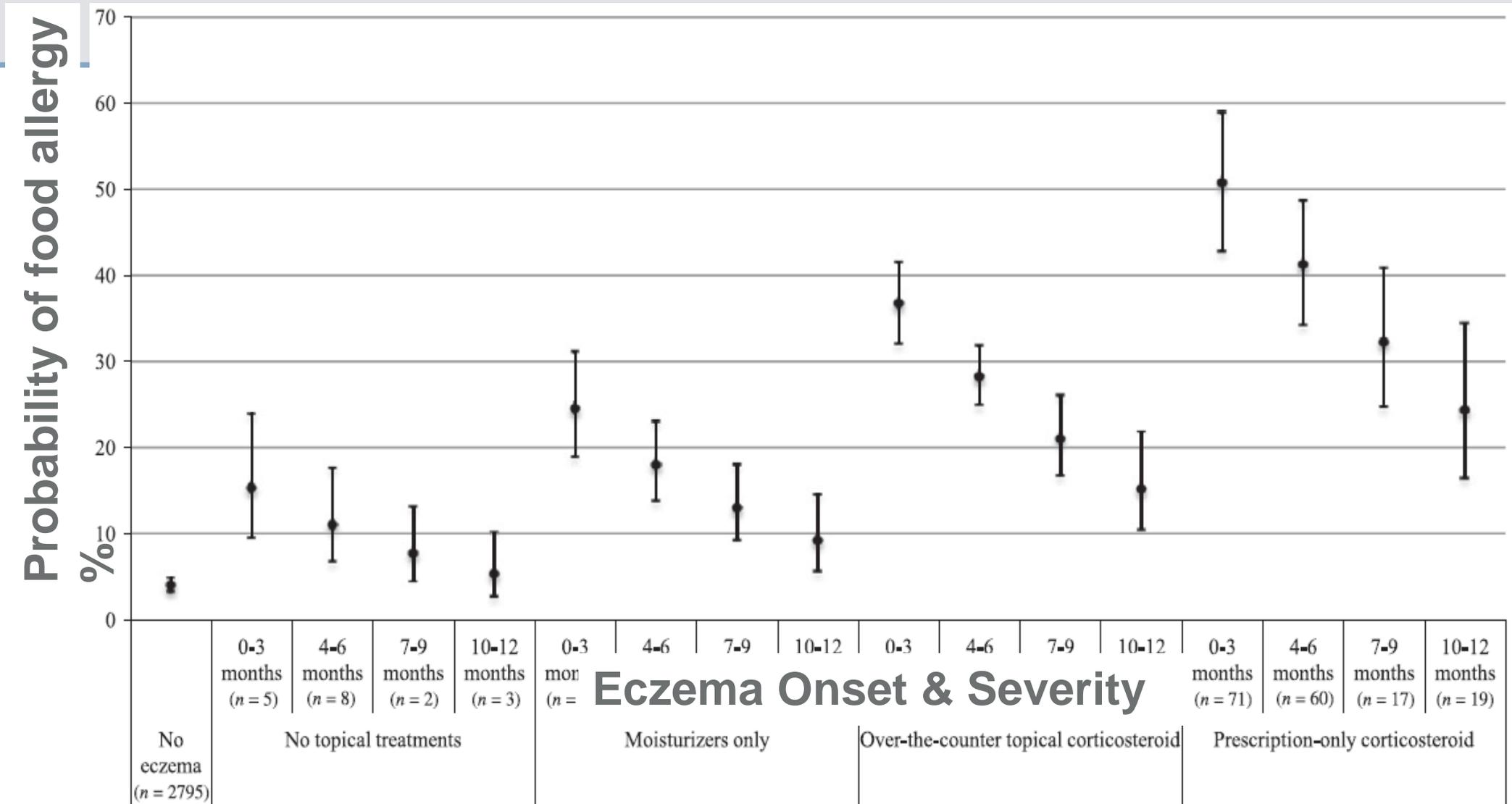
Food Hypersensitivity (All **reproducible** reactions)



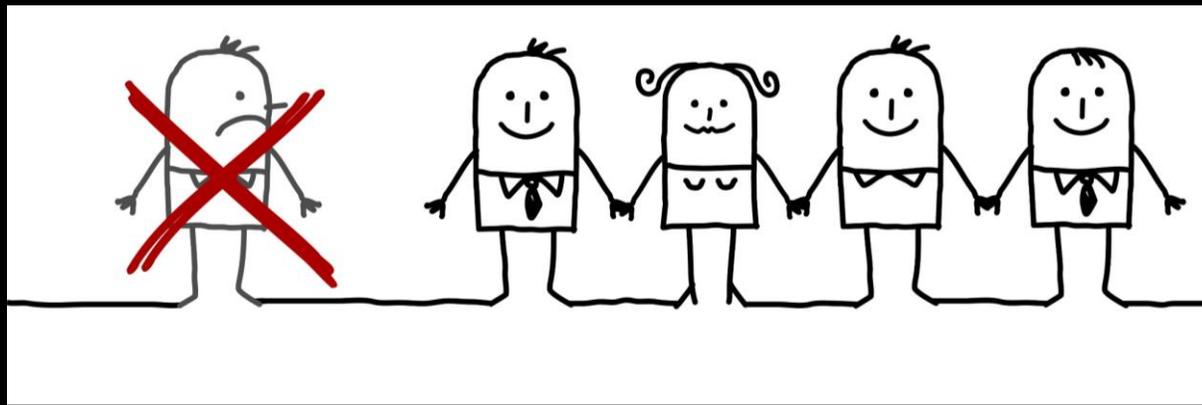
IgE-mediated Food Allergy



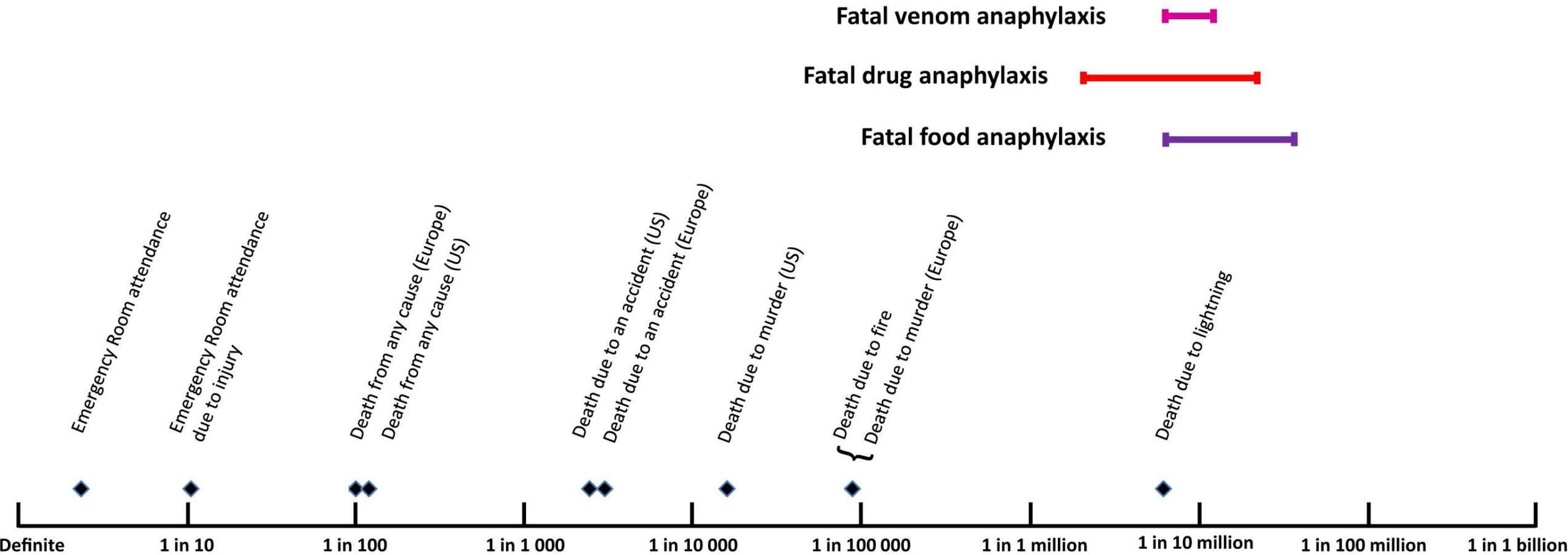
Relationship between Eczema and Food Allergy



