11

The UK immunisation schedule

NOTIFIABLE

The routine immunisation schedule

The overall aim of the routine immunisation schedule is to provide protection against the following vaccine-preventable infections:

- diphtheria
- Haemophilus influenzae type b (Hib)
- hepatitis B
- human papillomavirus (certain serotypes)
- influenza
- measles
- meningococcal disease (certain serogroups)
- mumps
- pertussis (whooping cough)
- pneumococcal disease (certain serotypes)
- polio
- respiratory syncytial virus (RSV)
- rotavirus
- rubella
- shingles
- tetanus

The routine childhood immunisation schedule from 1 July 2025 is shown in Table 11.1 below. Individuals involved in vaccination should be familiar with the significant changes made to the schedule in 2025 which are detailed in the letter Changes to the routine childhood schedule.

The relevant chapters for each of the vaccine-preventable diseases listed above provide detailed information about the vaccines available and the immunisation programmes for these.

Table 11.1 Schedule for the UK's routine immunisation programme (excluding catch-up campaigns)

Age due	Diseases protected against		Vaccine given and trade name		Usual site[1]
Eight weeks old	Diphtheria, tetanus, pertussis (whooping cough), polio, *Haemophilus influenzae* type b (Hib) and hepatitis B		DTaP/IPV/Hib/HepB	Infanrix hexa or Vaxelis	Thigh
	Meningococcal group B (MenB)		MenB	Bexsero	Thigh
	Rotavirus gastroenteritis		Rotavirus[2]	Rotarix[2]	By mouth
Twelve weeks old	Diphtheria, tetanus, pertussis, polio, Hib and hepatitis B		DTaP/IPV/Hib/HepB	Infanrix hexa or Vaxelis	Thigh
	MenB		MenB	Bexsero	Thigh
	Rotavirus		Rotavirus[2]	Rotarix[2]	By mouth
Sixteen weeks old	Diphtheria, tetanus, pertussis, polio, Hib and hepatitis B		DTaP/IPV/Hib/HepB	Infanrix hexa or Vaxelis	Thigh
	Pneumococcal (13 serotypes) • if received pneumococcal at 12 weeks give Men B		PCV	Prevenar 13	Thigh
One year old (on or after the child's first birthday)	**Born before 1 July 2024** Pneumococcal Measles, mumps, rubella MenB Hib/MenC (if Hib/MenC stock exhausted give DTaP/Hib/IPV/HepB)	**Born on or after 1 July 2024** Pneumococcal Measles, mumps, rubella MenB	PCV MMR MenB Hib/MenC	Prevenar 13 MMRvaxPro or Priorix Bexsero Menitorix	Upper arm or thigh
Eighteen months old	**Born before 1 July 2024** No appointment	**Born on or after 1 July 2024** DTaP/IPV/Hib/HepB Measles, mumps, rubella	DTaP/IPV/Hib/HepB MMR	Infanrix hexa or Vaxelis MMRvaxPro or Priorix	Upper arm or thigh
Eligible paediatric age groups	Influenza (each year from September)		Live attenuated influenza vaccine LAIV	Fluenz	Both nostrils
Three years four months old or soon after	**Born before 1 July 2024** Diphtheria, tetanus, pertussis and polio Measles, mumps, rubella	**Born on or after 1 July 2024** Diphtheria, tetanus, pertussis and polio	dTaP/IPV MMR	REPEVAX MMRvaxPro or Priorix	Upper arm
Boys and girls aged twelve to thirteen years	Cancers and genital warts caused by specific human papillomavirus (HPV) types		HPV	Gardasil 9	Upper arm
Fourteen years old (school Year 9)	Tetanus, diphtheria and polio		Td/IPV (check MMR status)	REVAXIS	Upper arm
	Meningococcal groups A, C, W and Y		MenACWY	MenQuadfi	Upper arm
65 years old	Pneumococcal (23 serotypes)		Pneumococcal Polysaccharide Vaccine (PPV23)	Pneumovax 23	Upper arm
65 years of age and older	Influenza (each year from September)		Inactivated influenza vaccine	Multiple	Upper arm
65 from September 2023	Shingles		Shingles vaccine	Shingrix	Upper arm
70 to 79 years of age (plus eligible age groups and severely immunosuppressed)	Shingles		Shingles vaccine	Zostavax (or Shingrix if Zostavax contraindicated)	Upper arm
75 years of age	Respiratory syncytial virus (RSV)		RSV vaccine	Abrysvo	Upper arm

