



## Review: special diets, including egg and cow's milk exclusion, a few-foods diet, and an elemental diet, are not effective in unselected cases of atopic eczema

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# Review: special diets, including egg and cow's milk exclusion, a few-foods diet, and an elemental diet, are not effective in unselected cases of atopic eczema

## QUESTION

In unselected cases of atopic eczema, is dietary avoidance effective?

## REVIEW SCOPE

Double-blind placebo controlled trials evaluating any type of food exclusion alone or in combination with other foods in patients with atopic eczema were selected. Studies that were isolated (diagnostic) food challenges were excluded. *Outcomes* included changes in symptoms of atopic eczema (itching or sleep loss), global changes in composite rating scales, and changes in individual signs of atopic eczema.

## REVIEW METHODS

Medline, EMBASE/Excerpta Medica, Cochrane Skin Group Specialised Register, Cochrane Central Register of Controlled Trials, 5 other databases (all to March 2006), and reference lists were searched; and authors and pharmaceutical companies were contacted for randomised controlled trials (RCTs). 9 RCTs (n = 421; age range 1 mo to 52 y) met the selection criteria: 6 RCTs (n = 288) evaluated egg and cow's milk exclusion diets (eg, substituting with soya milk), 2 RCTs (n = 48) evaluated elemental diets (liquid diet of amino acids, carbohydrate, fat, minerals, and vitamins), and 1 RCT (n = 85) evaluated a few-foods diet. No RCTs had clear allocation concealment, and only 6 RCTs had blinded outcome assessment.

## MAIN RESULTS

Single RCTs showed that in children, a soya milk diet led to less sleeplessness ( $p < 0.05$ ) and greater improvements in eczema activity scores (table), severity scores ( $p < 0.01$ ), and area scores ( $p < 0.005$ ) compared with an egg and cow's milk diet, but groups did not differ for pruritus; an egg exclusion diet improved body surface area and severity scores (table) compared with a normal diet. In 2 RCTs involving children with cow's milk allergy, a hydrolysed whey diet and an amino acid diet did not differ for eczema severity. In 1 RCT that included children, adolescents, and adults, a soya milk diet and an egg and cow's milk diet did not differ for itching. A few-foods diet and a normal diet did not differ for itching, sleep disturbances, body surface area affected, and severity score. An elemental diet and usual hospital diet or placebo did not differ for pruritus, sleeplessness, and eczema activity score.

## CONCLUSIONS

In general, egg and cow's milk exclusion diets, a few-foods diet, and an elemental diet are not effective in unselected cases of atopic eczema. However, egg and cow's milk exclusion diets may be effective in children, especially those with positive testing for egg allergy.

## ABSTRACTED FROM

**Bath-Hextall F**, Delamere FM, Williams HC. Dietary exclusions for established atopic eczema. *Cochrane Database Syst Rev* 2008;(1):CD005203.

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Comparisons of various dietary exclusions with an egg and cow's milk diet (ECM) or normal diet in atopic eczema\*

| Outcomes                             | Number of trials (n) | Follow-up    | Comparisons                 | Event rates     | RBI (95% CI)   | NNT (CI)    |
|--------------------------------------|----------------------|--------------|-----------------------------|-----------------|----------------|-------------|
| Improvement in body surface area†    | 1 (55)               | End of study | Egg exclusion v normal diet | 89% v 59%       | 51% (7 to 111) | 4 (2 to 25) |
| <b>Conditional odds ratio (CI)</b>   |                      |              |                             |                 |                |             |
| Improvement in activity score        | 1 (36)               | 1 month      | Soya milk v ECM             | 11 (2.3 to 49)  |                |             |
| <b>Weighted mean difference (CI)</b> |                      |              |                             |                 |                |             |
| Change in severity score†            | 1 (55)               | 4 weeks      | Egg exclusion v normal diet | 6.1 (0.1 to 12) |                |             |

\*Abbreviations defined in glossary; RBI, NNT, and CI calculated from control event rate and relative risk in article. Analyses based on a random-effects model.

†Participants were children with positive testing for egg allergy.

A well-known association exists between developing atopic eczema and infant exposure to some foods.<sup>1</sup> However, manipulating diets in people with established eczema is of unknown benefit. The systematic review by Bath-Hextall *et al* brings together the empirical trials addressing this question.

The trials had shortcomings. Methods were inadequately reported for randomisation in 7 RCTs and allocation concealment in all trials. Only 1 RCT was analysed by intention-to-treat. Applicability of the findings is compromised by poorly defined

diagnosis in 5 RCTs and severity of the disease in 1 RCT. Only 2 RCTs established no differences at baseline.

Nevertheless, the review raises 2 important conclusions: no dietary exclusion methods were shown to be effective in unselected patients with atopic eczema; yet some dietary interventions (eg, egg restriction) may be useful in patients with suspected food allergy if they have positive IgE (so future trials should focus on this group).

Meanwhile, clinicians faced with patients suspected of having eczema exacerbated by food have

to rely on clinical history (including associations with food exposure) as well as standard clinical tests for IgE sensitisation. No unique indicators for specific food allergies are currently available.

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1. Hill DJ, Hosking CS, de Benedictis FM, *et al*. Confirmation of the association between high levels of immunoglobulin E food sensitization and eczema in infancy: an international study. *Clin Exp Allergy* 2008;**38**:161–8.