

Tdap Booster Vaccine Frequently Asked Questions for Health Professionals

NEW items in 2016 Immunisation Guidelines for Ireland are in RED

What is Tdap booster vaccine?

Tdap is a **low dose** tetanus (T), diphtheria (d) and acellular pertussis (p) booster vaccine which protects against tetanus, diphtheria and pertussis.

What are the childhood recommendations for pertussis vaccine?

- Primary immunisation course of 3 doses of DTP containing vaccines as a 6 in 1 vaccine (DTaP/IPV/Hib/Hep B) at 2, 4, and 6 months of age (given by GPs).
- A booster dose at 4-5 years as DTaP/IPV (given by HSE vaccination teams in school or by GPs in some areas).
- A second booster between 11 and 14 years as Tdap (given to 1st year students in school).

What are the changes to the recommendations for pertussis vaccine?

The changes to the recommendations for pertussis vaccination as per the Immunisation Guidelines for Ireland from the National Immunisation Advisory Committee (NIAC) are:

	2013	2016
Pregnant and postpartum women	<p>Pregnant women should be offered Tdap during 27 -36 weeks gestation in each pregnancy, to protect themselves and their infant.</p> <p>Tdap can be given at any stage in pregnancy although this may be less effective in providing passive protection.</p>	<p>Pregnant women should be offered Tdap as early as possible after 16 weeks and up to 36 weeks gestation in each pregnancy, to protect themselves and their infant.</p> <p>Tdap can be given at any time in pregnancy after 36 weeks gestation although it may be less effective in providing passive protection to the infant.</p>

How common is pertussis?

Pertussis is common in Ireland and in many developed countries. The number of cases reported varies year to year. In 2015, there were 117 cases of pertussis in Ireland. There was a large increase in cases in 2012, with 458 cases reported in Ireland. Most were in young children aged under 6 months who were more likely to be hospitalised and were too young to be fully vaccinated. Two deaths occurred in children aged less than three months. Similarly, Australia, the UK and the US experienced large outbreaks in 2012. The US alone reported 48,000 cases and 20 deaths.

Why has there been an increase in pertussis cases in recent years?

The increase in cases is thought to be due to the fact that the immunity produced from acellular pertussis vaccines is not as long-lasting and the immune response may not be as good. There is also some evidence of genetic changes in the pathogen towards vaccine resistant strains although whether this leads to increased disease susceptibility and outbreaks remains unclear.

Pertussis vaccination or previous infection does not confer lifelong immunity. Immunity wanes over time so people can be reinfected and spread the infection to others. Current pertussis vaccines provide good short term immunity but require boosting.

PREGNANCY

Why is pertussis vaccine recommended for pregnant women?

Pertussis vaccine is recommended for pregnant women to reduce the risk of infection in the mother and to reduce the morbidity and mortality in infants too young to be vaccinated. Circulating maternal antibodies in the newborn are likely to protect them in the early weeks after birth.

When should pregnant women be vaccinated?

Pregnant women should be offered Tdap vaccine between 16–36 weeks gestation in each pregnancy.

Tdap may be administered at any time in pregnancy after 36 weeks gestation although it may be less effective in providing passive protection to the infant.

Has the recommended timing of pertussis vaccination in pregnancy changed?

Yes. It was previously recommended that the vaccine should be given between 27 - 36 weeks.

In September 2016 the National Immunisation Advisory Committee (NIAC), updated its advice. NIAC now recommends that pregnant women should be given the vaccine between 16-36 weeks.

This change in advice is based on a study indicating that optimal neonatal pertussis antibody concentrations were elicited when the vaccine was given earlier in pregnancy. In addition, offering the vaccine from week 16 of pregnancy also gives pregnant women greater opportunity to take up the offer of vaccination.

Why is Tdap recommended in each pregnancy?

This is on the basis of data showing that maternal antibodies to pertussis wane and so will not provide protection in subsequent pregnancies. In addition, available data do not suggest any increased incidence of adverse events in pregnant women who received Tdap.

What about post partum women?

Tdap should be offered in the week after delivery to those women who were not vaccinated during their pregnancy although this may be less effective in providing passive protection.

Is Tdap recommended in other countries?

Tdap is recommended in many countries including the US, Canada, UK, Australia and New Zealand. The timing of the recommendation varies from country to country.

How effective is Tdap in pregnancy?

The introduction of the maternal pertussis immunisation programme in the UK in 2012 has been very effective in protecting infants with vaccine effectiveness was estimated at 91%

Is Tdap safe to give in pregnancy?

Yes. Data and studies on the safety of administering Tdap to pregnant women have been reviewed by expert committees in the US and UK with no evidence of an increased risk of adverse events.

HEALTH CARE WORKERS**Why is pertussis vaccine recommended for specific health care workers?**

Pertussis is difficult to recognise and diagnose in adults – up to 30% of adults with a cough lasting more than two weeks may have pertussis.