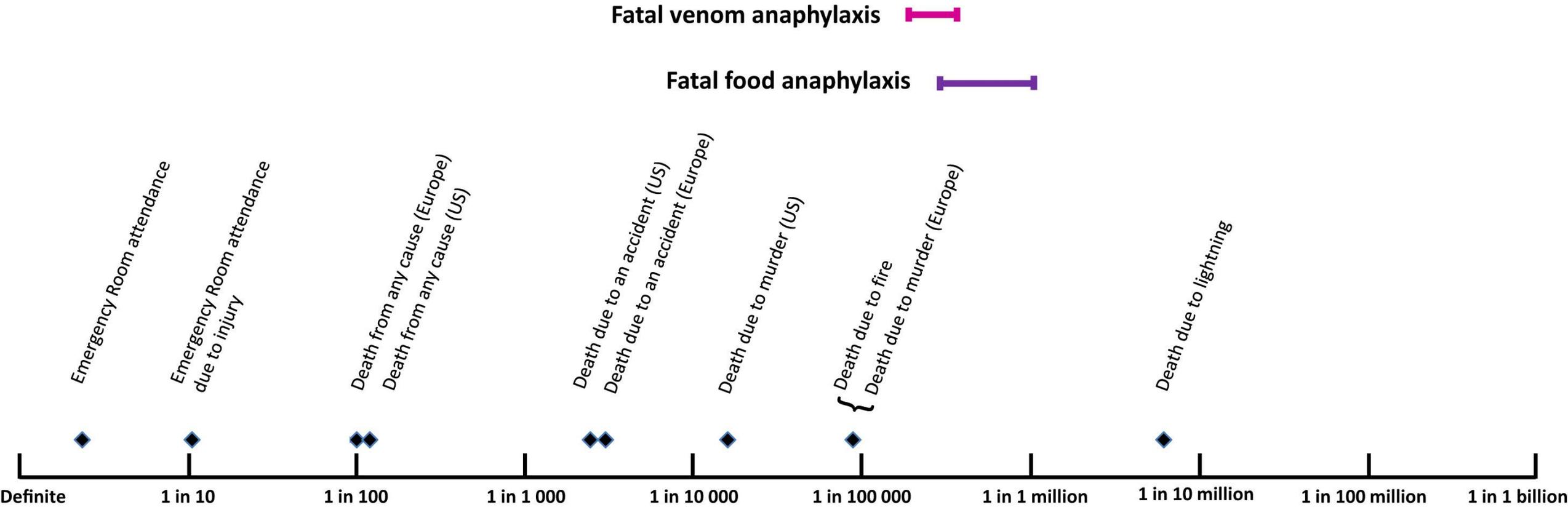
Food allergy has a significant impact on quality of life



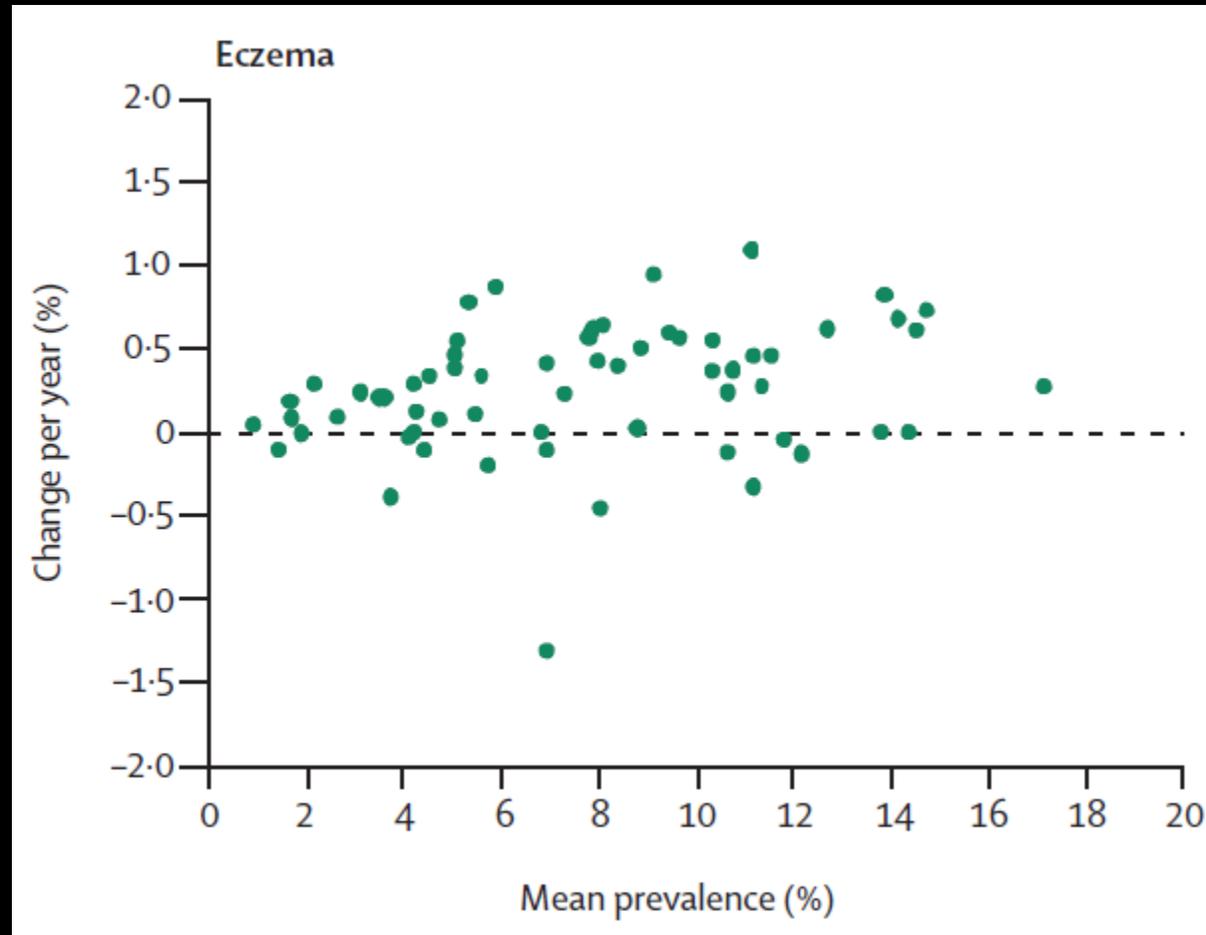
Annual incidence of fatal anaphylaxis in an unselected population