1 Where two or more injections are required at the same time, these should ideally be given in different limbs. Where this is not possible, injections in the same limb should be given at least 2.5cm apart. Intramuscular injection into deltoid muscle in upper arm or anterolateral aspect of the thigh.

2 Rotavirus vaccine should only be given after checking for SCID screening result.

The childhood immunisation schedule has been designed to provide early protection against infections that are most dangerous for the very young. This is particularly important for diseases such as whooping cough, rotavirus and those due to pneumococcal, Hib and meningococcal infections. Providing subsequent booster doses as scheduled should ensure continued protection. Further vaccinations are offered throughout life to provide protection against infections when eligible individuals reach an age where they can derive most benefit (such as because of an increased individual risk) or where the programme will provide optimal control of that disease for the whole population.

Recommendations for the age at which vaccines should be administered are informed by the age-specific risk for a disease, the risk of disease complications, the ability to respond to the vaccine and the impact on spread in the population. The schedule should therefore be followed as closely as possible.

Some individuals may be eligible for additional vaccines due to an underlying medical condition or circumstances that put them at increased risk of catching a vaccine-preventable disease or of complications from that disease. These individuals should be vaccinated in accordance with the recommendations in Chapter 7 and the disease specific chapters.

Seasonal influenza

Those eligible for influenza vaccine (on the basis of age or clinical risk) should be vaccinated each winter, usually from October (from September for children and pregnant women). It is preferable to vaccinate individuals at this point, prior to the time when the flu virus is likely to circulate (which typically peaks in December or January), as this will provide optimal protection during the highest risk period. However vaccination may still be of some benefit if given to an individual later in the flu vaccination season. The annual letters on the influenza programme should be consulted for age eligibility:

England: www.gov.uk/government/collections/annual-flu-programme

Northern Ireland: https://www.health-ni.gov.uk/topics/hssmd-letters-and-urgent-communications

Scotland: https://www.publications.scot.nhs.uk/

Wales: https://www.gov.wales/health-circulars-2024-2027#content

Schedule flexibility

The schedule recommended by the Joint Committee on Vaccination and Immunisation (JCVI) incorporates the minimum intervals between subsequent doses of the same vaccine. As immunological memory from priming dose(s) are likely to be maintained in healthy individuals, increasing that interval will usually lead to a more pronounced response to the later dose. **Therefore, where any course of immunisation is interrupted, there is normally no need to start the course again – it should simply be resumed and completed as soon as possible.** Where vaccination was commenced some time previously however, the product received, or the eligibility may have changed, and the relevant chapter should therefore be consulted.

Immunisations should not be given before the scheduled age unless there is a clear clinical indication for this. The first set of primary immunisations can be given from six weeks of age if required in certain circumstances such as travel to an endemic country. Routinely administering the first set of primary immunisations before 6 weeks of age is not recommended, as it may result in a sub-optimal response to the vaccine which could undermine good control.

MMR vaccine can be given from six months of age, for example during a local outbreak or if travelling to a high incidence country. Any dose of MMR given below the age of one year should be discounted as residual maternal antibodies may reduce the response to the vaccine. Two further doses of MMR will therefore be required at the appropriate ages.

Delaying primary infant immunisations beyond eight weeks risks leaving babies unprotected against infections that can be very severe in the very young, such as whooping cough. The six to eight week baby check is not required as part of the assessment for immunisation, and so the eight week primary immunisations should never be delayed because of any delay in carrying out this examination. Every effort should be made to ensure that all children and adults are immunised, even if they are older than the scheduled age; no opportunity to immunise them should be missed. The type of vaccine and number of doses recommended depends on the age of the individual as some vaccines are not indicated after a certain age.

