

# Information for Patients & Families

## Vaccinations & Anaphylaxis

Vaccination is one of the most important public health intervention measures used to control infectious diseases and protect everyone. Although mild side effects are common, anaphylaxis is a very rare event suffered in 1 per million vaccine doses administered<sup>1</sup>.

Mild side effects include a fever (a temperature of  $>38^{\circ}\text{C}$ ) or swelling at the site of the vaccination. More severe reactions can be due to animal protein if the vaccine is grown in animal cells, preservatives, stabilisers or part of the weakened and altered virus/bacteria used in some live vaccines.

Vaccines are therefore administered in clinical areas where the personnel have been trained to deal with anaphylaxis and where adrenaline, oxygen and other medications are readily available on site for immediate use.

### MMR vaccination

Children suffering from egg allergy react to the egg protein called ovalbumin. Although the MMR vaccine is grown in chick muscle cells (fibroblasts), it does not usually contain detectable levels of ovalbumin<sup>2</sup>. The MMR vaccine can be administered to children with severe egg allergy including those with previous anaphylaxis to egg in the community<sup>2</sup>. However, those who have had anaphylaxis to the MMR vaccine and/or had an intensive care admission after receiving the MMR vaccine should consult their doctor or Health Visitor prior to receiving it.

### Flu Vaccination

Influenza vaccines can contain low levels of the egg protein, ovalbumin. It is commonly administered in primary care settings and in schools.

The only contraindication to a child having this vaccination in the community is if they have suffered anaphylaxis to the influenza vaccine and/or had an intensive care admission after receiving the influenza vaccine and these should be referred to an allergy specialist and the flu vaccine should be administered in hospital<sup>2</sup>. However, studies have demonstrated that both the injectable and the nasal flu vaccines are safe in children with egg allergy and can be given in the community even if there is a previous history of asthma and/or anaphylaxis to egg<sup>2</sup>.

Children with asthma must not have had an acute exacerbation of their asthma or an admission up to 72 hours prior to the vaccine. A range of injectable Influenza vaccines are available, some of which contain very low levels of ovalbumin.

### Yellow Fever Vaccine

The yellow fever vaccine contains small amounts of egg protein and can cause anaphylaxis in some children who suffer from egg allergy<sup>2</sup>.

It should not be administered in the community and specialist advice from a paediatric allergy specialist should be sought if the vaccine is required<sup>2</sup>.

## COVID Vaccine

The current vaccine licensed in the United Kingdom (Pfizer BioNtech COVID-19 Vaccine) has been associated with anaphylaxis in a small number of individuals. It is unclear at present to the trigger for these reactions and a component of the vaccine, polyethylene glycol (PEG) has been queried.

Initially, people with a history of anaphylaxis to any food, vaccine or medication were not being offered the vaccine as a matter of caution but this guidance was revised on the 30 December 2020. Most people who have a food allergy can have the Pfizer vaccine. Only those who have an allergy to an ingredient in the vaccine or have suffered from anaphylaxis after receiving the first dose of the vaccine should not be given the Pfizer COVID vaccine.

Up to date advice will be available on the MHRA and BSACI websites and from the Green Book on immunisation<sup>3,4</sup>.

### References:

- 1) McNeil M M, Weintraub E S et al. Risk of anaphylaxis after vaccination in children and adults. *J Allergy Clin Immunol* 2016;137(3):868-878.
- 2) Anagnostou K, Turner PJ. Myths, facts and controversies in the diagnosis and management of anaphylaxis. *Arch Dis Child* 2019;104: 83-90.
- 3) [COVID-19: the green book, chapter 14a - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/publications/covid-19-the-green-book)
- 4) [Confirmation of guidance to vaccination centres on managing allergic reactions following COVID-19 vaccination with the Pfizer/BioNTech vaccine - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/publications/covid-19-vaccination-centres)