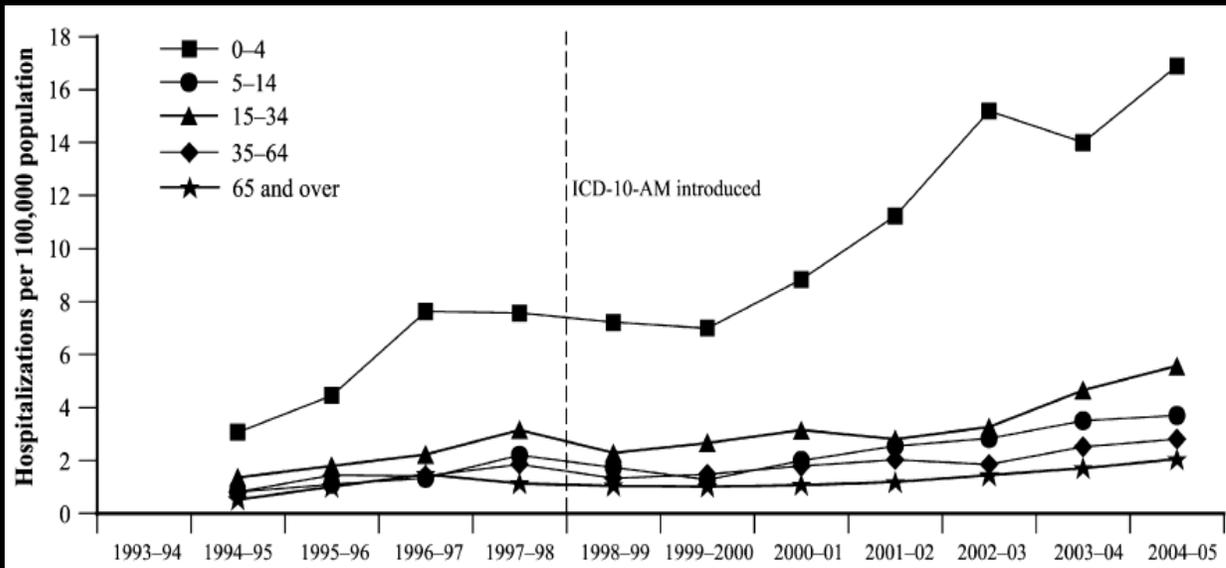
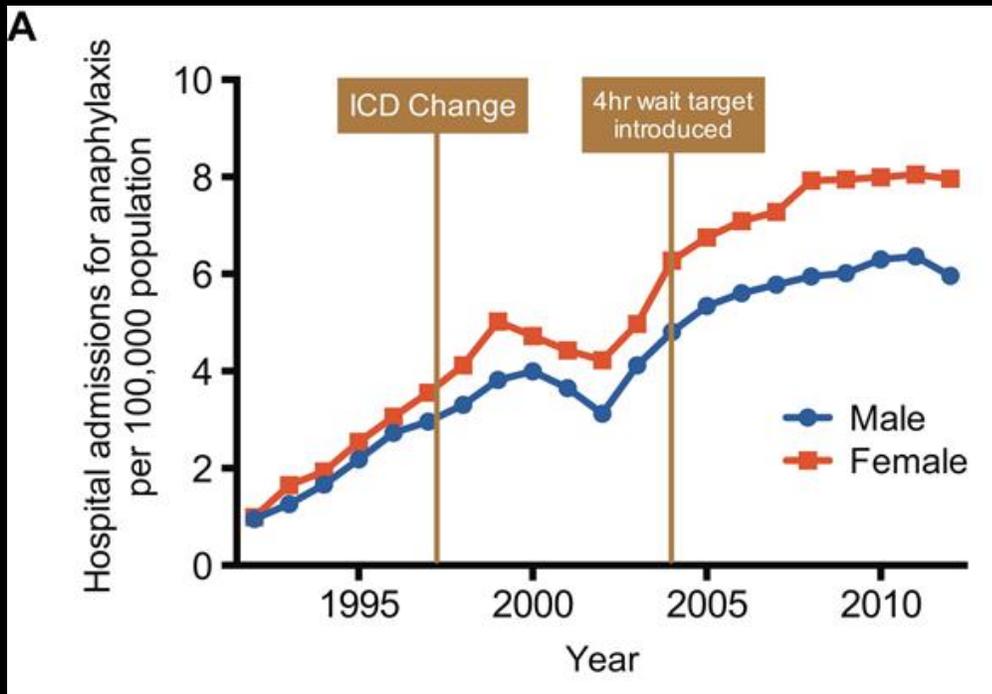


Annual incidence of fatal anaphylaxis in food or venom allergic individuals



Eczema in 6-7 year old children – Global trends in prevalence





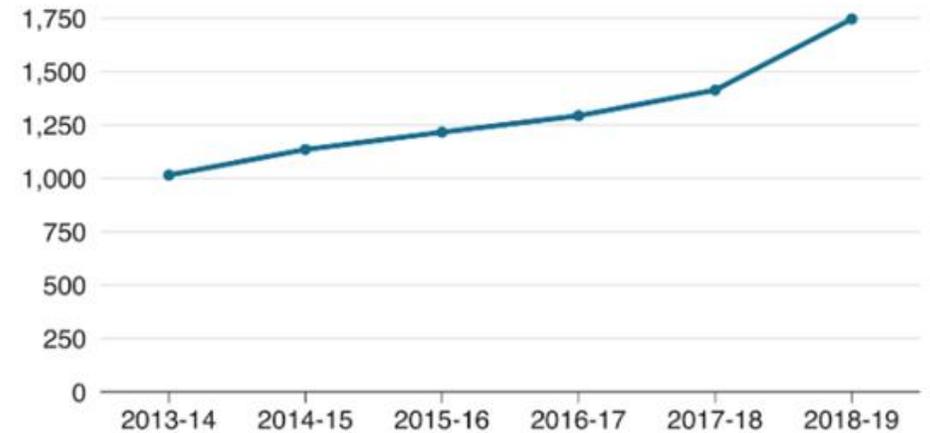
- Family demand law change after Byron burger death
- Boy's cheese allergy death 'unprecedented'

When adults with severe allergic reactions treated in hospital were also included, the figures rose from 4,107 cases to 5,497 over five years.

Anaphylaxis is a severe allergic reaction which can be life-threatening.