In most instances, the upper age limit is set where the ability to benefit from vaccination is reduced because of lower risk (e.g. whooping cough), or lower effectiveness (e.g. for shingles). The exception is rotavirus vaccine, where vaccination at an older age is more likely to be associated with an adverse event (intussusception) (see Chapter 27b: Rotavirus for more information).

Recording of immunisation

Following immunisation, all the patient's clinical records including the GP held record and, if a child, the record on the Child Health Information System (CHIS) and the Personal Child Health Record (Red Book) should be updated with all the relevant details in a timely manner (see Chapter 4).

When babies are immunised in special care units, or children and adolescents are immunised opportunistically in accident and emergency units or inpatient facilities, it is important that a record of the immunisation is entered onto the relevant CHIS and sent to the patient's GP for entry onto the practice-held patient record. In England, vaccinations provided in a maternity setting should be recorded on the NHS Record a Vaccination Service (RAVs) system in addition to the local maternity service system. Details of vaccines given in other areas, such as schools or in pharmacies, should also be sent to the patient's GP.

Where possible, records of immunisation should be requested from children and adults arriving from overseas and entered onto the GP held record and other clinical records as appropriate. This will enable vaccinators to establish which vaccines are still required and provide reassurance during local outbreaks.

A World Health Organization (WHO) website containing information on current schedules used in several other countries can be accessed to facilitate accurate coding at the following: https://immunizationdata.who.int/global?topic=Vaccination- schedule&location=

Childhood immunisation programme

When children attend for any vaccination, it is important to also check that they are up-to-date with any vaccines that they should have received previously. The table below gives an example checklist at each key stage; doses of those vaccines that have not been received but are still indicated at that age should be caught up. Catch-up doses should be administered as soon as possible but leaving the appropriate intervals as advised in the relevant chapters.

Where a child is identified as being behind with their vaccinations, healthcare professionals should refer to the vaccination of individuals with uncertain or incomplete immunisation guidance which gives specific advice on what to give and when, depending on the child's age and immunisation history.

Table 11.2 Routine immunisation schedule vaccination history at key ages

Key age	Vaccines child should have had or catch-up with
At the age of 12 months	• Three doses of diphtheria, tetanus, polio, pertussis, Hib and hepatitis B containing vaccine. • A single dose of PCV vaccine. • Two doses of MenB vaccine.
At the age of 24 months	Children born before 1 July 2024: • Three doses of diphtheria, tetanus, polio, pertussis, Hib and hepatitis B containing vaccines. • A dose of a Hib-containing vaccine and a PCV13 vaccine after the age of one year. • Either 2 doses of MenB under the age of one and one dose after the age of one year; or 2 doses of MenB after the age of one year. • A single dose of MMR vaccine after the age of one year. Children born on or after 1 July 2024: • Four doses of diphtheria, tetanus, polio, pertussis, Hib and hepatitis B containing vaccines with one of these doses after the age of one year. • A dose of PCV13 vaccine after the age of one year. • Either 2 doses of MenB under the age of one and one dose after the age of one year; or 2 doses of MenB after the age of one year. • Two doses of MMR vaccine after the age of one year (with at least one dose having been given over 15 months of age).
At school entry	• At least four doses of diphtheria, tetanus, pertussis and polio containing vaccine with one dose of Hib-containing vaccine given after the age of one year. • At least three doses of hepatitis B-containing vaccine (children born on or after 1 July 2024 will have received more) • Two doses of MMR vaccine after the age of one year (with at least one dose having been given over 15 months of age).
At transfer to secondary school	• At least four doses of diphtheria, tetanus and polio containing vaccine (children born on or after 1 July 2024 will have had five) • Two doses of MMR vaccine after the age of one year (with at least one dose having been given over 15 months of age). • A single dose of Hib-containing vaccine after the age of one year.
Before leaving school	• At least five doses of diphtheria, tetanus, polio containing vaccine (children born on or after 1 July 2024 will have had six) • A single dose of MenACWY vaccine after the age of 10 years. • Two doses of MMR vaccine. • A single dose of HPV vaccine[1]

1 All females remain eligible for HPV vaccine up to their twenty-fifth birthday. All males born on or after 1 September 2006 are eligible up to their twenty-fifth birthday.