There has been documented pertussis transmission from HCWs to patients and HCWs are exposed to pertussis much more frequently than the number of diagnosed cases suggests.

Pertussis vaccine is recommended for HCWs to prevent nosocomial transmission and is in place for HCWs in USA since 2005 and also in Australia, the UK and New Zealand.

Infants, pregnant women and the immunocompromised are the most vulnerable to pertussis infection. Boosters every 10 years may be considered.

Which hospital health care workers should be a priority for pertussis vaccination?

The priority HCW groups are those working in

- Neonatal/paediatrics/ delivery units
- Antenatal and postnatal units
- Oncology and haematology units
- Renal dialysis units
- Intensive care units

How long does Tdap take to work?

It takes about two weeks for the maximum antibodies to be produced.

Are there any reasons why Tdap should not be given?

- Tdap should not be given if there is a history of anaphylaxis to a previous dose of the vaccine or one of its constituents.

Are there any reasons why Tdap should be deferred?

- Tetanus containing vaccination should be deferred for 10 years if there has been an Arthus-type reaction to a previous dose.
(Arthus reactions are rarely reported after vaccination and can occur after tetanus or diphtheria toxoid containing vaccines. They typically develop 2-8 hours after vaccination and involve swelling and erythema of most of the diameter of the upper arm from the shoulder to elbow. They are more common in adults and resolve without sequelae.)
- In the event of acute severe febrile illness defer until recovery.

Note: The following are no longer regarded either as contraindications or precautions. They have not been shown to cause permanent harm and are significantly less common after acellular than after whole-cell pertussis vaccines

- Temperature of more than 40.5°C within 48 hours of a previous dose of a pertussis-containing vaccine
- Hypotonic-hyporesponsive episode within 48 hours of a previous dose of a pertussis-containing vaccine
- Seizures within 72 hours of a previous dose of a pertussis containing vaccine
- Persistent, inconsolable crying lasting more than 3 hrs within 48 hours of a previous dose of a pertussis-containing vaccine
- Active or progressive neurological disease

What interval should there be between Tdap and a previous dose of a tetanus or diphtheria containing vaccine?

NIAC recommends that no interval is required between Tdap and any previous tetanus or diphtheria toxoid containing vaccine.

This is because accumulated data show no increased risk of severe local reactions or serious adverse events for adults who are given Tdap at short intervals after tetanus or diphtheria containing vaccines.

Can other vaccines be given at the same time as Tdap?

Yes. Tdap is an inactivated vaccine so this can be administered at the same time as any other live (e.g. MMR) or inactivated (e.g. seasonal influenza) vaccine. They should be administered in separate limbs or else in the same limb separated by at least 2.5cm (1 inch)

Does Tdap vaccine contain thiomersal?

No, Tdap does not contain thiomersal.

How safe is Tdap vaccine?

Tdap vaccine is safe and well tolerated.

Reported adverse events are:

Very common (≥ 1 in 10): Local injection site reactions (pain, redness and swelling).

Common (≥ 1 in 100 to < 1 in 10): Pyrexia, malaise, fatigue

How can Tdap vaccine be sourced?

Tdap vaccine is available from the HSE National Cold Chain Service for vaccination of

- students in 1st year of second level schools
- health care workers in contact with infants, pregnant women and the immunocompromised.
- pregnant women between 16 - 36 weeks gestation in each pregnancy.
- women at any stage of pregnancy or to unvaccinated women in the week after delivery although this may be less effective.
- close family contacts of infants born before 32 weeks gestation as they may not have received protection via maternal immunisation. This includes
 - siblings in the household who should have all age appropriate vaccinations including Tdap in 1st year of second level school
 - unvaccinated older adolescents and adults

Tdap should be given ideally two weeks before beginning close contact with the infant.

Pertussis containing vaccines and indications				
	Provided by	Vaccine	Product name	Availability
2, 4, 6 months	GP	6 in 1	Infanrix Hexa	From HSE National Cold Chain Service
4-5 years	HSE/GP	4 in 1	IPV Boostrix	
11-14 years	HSE	Tdap	Boostrix	
Health care workers (in contact with infants, pregnant women and the immunocompromised)	HSE/GP	Tdap	Boostrix	
Pregnant women (between 16-36 weeks gestation)	GP	Tdap	Boostrix	
Post partum women (1 st week after delivery)	GP	Tdap	Boostrix	
Close family contacts of preterm babies (born before 32 weeks gestation)	GP	Tdap	Boostrix	

Adults	GP	Tdap	Boostrix	Must be sourced privately
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6 in 1 Diphtheria, Tetanus, acellular Pertussis, Inactivated polio, Haemophilus influenzae type b, Hepatitis B vaccine

4 in 1 **Low dose** tetanus, diphtheria, acellular Pertussis, Inactivated polio vaccine

Tdap **Low dose** tetanus, diphtheria and acellular pertussis booster vaccine

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