Number of children admitted to hospital with severe allergic reactions

All under-18 admissions in England, 2013-14 to 2018-19



Source: Hospital Episode Statistics, NHS Digital

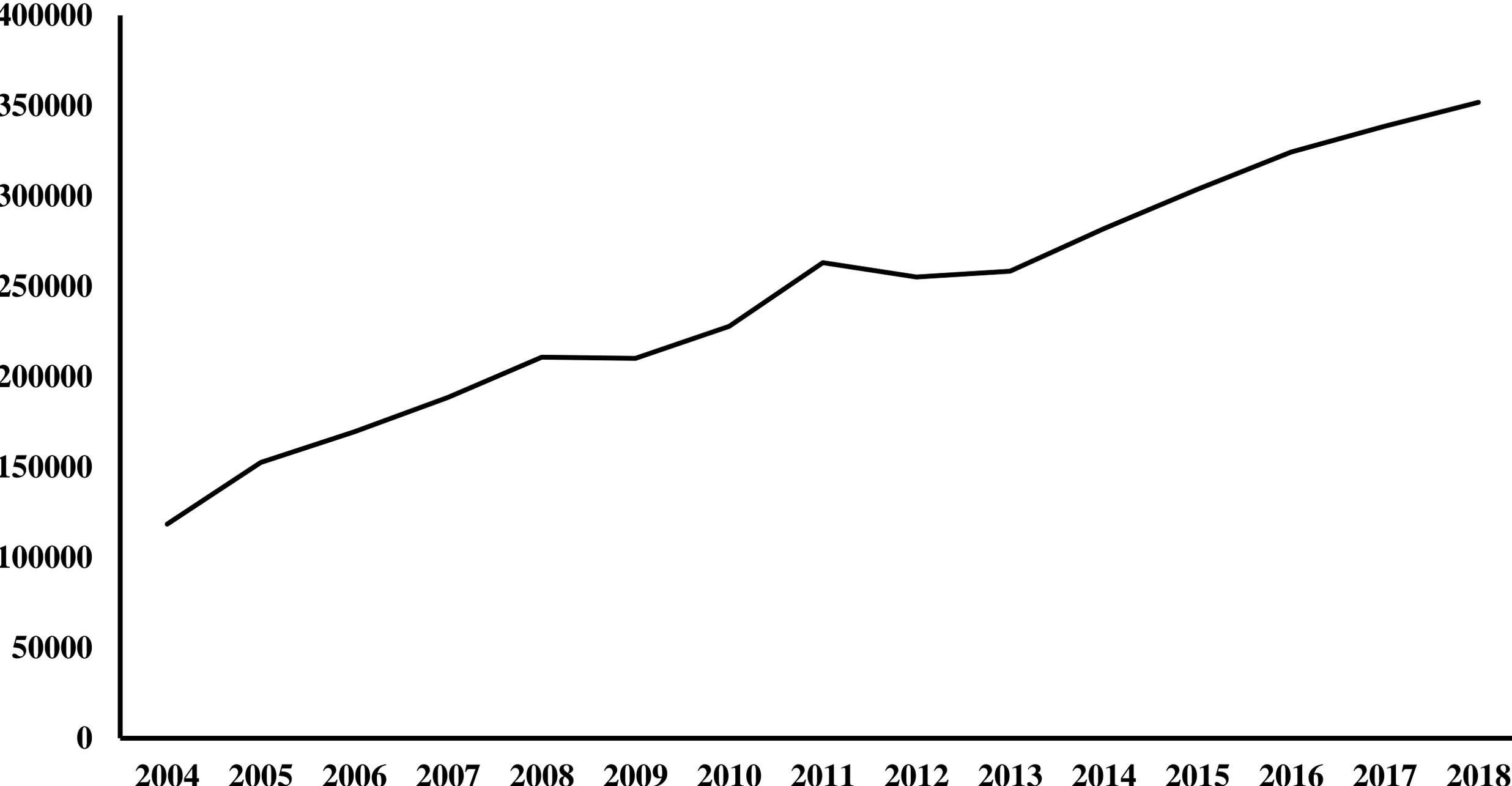
BBC

The most common causes of severe allergic reactions are foods such as nuts, fish and shellfish but they can also be triggered by wasp and bee stings, drugs and dairy products, among others.

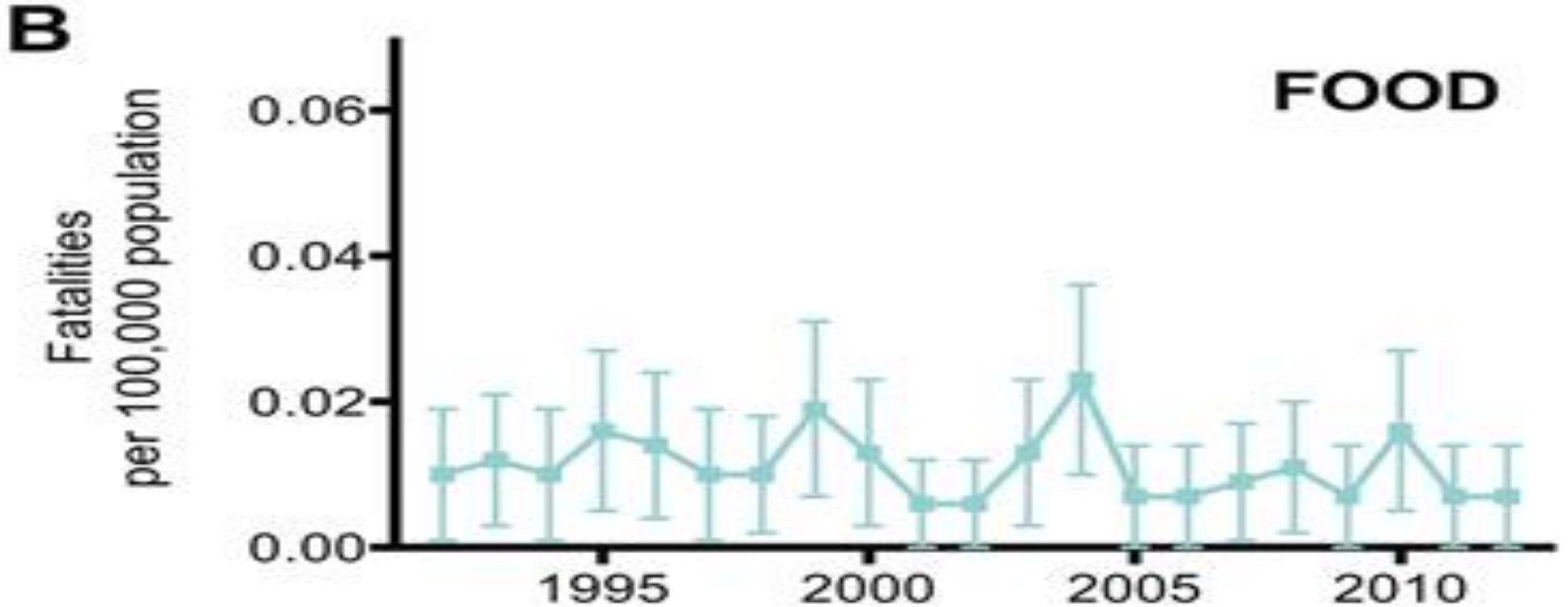
Even the tiniest exposure to one of these allergens can be enough to set off an anaphylactic reaction and bring on breathing difficulties, rapid heartbeat and loss of consciousness.



