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PRACTICE

10-MINUTE CONSULTATION

Measles, mumps, and rubella vaccination in a child with suspected egg allergy

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This is part of a series of occasional articles on common problems in primary care. The *BMJ* welcomes contributions from GPs.

A mother presents with her 12 month old son requesting testing for an egg allergy before the measles, mumps, and rubella (MMR) vaccination; his older sister has a severe egg allergy.

What you should cover

Understanding of allergy can vary notably between patients and healthcare professionals. Explore the mother's concerns surrounding MMR vaccination, focusing on egg allergy in particular.

Egg allergy usually presents with rapid onset of angioedema, urticaria, or gastrointestinal symptoms. Most reactions are mild with no evidence of respiratory or cardiovascular involvement. Severe reactions can involve the upper airways (for example, hoarse cry, change in voice, stridor) or lower airways (cough, wheeze, breathlessness); pallor and floppiness can also occur.^{1 2} Dislike of or refusal to eat eggs do not necessarily indicate an allergy, but may do so.

Ask about previous investigations for food allergy, including any tests done by complimentary or alternative medicine practitioners.

Egg allergy is common in infancy with a prevalence of 1-2% in children aged 2.5 years.¹ The risk is increased in those with a family history of food allergy, although not necessarily to the same food. Ask about other conditions such as eczema or viral induced wheeze, which increase the possibility of an egg allergy.²

Ask about any other vaccinations that the child has had and whether any problems occurred. Previous severe reaction to vaccination is a predictor of future reactions but is usually caused by vaccine constituents other than egg, such as gelatine or neomycin.³

What you should do

Discuss the likelihood of a food allergy. Differentiate between intolerance (non-immunological reaction) and allergy (IgE-mediated in most cases). Explain that allergic reactions involve the immune system and can be triggered by exposure to even small amounts of egg or products that contain egg. Explain that screening for an egg allergy without suspected previous clinical reaction is unhelpful because false positives are common. In particular, if egg or products that contain egg (except baked eggs—for example, in cakes) are tolerated there is no indication for allergy testing (see box). If there is a clinical suspicion of an egg allergy, request a test for egg-specific IgE or refer for a specialist assessment.

Explain the risks of measles, mumps, and rubella to the child's mother. Although these diseases are usually mild, delaying or withholding the vaccination puts the child at risk of potentially serious illness.

Discuss the MMR vaccine and reassure the mother that risks, even in children with severe egg allergy, are very low. Ensure that other fears about the MMR vaccination, such as the unfounded bad publicity about MMR and autism, are discussed. Although the vaccine is cultured in fibroblasts derived from chick embryos, the amount of egg protein in the vaccine is negligible and is most unlikely to trigger a reaction. The British Society for Allergy and Clinical Immunology and the National Institute of Allergy and Infectious Diseases recommend that all children with an egg allergy, no matter how severe, should still have their MMR vaccine as per the usual immunisation schedule.¹ Appropriate resuscitative facilities should always be available when any vaccinations are given, irrespective of egg allergic status.

Vaccination should be delayed if the child is unwell or severely immunocompromised. Children who have had previous serious

reactions to any vaccine should be vaccinated under hospital supervision.

Ensure all concerns are addressed and arrange for the child to receive the MMR vaccination. If egg allergy is confirmed, take a comprehensive assessment for other allergic problems (such as coexistent cow's milk, nut, or peanut allergy), advise on avoidance measures (dietician input can be invaluable), and issue antihistamines and, if necessary, adrenaline autoinjectors to manage accidental exposure. Refer patients with a history of life-threatening reactions for a specialist assessment.⁴ Explain that long-term prognosis is good, with spontaneous resolution in most cases.¹

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- 1 Clark AT, Skypala I, Leech SC, Ewan PW, Dugué P, Brathwaite N, et al. British Society for Allergy and Clinical Immunology guidelines for the management of egg allergy. *Clin Exp Allergy* 2010;40:1116-29.
- 2 Lack G. Food allergy. *N Engl J Med* 2008;359:1252-60.
- 3 Kelso JM LJ. Adverse reactions to vaccines. *Ann Allergy Asthma Immunol* 2009;103:1-14.
- 4 National Institute for Health and Clinical Excellence. NICE clinical guideline 116: food allergy in children and young people. 2011. www.nice.org.uk/guidance/CG116

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Examples of raw or partly cooked products that contain egg

- Ice cream
- Lemon curd
- Mayonnaise
- Pancakes
- Pizza
- Quiche
- Yorkshire pudding

Useful reading**For patients**

NHS choices. MMR (www.nhs.uk/Conditions/MMR/Pages/Introduction.aspx)

Allergy UK. Information about allergies for patients (www.allergyuk.org)

For healthcare professionals

Department of Health. Green book: immunisation against infectious disease (www.dh.gov.uk/greenbook)

Boyce JA, Assa'ad A, Burks AW, Jones SM, Sampson HA, Wood RA, et al. Guidelines for the diagnosis and management of food allergy in the United States: summary of the NIAID-sponsored expert panel report. *J Allergy Clin Immunol* 2010; 126:1105-18