Vaccinations, Egg Allergy and a COVID vaccination update

Dr Amy Hanley, Paediatric Registrar, Dr Siân Ludman, Paediatric Allergy Consultant

Royal Devon & Exeter NHS Foundation Trust

Egg allergy most commonly presents in infancy with a prevalence of approximately 2% in children1. A clear clinical history and detection of egg white specific IgE (either by serum or skin prick testing) will confirm the diagnosis of egg allergy. Management is centred on egg avoidance initially, and whilst 80% of patients will outgrow their egg allergy it continues in to adulthood in the remainder.

Uncertainty has previously arisen regarding vaccines which have been developed or cultured in chick embryos and may contain egg protein. The following is a summary of key information on these vaccinations including which need referral to secondary care.

**MMR:**

Anyone with an egg allergy **can and should** receive the MMR vaccination as part of their routine immunisations in primary care as there is [no egg protein](https://www.bsaci.org/wp-content/uploads/2020/02/Choosing-Wisely-MMR-vaccinations-in-egg-allergy1.pdf) in the MMR vaccine. Only those who have had an anaphylactic reaction to the MMR vaccine should be assessed by an allergy specialist.

**Influenza:**

Children with egg allergy can safely be given the nasal flu vaccine (LAIV) in primary care/schools. The only exception to this being those children with severe anaphylaxis to egg which required [intensive care admission](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/931139/Green_book_chapter_19_influenza_V7_OCT_2020.pdf).

Egg allergic children with asthma can receive the vaccine in primary care if their asthma is well controlled.

The small number of people who cannot receive the nasal flu vaccine should be offered an inactivated vaccine with very low ovalbumin content (less than 0.12microgram/ml).

**Yellow Fever vaccine:**

Vaccination is not recommended in primary care for people with egg allergy, and they should be referred to an allergist who specialises in vaccines.

**COVID vaccines**

It became obvious as the new COVID Pfizer/BioNTech vaccine was rolled out that there is a small proportion of the population who will have an allergic reaction to it. All vaccines carry a risk of allergic reactions and [anaphylaxis](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/147868/Green-Book-Chapter-8-v4_0.pdf). It is not yet known what is causing these allergic reactions and the governmental response is cautious at present. The Pfizer/BioNTech COVID-19 vaccine contains PEG (polyethylene glycol) a macrogol which is known to cause allergies which has been discussed [here](https://bsaci.us19.list-manage.com/track/click?u=1b50516d4372341033abd0993&id=a5da7d6932&e=8a2a0d892d) as a potential causative agent, but investigation is ongoing and until then [MHRA advice](https://www.gov.uk/government/news/confirmation-of-guidance-to-vaccination-centres-on-managing-allergic-reactions-following-covid-19-vaccination-with-the-pfizer-biontech-vaccine) is for anyone who has had anaphylaxis to a food, drug or vaccine to not have the Pfizer/BioNTech vaccine. Up to date information can be found in the [Green Book](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/943663/Greenbook_chapter_14a_v3.pdf) chapter 14a, a live on line document about UK vaccination schedules and on the MHRA website. The British Society of Allergy and Clinical Immunology and the Resuscitation Council UK have produced an up to date flow sheet on managing anaphylaxis in a [vaccine setting](https://www.bsaci.org/rcuk-publishes-anaphylaxis-guidance-for-vaccination-settings/).

References

1. British Society for Allergy and Clinical Immunology guidelines for the management of egg allergy. Clark et all 2010. Clinical & Experimental Allergy, 40, 1116–1129. https://www.bsaci.org/guidelines/bsaci-guidelines/egg-allergy/
2. <https://www.gov.uk/government/collections/immunisation-against-infectious-disease-the-green-book#part-2:-the-diseases,-vaccinations-and-vaccines>
3. <https://northeast.devonformularyguidance.nhs.uk/referral-guidance/eastern-locality/paediatrics/vaccination-reaction-referrals>