Adrenaline Autoinjector Prescriptions - England 2004-2018



Deaths from food anaphylaxis: no increase



Too much medicine



The BMJ's Too Much Medicine initiative aims to highlight the threat to human health posed by overdiagnosis and the waste of resources on unnecessary care. We are part of a movement of doctors, researchers, patients, and policymakers who want to describe, raise awareness of, and find solutions to the problem of too much medicine.

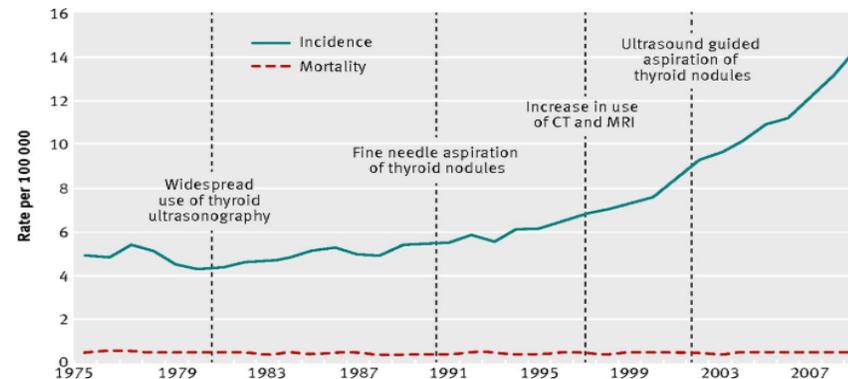
Causes of too much medicine include expanded disease definitions, uncritical adoption of population screening, disease mongering and medicalisation, commercial vested interest, strongly held clinical beliefs, increased patient expectations, litigation, and fear of uncertainty and new technology. Winding back the harms of too much medicine invites clinicians to focus on those who are sick, and only intervene with those who are well when there is a strong case to do so.

How to decide how much is too much?

How to spot too much medicine

A hallmark of too much medicine is increased diagnosis or medical activity for little gain, as described by Brito et al in their article on thyroid cancer.

"The most compelling evidence that patients with low risk cancers are being overtreated is that despite a threefold increase in incidence of papillary thyroid cancer over the past 30 years, the death rate has remained stable (0.5/100 000 in 1979 and 0.5/100 000 in 2009)"

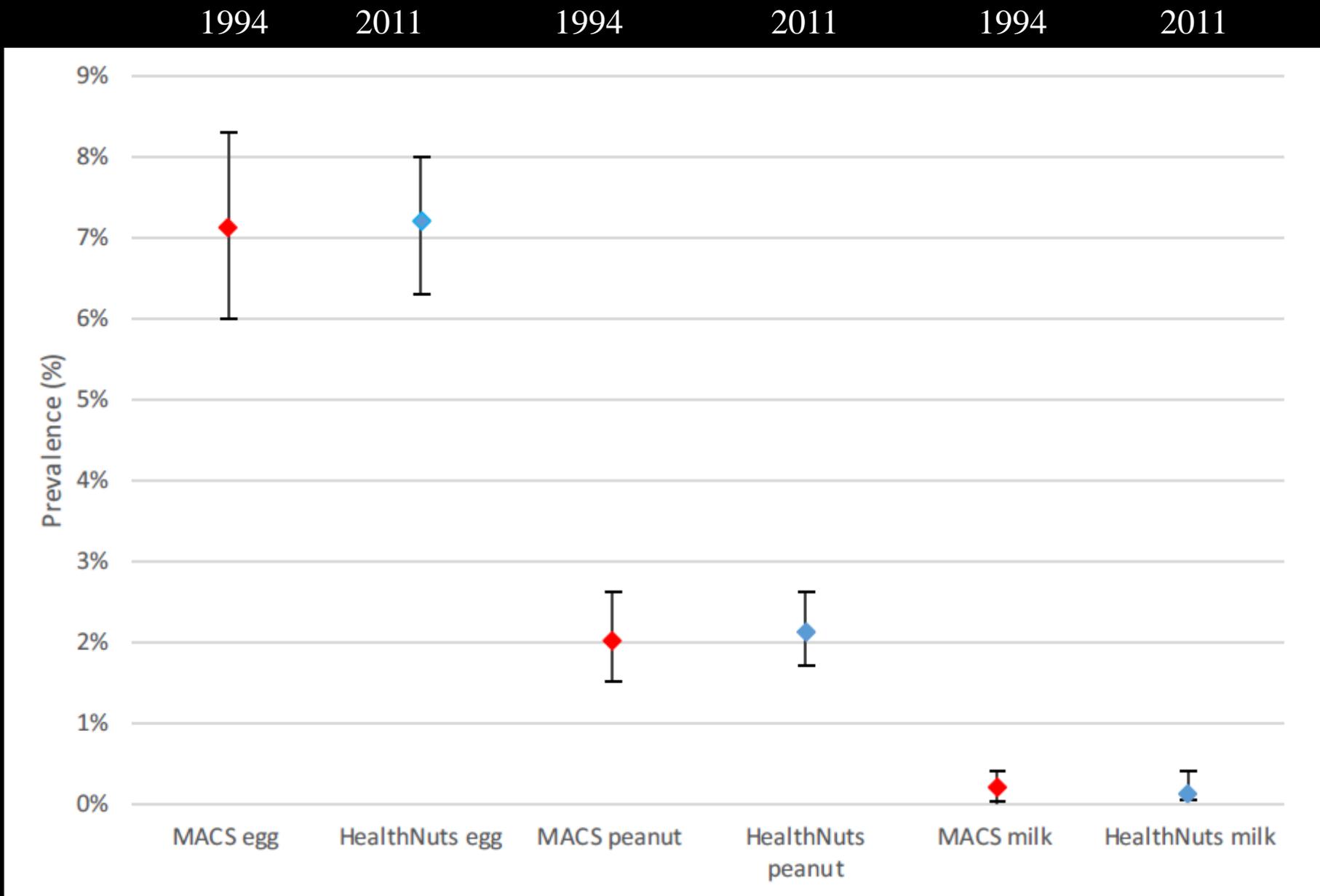


Digital theme issue on overdiagnosis

Winding back the harms of too much medicine

The BMJ is a partner in the international scientific conference, Preventing Overdiagnosis. The last conference took place on 20–22 August 2018 in Copenhagen. Find out more by looking at our digital theme issue on overdiagnosis. This opinion piece by The BMJ's Helen Macdonald discusses the themes of the conference.

In July 2016 the journal joined forces with the overdiagnosis standing group of the UK's Royal College of General Practitioners
 Better medicine: shared decisions, best evidence .



