



UK Health  
Security  
Agency

# Measles Update – Educational settings

## UKHSA South East

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# Includes:

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- Symptoms and incubation period
- MMR vaccination
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# Measles - key facts



- Prior to the introduction of vaccination, it was a common childhood infection
- **Highly infectious:**
  - one of the most contagious agents known
  - if one person has it, 9 out of 10 unprotected contacts will become infected
- A person with **measles is infectious from 4 days before the onset of rash to 4 whole days after the onset (rash onset is day 0)**
- **The virus is spread through the air by an infected person breathing, coughing and sneezing and/or via direct contact with respiratory secretions**
- It remains a leading cause of death and disability among young children globally
  - 20-40% of cases in the UK are hospitalised (rate varies by age)
- Vaccination has had a major impact on measles deaths:
  - between 2000 and 2020, deaths from measles globally decreased by 94%
- **Two doses of MMR vaccine offers the best protection against mumps, measles and rubella.**

# Incubation Period, Symptoms and Complications

## Incubation period:

It takes on average 10 to 12 days (range 7-21 days) for symptoms to develop after being in contact with a case of measles

## Symptoms:

- Fever
- Cough
- Cold-like symptoms
- Conjunctivitis – sore, red watery eyes
- ‘Cranky’ child
- Rash – usually appears slightly later, generally starts behind ears, spreads to face then spreads to the trunk. The rash is red, blotchy, maculopapular (not itchy) and lasts around 3 to 7 days. May be more difficult to spot on brown skin: <https://service-manual.nhs.uk/content/inclusive-content/skin-symptoms>
- Koplik spots – small red spots with white/bluish centres inside the mouth. These sometimes appear at the time of the rash, but can be confused with other lesions and so are an unreliable marker of measles

**Complications:** (up to 30% of cases, highest in infants and adults) Include otitis media (middle ear infection), bronchitis, pneumonia/pneumonitis, encephalitis (swelling of the brain), prolonged immunosuppression – which predisposes people to other infections.



- [Image 1] **Conjunctivitis** from [www.nhs.uk/conditions/conjunctivitis](http://www.nhs.uk/conditions/conjunctivitis).  
[Image 2] **Koplik spots** from [www.nhs.uk/conditions/measles](http://www.nhs.uk/conditions/measles).  
[Image 3] **Measles rash** from [www.nhs.uk/conditions/measles](http://www.nhs.uk/conditions/measles).  
[Image 4] **Measles rash on brown skin** from [www.afro.who.int/news/who-supports-government-mitigate-measles-rubella-outbreaks-nationwide](http://www.afro.who.int/news/who-supports-government-mitigate-measles-rubella-outbreaks-nationwide)  
[Image 5] **Measles rash on brown skin**.  
[Image 6] **Measles rash on back**

Source: [Think Measles! Vaccination rates have fallen, and cases of measles are increasing in England \(publishing.service.gov.uk\)](https://publishing.service.gov.uk)

# Measles Mumps Rubella (MMR) vaccine

- Measles containing vaccines are highly effective and safe, and have been around for 50+ years
- The measles vaccine was introduced into the UK schedule in 1968
- The MMR vaccine, which protects against measles, mumps and rubella, was introduced into the UK schedule in 1988
- MMR is a live vaccine (so not given in pregnancy or to people with severe immunosuppression)
- UK schedule:
  - Dose 1 at 1 year of age
  - Dose 2 at 3 years and 4 months
- One dose is 95% effective, and two doses are 99% effective at providing lifelong protection against measles infection
- **It is never too late to be vaccinated.** If you or your child have not had two measles containing vaccines, contact your GP now to get vaccinated.
- In the UK we have two MMR vaccines. Both of the vaccines work very well, one contains porcine gelatine and the other doesn't. If you want to have the porcine gelatine free vaccine (for you or your child), talk to your practice nurse or GP and mention this when you book your appointment.
- <https://www.gov.uk/government/publications/think-measles-patient-leaflet-for-young-people/measles-mumps-and-rubella-mmr-guidance-for-young-people>

# Why are we seeing an increase in cases in the UK and other parts of Europe?

- Over the past ten years there has been a decline in MMR vaccination uptake. 84.5% of 5 years olds have had 2 doses of MMR vaccine in England which is lower than the 95% target set by the WHO (World Health Organisation). It is as low as 60% in some areas of London<sup>1</sup>.
- This means that we have sub optimal coverage allowing measles to spread in an unvaccinated population.
- Low vaccine uptake may be due to:
  - Complacency about the risk of disease
  - Finding time to vaccinate
  - The impact of COVID-19 on services
  - Misinformation about vaccination
    - Gelatine - there is a [non-porcine MMR vaccine option](#)
    - Natural immunity - building immunity 'naturally' risks children being seriously unwell
    - Autism – there is no link between the MMR vaccine and autism. (National Autism Society state '[There is no link between autism and vaccines.](#)')

1. UKHSA [Cover of vaccination evaluated rapidly \(COVER\) programme 2023 to 2024](#): quarterly data: July to September 2023