Adult immunisation programme

Five doses of diphtheria, tetanus and polio vaccines at the appropriate interval should ensure long-term protection through adulthood (although additional doses may be indicated for travel or following potential exposure to infection). Individuals who have not completed the five doses should have their remaining doses at the appropriate intervals. Where there is an unclear history of vaccination, adults should be assumed to be unimmunised. A full course of diphtheria, tetanus and polio vaccine should be offered to individuals of any age in line with advice contained in the relevant chapters. It is never too late in life to start a course of these vaccinations.

Measles, mumps and rubella vaccine should be offered to all young adults who have not received two doses as outlined in Chapter 21, Chapter 23 and Chapter 28. In particular, vaccine status should be checked for all women of child-bearing age who should be offered MMR to prevent rubella in pregnancy. In addition, up to the age of 25 years, MenACWY vaccine should be offered to individuals who have never received a MenC- containing vaccine (see Chapter 22) and HPV should be offered to eligible unvaccinated individuals (see Chapter 18a for eligibility).

Older adults (65 years and older) should routinely be offered a single dose of pneumococcal polysaccharide vaccine if they have not previously received it. Annual influenza vaccination should be offered from 65 years of age. Adults aged 65 or 70 years (as per the phased roll-out programme) become eligible for shingles vaccine and remain eligible until their 80th birthday. More information on shingles vaccine eligibility is available at: https://www.gov.uk/government/collections/shingles-vaccination-programme. Adults should be offered the respiratory syncytial virus (RSV) vaccine when or shortly after they turn 75 years old as outlined in Chapter 27a.

As for children, it is good practice to check the immunisation status of any adults who attend for other reasons. The table below gives an example checklist at certain ages; doses of those vaccines that have not been received but are still indicated at that age should be caught up. Catch-up doses should be administered as soon as possible but leaving the appropriate intervals as advised in the relevant chapters.

Table 11.3 Routine immunisation schedule vaccination history at key life stages

Key stage	Vaccines should have had or catch up with
By 25th birthday	Five doses of diphtheria, tetanus, polio containing vaccine. A single dose of MenACWY vaccine after the age of 10 years. Two doses of MMR vaccine. A single dose of HPV vaccine[1]
By 50th birthday	Five doses of diphtheria, tetanus, polio containing vaccine. Two doses of MMR vaccine.
By 70th birthday	Five doses of diphtheria, tetanus, polio containing vaccine. Two doses of MMR vaccine if requested or if they are considered to be at high risk of exposure. One dose of pneumococcal polysaccharide vaccine (PPV23) Offered flu vaccine every year between October and December
By 80th birthday	Five doses of diphtheria, tetanus, polio containing vaccine. Two doses of MMR vaccine if requested or if they are considered to be at high risk of exposure. One dose of RSV vaccine[2] One dose of pneumococcal polysaccharide vaccine (PPV23) Two doses of shingles vaccine[3]

1 All females remain eligible for HPV vaccine up to their twenty-fifth birthday. All males born on or after 1 September 2006 are eligible up to their twenty-fifth birthday.

2 One-off catch-up campaigns for those already aged 75 to 79 on 01/09/2024.

3 See Chapter 28a for age-based eligibility criteria.

Selective immunisation programmes

There are a number of selective immunisation programmes for children and adults at particular risk of serious complications from certain infections, such as hepatitis B, hepatitis A, influenza, COVID, Hib, meningococcal, pneumococcal infection and shingles. Vaccines against other infections, including TB (BCG), HPV, hepatitis B, mpox and gonorrhoea, are also recommended for individuals at higher risk of exposure to infection due to lifestyle factors, close contact or recent outbreaks in their community.