Summary – Eczema and Food Allergy in Infants

Top Food Allergy Myths:

~~Allergic reactions get more severe with each exposure~~

~~We can predict which children with food allergy get severe / life-threatening reactions~~

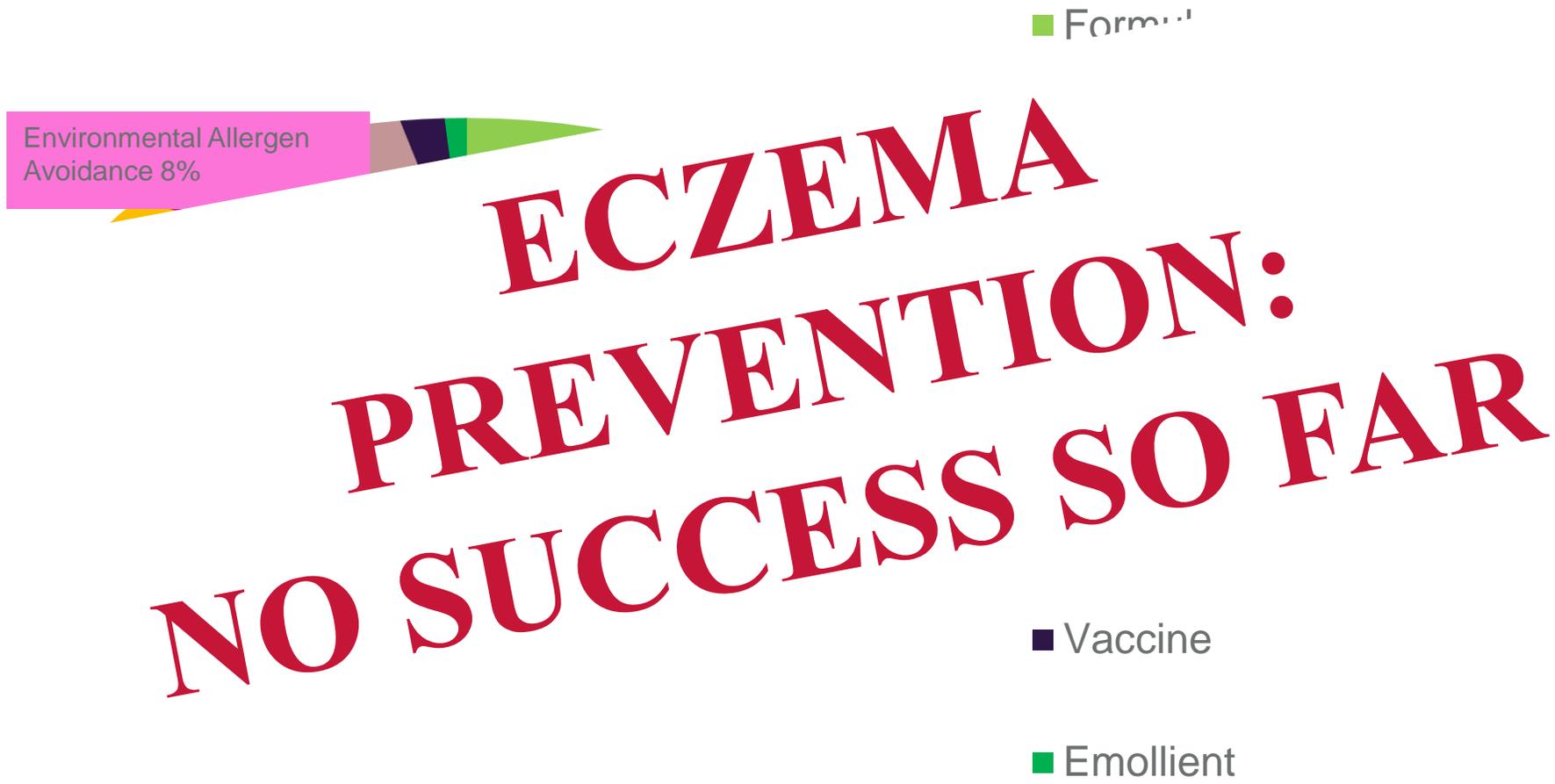




No convincing, direct evidence that any of these interventions impact on risk of allergy

- Antibiotic use
- Caesarean section
- Vaccinations
- Infections
- Microbe-related products such as probiotics or prebiotics
- Vitamins, minerals, fish oil, diet in general
- Breastfeeding duration

Eczema Prevention Strategies 1969-2010



Filaggrin
The 'allergy gene'

**Increases risk of
both eczema and
food allergy**

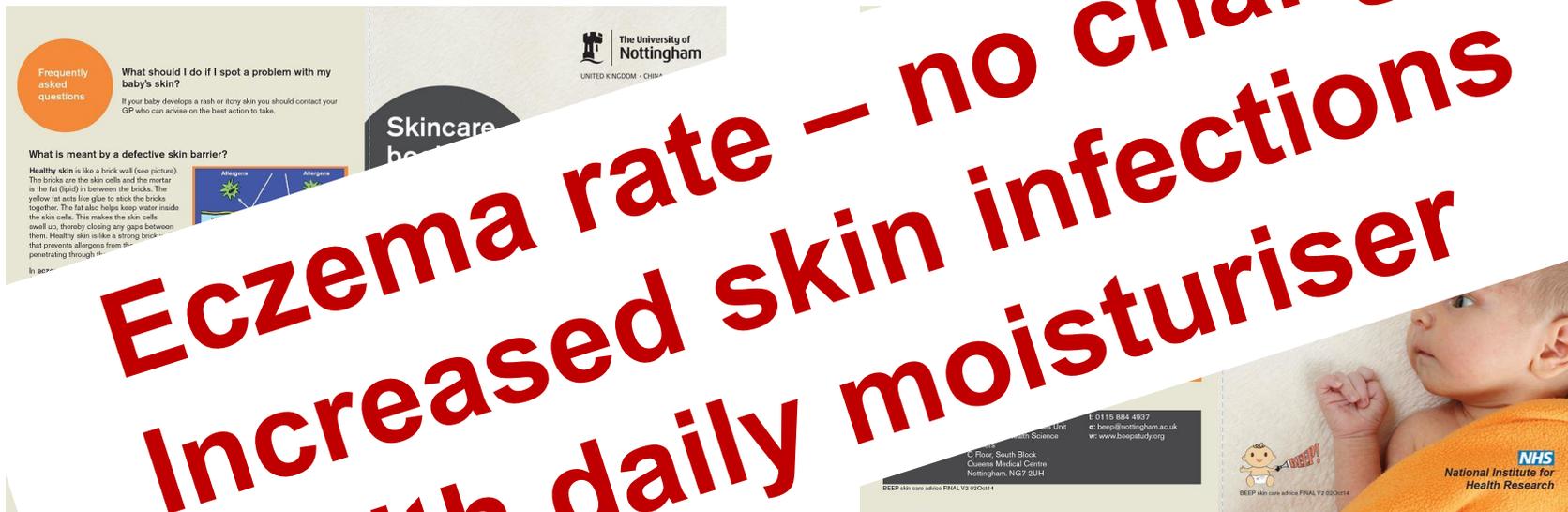


BEEP Trial

Skin care advice only

Skin care advice

it



Eczema rate – no change with daily moisturiser



+

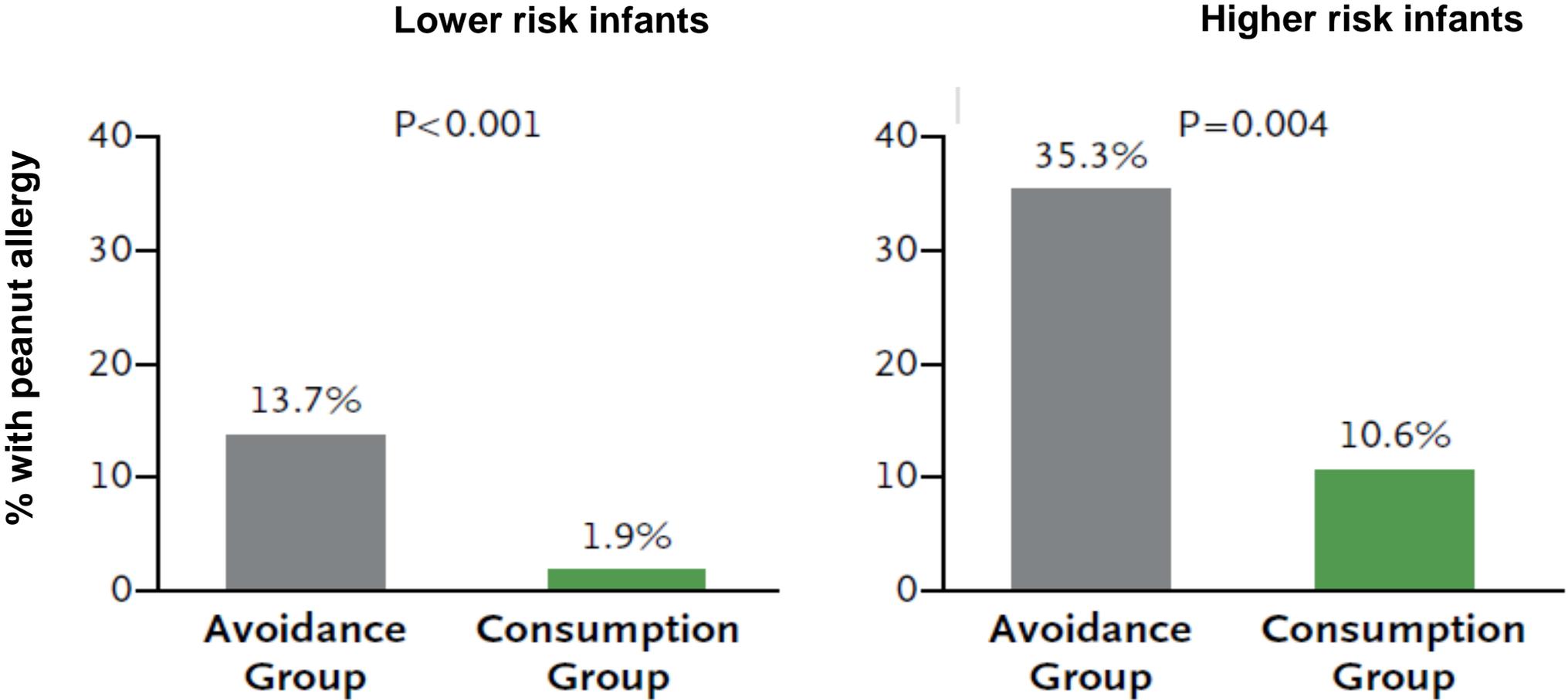


or

Chalmers JR et al. *Trials* 2017;18(1):343

Chalmers et al. *Lancet* (in press)

Strict peanut avoidance increases risk of peanut allergy



Early introduction of allergenic foods and risk of developing food allergy

Avoidance of common allergenic foods such as egg and peanut is no longer recommended

If they are eaten in the family, include them in the infant diet sooner rather than later, together with other solid foods

- Whole nut should not be given to infants

Look for the Lion

- Egg should be Lion stamped



- Infants with troublesome eczema might already have an egg allergy by age 6 months

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Scenario #1: Breastfed infant with symptoms of crying, vomiting or eczema



No proven role for maternal dietary exclusions or specialised formula milk

If women feel that dietary exclusions make a difference then ensure that they have appropriate dietary advice/intake

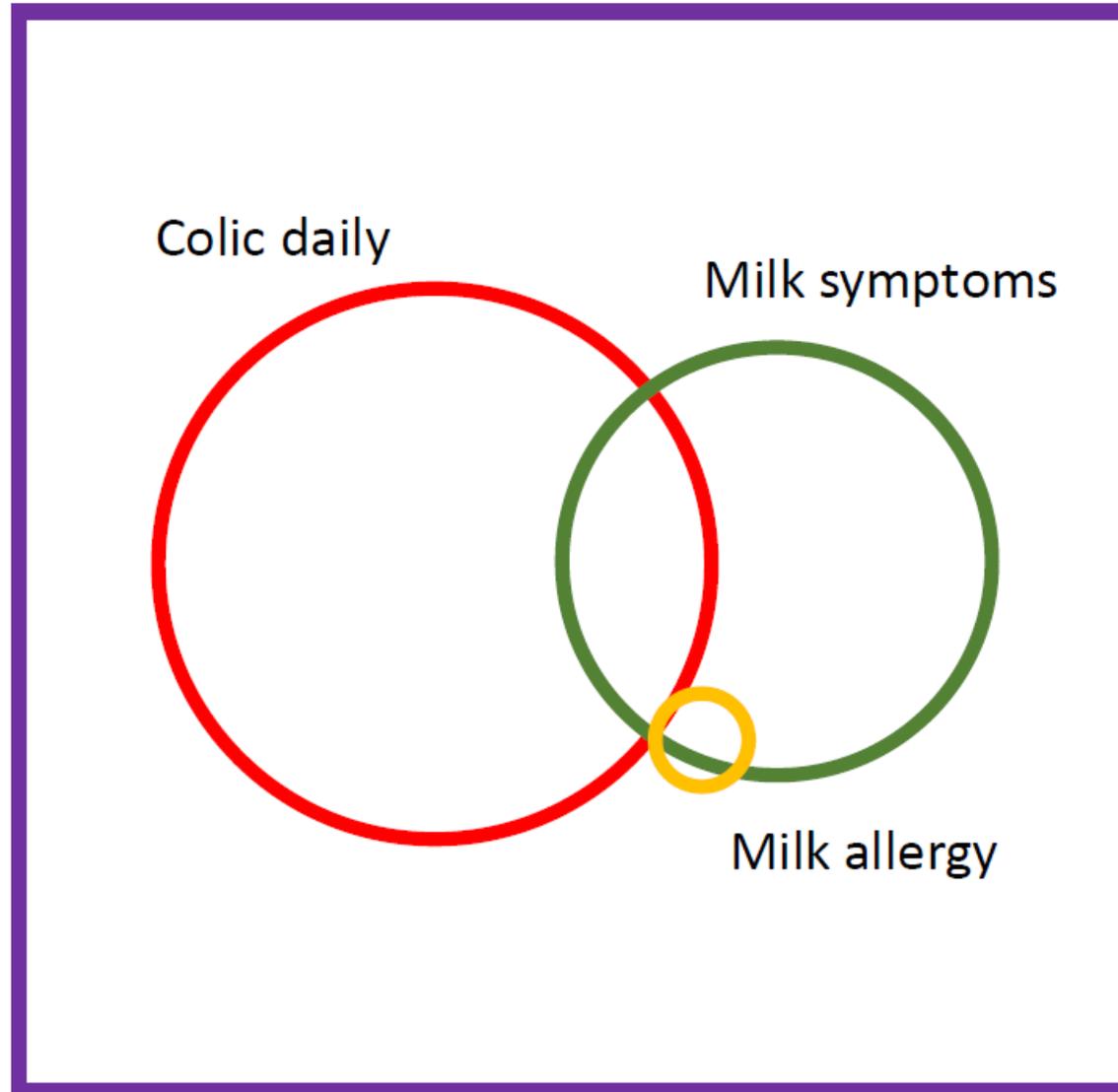
Manage vomiting, crying, eczema in the usual way...