For children born to mothers with hepatitis B infection, additional monovalent doses +/- immunoglobulin will be required to prevent mother to child transmission at or around the time of birth. Hepatitis B immunisation of the infant should start as soon as possible after birth, no later than 24 hours, following the selective neonatal post exposure schedule (as per Chapter 18).

Individuals at risk of exposure through their work should be advised about any required vaccinations by their employer or their occupational health service. For more information, please see Chapter 12 and the disease specific chapters.

Vaccination during and after pregnancy

In 2010, routine influenza immunisation of individuals was extended to include all pregnant women. This was based on evidence of the increased risk from influenza to the mother and to infants in the first few months of life. Vaccination protects the woman herself and provides passive immunity to the infant following birth for their first few months of life. Preventing infection in the mother will also reduce the risk of her transmitting influenza to her newborn baby. Inactivated influenza vaccine should therefore be offered to pregnant women at any stage of pregnancy (first, second or third trimesters), ideally before influenza viruses start to circulate. Influenza vaccination of pregnant women is usually carried out between September and January, but clinical judgement should be used to assess whether a pregnant woman should be vaccinated after this period. The current level and severity of influenza activity, the presence of other risk factors and the availability of inactivated influenza vaccine may form part of the consideration for late vaccination.

A programme for the vaccination of pregnant women against pertussis was introduced in October 2012. The purpose of the programme is to boost antibodies in these women so that high levels of antibody are transferred from mother to baby. This should protect the infant against pertussis infection until they can be vaccinated from eight weeks of age.

Pregnant women should be offered the combined tetanus, diphtheria and acellular pertussis Tdap (or dTaP/IPV if Tdap is unavailable) vaccine from week 16 of each pregnancy (for operational reasons, ideally vaccination should be offered at, or after the foetal anomaly scan at around 20 weeks). This programme is described in more detail in Chapter 24.

In addition to older adults, a programme for respiratory syncytial virus (RSV) vaccination of pregnant women for infant protection was introduced in September 2024. While RSV can occur at any age, babies under one year of age are at the greatest risk of hospitalisation with more severe RSV. The aim of the RSV vaccination of pregnant women programme is to reduce the incidence and severity of RSV disease in infants through transplacental antibody transfer. Vaccination should be offered to all pregnant women from week 28 gestation, in every pregnancy. Vaccination should ideally be offered in week 28 or soon after to maximise the likelihood that a baby will be optimally protected from birth. More information regarding this programme is available in Chapter 27a.

From 2016, the routine antenatal testing of women for rubella susceptibility ceased. Pregnant women should have their vaccine status checked during or after pregnancy, for example at the post-natal check, and be offered any outstanding doses of MMR soon after delivery. MMR vaccine should not be offered in pregnancy.

Table 11.4 Routine vaccinations in pregnancy

Vaccine	Eligibility
Influenza	At any stage of each pregnancy during flu vaccination seasons (from September onwards)
Pertussis	From week 16 onwards of every pregnancy (for operational reasons, ideally vaccination should be offered at, or after the fetal anomaly scan at around 20 weeks)
RSV	In week 28 of every pregnancy or soon after

Further information on vaccination during pregnancy and whilst breastfeeding is available in Chapter 6.

Vaccination of individuals with unknown or incomplete immunisation status

For a variety of reasons, some individuals may present not having received some or all their immunisations or may have an unknown immunisation history. Where an individual born in the UK presents with an incomplete immunisation history, every effort should be made to clarify what immunisations they may have had. Anyone who has not completed the routine immunisation programme as appropriate for their age should have the outstanding doses as described in the relevant chapters.

If children and adults coming to the UK do not have a documented or reliable verbal history of immunisation, they should be assumed to be unimmunised, and a full course of required immunisations should be planned. This includes pregnant individuals with an unknown immunisation history where, assuming they are unimmunised, a full course of required immunisations should be planned (noting that live vaccines such as MMR should not be given in pregnancy but should instead be given soon after delivery).