Positioning, reassurance, skin creams and excluding serious underlying issues ...



- bile-stained vomiting
- growth failure
- developmental delay
- severe eczema all over body
- blood in stools

Association between parent-reported colic and cow's milk allergy in the Enquiring About Tolerance trial participants



Scenario #2: Breastfed infant with acute symptoms after trying cow's milk



Often first formula milk, yoghurt, baby food with powdered milk as ingredient

No proven role for maternal dietary exclusions or specialised formula milk

Eczema often present

If women wish to try dietary exclusions then ensure that they have appropriate dietary advice/intake

Mother and family may wish to avoid cow's milk to reduce risk of accidental exposure of the infant

Having an infant with milk allergy is a good reason to continue breastfeeding – the alternatives are suboptimal

Scenario #3: Formula fed infant with symptoms of crying, vomiting or eczema



Manage vomiting, crying, eczema in the usual way...

Positioning, reassurance, skin creams and excluding serious underlying issues ...



- bile-stained vomiting
- growth failure
- developmental delay
- severe eczema all over body
- blood in stools



Have a low threshold for trying a low-allergy formula if:

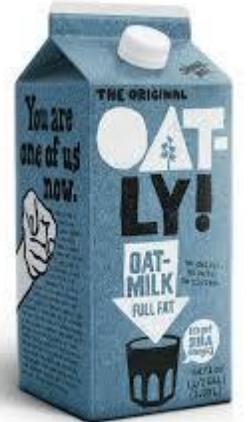
- Symptoms started soon after initiating formula feeding
- Symptoms are unusually severe
- Infant is failing to thrive



Cow's milk alternatives for infants with milk allergy who can't access breastmilk

Infants aged ≥ 9 months and established on solid foods or still largely breastfed:

Plant-based alternatives are usually sufficient... oat, coconut, almond, soya etc



Infants aged < 9 months, or not well-established on solid foods:

Specialised prescription formula – usually an extensively-hydrolysed cow's milk formula



Infant formula milk is not required nutritionally beyond age 1 year

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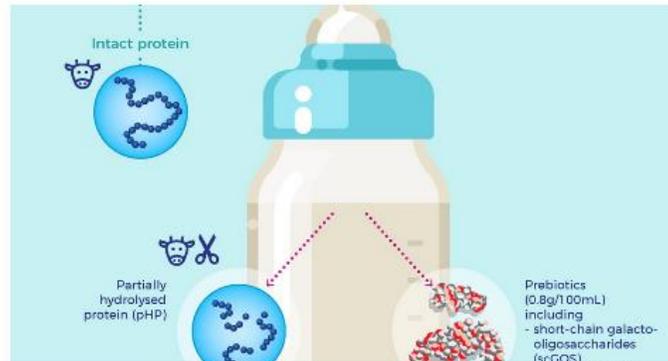
Prebiotic-supplemented partially hydrolysed cow's milk formula for the prevention of eczema in high-risk infants: a randomized controlled trial

R. J. Boyle^{1,2,*}, M. L.-K. Tang^{3,4,5,*}, W. C. Chiang⁶, M. C. Chua⁶, I. Ismail^{4,5}, A. Nauta^{7,8}, J. O'B. Hourihane⁹, P. Smith¹⁰, M. Gold¹¹, J. Ziegler¹², J. Peake¹³, P. Quinn¹¹, R. Rao¹⁴, N. Brown¹⁵, A. Rijniere^{7,8}, J. Garssen^{7,8} & J. O. Warner^{1,2} On behalf of the PATCH study investigators[†]

Results: Eczema occurred by 12 months in 84/293 (28.7%) infants allocated to pHF-OS at 0-4 weeks of age, *vs* 93/324 (28.7%) control (OR 0.98 95% CI 0.68, 1.40; $P = 0.90$), and 107/347 (30.8%) pHF-OS *vs* 112/370 (30.3%) control in all infants randomized (OR 0.99 95% CI 0.71, 1.37; $P = 0.94$). pHF-OS did not change most immune markers including total/specific IgE however, pHF-OS reduced cow's milk-specific IgG1 ($P < 0.0001$) and increased regulatory T-cell and plasmacytoid dendritic cell percentages. There was no group difference in adverse events.

Conclusion: pHF-OS does not prevent eczema in the first year in high-risk infants. The immunological changes found require confirmation in a separate cohort.

Nutricia Research Website 2018



Conclusion:



Infant formula made with **partially hydrolysed protein with prebiotics** can be an **effective dietary strategy** with a double impact to **reduce the risk of developing allergy** in high risk infants.

2. support natural development of oral tolerance ⁽²⁰⁾

Nutricia Research Website 2018

'In infants with a high risk of developing allergy, pHP with the prebiotic scGOS/lcFOS (9:1), **has been proven to reduce the risk of eczema and allergy development**' *

Conclusions

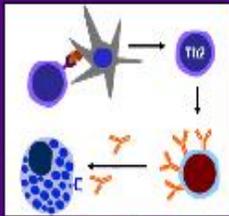
- Eczema is common and is associated with food allergies
- Food allergy is not the main cause of eczema
- Milk allergy affects ~1% of infants but is overdiagnosed
- Maternal dietary restrictions for common infant symptoms not usually worthwhile
- Allergy prevention claims for infant formula milks are not supported by the scientific evidence

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Modules and Short Courses

The Scientific Basis of Allergy



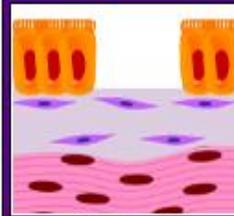
Module 1

Diagnosis & Treatment



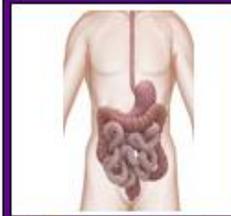
Module 2

The Cutting Edge of Allergy



Module 3

Allergic Gastrointestinal Disease



Optional Module 1

Food Hypersensitivity



Optional Module 2

Allergic Airways Disease and Asthma



Optional Module 3

Rhinitis and Hayfever



Optional Module 4

Allergic Skin Disease



Optional Module 5

Paediatric Allergy



Optional Module 6

Research Skills



Dissertation Module