Individuals coming from areas of conflict or from population groups who may have been marginalised in their country of origin (such as refugees, gypsy or other nomadic travellers) may not have had good access to immunisation services. In particular, older children and adults may also have been raised during periods before immunisation services were well developed or when vaccine quality was sub-optimal. Where there is no reliable history of previous immunisation, it should be assumed that any undocumented doses are missing and the UK catch-up recommendations for that age should be followed.

An algorithm for vaccinating individuals with uncertain or incomplete immunisation status is available at https://www.gov.uk/government/publications/vaccination-of-individuals-with-uncertain-or-incomplete-immunisation-status.

Individuals coming to the UK who have a history of completing immunisation in their country of origin may not have been offered protection against all the antigens currently offered in the UK. Most countries have offered protection against diphtheria, tetanus, polio and whooping cough for many years, but do not currently include MenC or MenB in the schedule and may have introduced PCV and Hib vaccine relatively recently. Some countries worldwide only offer single measles vaccines, rather than MMR, or have only recently started to offer a rubella containing vaccine. Measles vaccine is also given below the age of one

year in many lower income countries. Doses of measles-containing vaccine given below the age of one should be discounted and two further doses of MMR vaccine given to ensure adequate protection against both measles and rubella.

Current country-specific schedules are available on the WHO website (https://immunizationdata.who.int/global?topic=Vaccination-schedule&location=).

The UK immunisation schedule includes five or six doses of inactivated polio vaccine (IPV) which are given by injection and protect against three different serotypes (1, 2 and 3). Children coming to the UK may have received oral polio vaccine (OPV) which is given in many countries. The trivalent OPV was withdrawn in April 2016 and replaced with the bivalent oral poliovirus vaccine, which contains only attenuated virus of types 1 and 3. If a child has received any OPV in another country since 2016 as part of their primary course or pre- school booster, these doses should be discounted. Many countries have a mixed OPV and IPV schedule and so if sufficient IPV doses have been received for their age, then no additional IPV doses are needed. It is also important when reviewing a vaccination history, to try and determine which type of diphtheria-containing vaccines an individual has received. Diphtheria vaccines are produced in two strengths according to the diphtheria toxoid content. Vaccines containing the higher dose of diphtheria toxoid (D) are used to achieve satisfactory primary immunisation of children under ten years of age (e.g. DTaP/IPV/Hib/HepB). Low-dose preparations (d) are recommended for booster doses (e.g. dTaP/IPV and Td/IPV) as per the UK routine immunisation schedule or for primary immunisations in individuals aged ten years and over. It is important to ensure that primary immunisation has been completed, and a sufficient interval has elapsed before administering any booster doses.

Premature infants

It is important that premature infants have their immunisations at the appropriate chronological age (counted from their date of birth), in accordance with the national routine immunisation schedule. As the benefit of vaccination is high in this group of infants, vaccination should not be withheld or delayed.

As the occurrence of apnoea following vaccination is especially increased in infants who were born very prematurely, specific guidance on the immunisation of premature infants in Chapter 7 and the disease specific chapters should be followed.

Intervals between vaccines

Doses of different inactivated vaccines can usually be administered at any time before, after, or at the same time as each other, unless stated otherwise. Doses of inactivated vaccines can also be given at any interval before, after, or at the same time as a live vaccine and vice versa.

A minimum four-week interval is normally recommended between successive doses of the same vaccine – for example between each of the three doses of DTaP-containing vaccine in the primary schedule. A better response is made to some vaccines when an eight-week interval is observed between doses. Although shorter intervals may be advised to achieve more rapid protection, e.g. for travel or during an outbreak, this may lead to a lower immune response, particularly in infants, and may therefore provide less durable protection.

If one of the infant primary immunisation DTaP-containing vaccine doses is inadvertently or deliberately given up to a week early (such as for travel) however, the impact on the final response is minimal. If more than one dose in the three-dose schedule is given early, or one of the doses is given at less than a three week interval, then that dose should be repeated at least four weeks after the final dose. The preferred minimum interval between MenB infant doses is four weeks. Where an infant dose of MenB is inadvertently given at an interval of less than three weeks, an additional dose should be administered four weeks after the second dose to ensure adequate protection whilst still at a vulnerable age.

For other multiple dose schedules with inactivated vaccines e.g. hepatitis B, giving subsequent doses at a slightly shorter than the recommended interval is unlikely to be highly detrimental to the overall immune response. However, early vaccination should be avoided unless necessary to ensure rapid protection or to improve compliance, and additional doses may be recommended to ensure longer term protection.

Advice on intervals between different live vaccines is based on existing specific evidence of interference between vaccines. The current advice is detailed in Table 11.4. Recommended intervals between subsequent doses of the same live vaccine will depend upon the specific incubation period of the vaccine virus, and other factors, such as decline in maternally derived antibody. Please refer to the relevant chapters.

Table 11.4 Recommended time intervals when giving more than one live attenuated vaccine

Vaccine combinations	Recommendations
Yellow Fever and MMR	A four week minimum interval period should be observed between the administration of these two vaccines. Yellow Fever and MMR should not be administered on the same day.[1]
Varicella (and zoster) vaccine and MMR	If these vaccines are not administered on the same day, then a four week minimum interval should be observed between vaccines.[2]
Tuberculin skin testing (Mantoux) and MMR	MMR can be administered on the same day as tuberculin skin or IGRA testing (CDC, 2024). MMR can also be administered at any interval before or after an IGRA test. However, if a tuberculin skin test has already been initiated, then MMR should be delayed until the tuberculin skin test has been read unless protection against measles is required urgently. If a child has had a recent MMR, and requires a tuberculin skin test, then a four week interval should be observed.[3]
All currently used live vaccines (BCG, rotavirus, live attenuated influenza vaccine (LAIV), oral typhoid vaccine, yellow fever, varicella, zoster and MMR)	Apart from those combinations listed above, these vaccines can be administered at any time before or after each other. This includes tuberculin (Mantoux) skin testing.[4]

1 Co-administration of these two vaccines can lead to sub-optimal antibody responses to yellow fever, mumps and rubella antigens (Nascimento et. al, 2011). Where protection is required rapidly then the vaccines should be given at any interval; an additional dose of MMR should be considered.

2 A study in the US (Mullooley & Black, 2001) showed a significant increase in breakthrough infections when varicella vaccine was administered within 30 days of MMR vaccine; suggesting that MMR vaccine caused an attenuation of the response to varicella vaccine. When the vaccines are given on the same day, however the responses have been shown to be adequate (Plotkin, 2022.) As the zoster (shingles) vaccine contains the same virus as varicella (chicken pox) vaccine, this recommendation has been extrapolated to MMR and zoster. Where protection from either vaccine is required rapidly then the vaccines can be given at any interval and an additional dose of the vaccine given second should be considered.

3 Administering tuberculin (Mantoux) within 28 days of MMR vaccine may result in decreased reactivity of the tuberculin and the false negative reporting of results. If tuberculin testing has already been initiated, MMR should be delayed until the skin test has been read. If protection against measles is urgently required, then the benefit of protection from the vaccine outweighs the potential interference with the tuberculin test. In this circumstance, the individual interpreting the negative tuberculin test should be aware of the recent MMR vaccination when considering how to manage that individual.

4 Whilst there is no evidence of decreased reactivity or interference from other live vaccines, those interpreting the results of the tuberculin skin test should be aware of any recently administered live injectable vaccines.

References

Centres for Disease Control (CDC) (2024) Vaccines and Immunizations. Contraindications and Precautions. www.cdc.gov/vaccines/hcp/imz-best-practices/contraindications-precautions.html

Mullooly, J and Black, S (2001). Simultaneous administration of varicella vaccine and other recommended childhood vaccines – United States, 1995-1999. MMWR Weekly. Nov 30, 2001 / 50(47); 1058 -1061. http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5047a4.htm

Nascimento Silva JR, Camacho LA, Freire Mde S et al (2011). Mutual interference on the immune response to yellow fever vaccine and a combined vaccine against measles, mumps and rubella. Vaccine 29(37): 6327- 6334

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