# Who is considered a contact?

- You are considered a contact if you have the following exposure to an infectious case:
  - been in a small room for 15 minutes or more (less time for someone who is immunosuppressed)
  - are in the same household
  - had face to face contact for any length of time
- All contacts should receive warn and inform information, but those who are not immunocompromised and are fully vaccinated are very unlikely to get measles.
- Anyone who has not had two MMRs is encouraged to get vaccinated.
- There are a few vulnerable groups who are not be able to receive an MMR vaccination. Where these are identified as contacts of confirmed or likely measles they may be eligible for immunoglobulin, (antibodies extracted from human plasma), which if given shortly after exposure (within 6 days) can give temporary immunity to measles (passive immunity).
- These vulnerable contacts are prioritised as they are more likely to have severe disease and there are time limited actions.

# Vulnerable groups

Anyone who has not received two measles containing vaccines (eg two MMRs) and has not had measles in the past is susceptible to measles. However there **three key vulnerable groups**, who are more likely to experience severe disease:

**1. Immunosuppressed individuals** – people with a weakened immune systems\*

**2. Unvaccinated pregnant women**

**3. Infants** (children aged under 12 months) – too young to have received an MMR vaccination

**Unvaccinated healthcare workers** are also a priority to identify as they may work with immunosuppressed individuals and infants.

\* contact your GP or consultant if you are unsure if you are in this immunosuppressed group. Further information Annex 2 [UKHSA measles guidance](#)



# Actions for educational settings - before you have a case

- **Encourage MMR vaccination** amongst staff and students/children.
- **Check** whether you have **any vulnerable staff and students/children** as further actions may be needed for these in the event of a case in the setting.
- **Promote handwashing and good respiratory hygiene.**
  - [Catch it, Bin it, Kill it Poster](#)
  - [e-Bug](#) has a range of educational resources for ages 3-16 to learn about microbes, infection prevention and control, antibiotics and vaccination.

# Actions for educational settings if you have a suspected or confirmed case (part 1)

## Clinical assessment and alert

- If the case has not had a diagnosis from a clinician encourage them to **seek medical assessment** via 111 or a GP. Before attending a healthcare setting e.g. GP, urgent care centre, hospital A and E department, they should call ahead so infection control actions can be implemented e.g. ensuring they are isolated in a separate room.
- As measles is a notifiable disease, **clinical professionals must notify suspected cases** to local health protection teams (HPTs), (part of the UK Health Security Agency), who will risk assess, identify contacts.
- Your local HPT will call you if there is a confirmed case, or a suspected case that is thought to be likely measles case and attended the setting whilst infectious.

# Actions for educational settings if you have a suspected or confirmed case (part 2)

## Exclusion advice

- **Confirmed and suspected cases: exclude from nursery or school** for the infectious period (from 4 days before rash onset and for a further 4 full days from the onset of rash). They can return four days after the onset of rash, as long as they are well and do not have temperature.
- **Susceptible unvaccinated siblings or their unvaccinated parents (if they work in the setting): may be excluded from nursery or school for the incubation period (21 days since onset of rash in the case)** - as they are at high risk of developing measles. HPT will advise on this.
- Well, **unvaccinated non-household contacts will not routinely be advised to be excluded from the educational setting**, but there may be exceptions if there is an extremely vulnerable group, for example, if working with a baby group or in a SEND school with students with immunosuppression. HPT will advise on this.

# Actions for educational settings if you have a suspected or confirmed case (part 3)

## Warn and inform

- Send information to parents and staff – HPT will provide a letter and advise who this needs to be sent to – usually the whole setting. This advises on signs and symptoms to look out for and recommends MMR for unvaccinated/partially vaccinated children, students and staff.

## Assessment of vulnerable students and staff

- Inform HPT of any vulnerable students or staff who may require timely public health actions (as explained on slide 7 and 8).

## Vaccination clinics

- Occasionally where there are many unvaccinated students/children who cannot easily get vaccinated in primary care, the HPT and the NHS may request that a vaccination clinic is set up in the educational setting to prevent tertiary spread. To avoid this, the NHS is prioritising catching up unvaccinated primary school students now.

## Outbreak in an educational setting

- If there is an outbreak in an educational setting (two or more linked cases) the HPT may hold an incident management team meeting and advise if there are further actions.

# Resources for Educational settings

1. MMR for all leaflet – routine programme: <https://www.gov.uk/government/publications/mmr-for-all-general-leaflet>
2. Measles: Protect yourself, protect others' leaflet: [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/689712/Measles\\_adults\\_DL\\_Leaflet\\_03\\_.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/689712/Measles_adults_DL_Leaflet_03_.pdf)
3. UKHSA Blog: What do I need to know about the MMR vaccine: <https://ukhsa.blog.gov.uk/2022/02/01/what-do-i-need-to-know-about-the-mmr-vaccine/>
4. Health Protection in children and young people settings including education: <https://www.gov.uk/government/publications/health-protection-in-schools-and-other-childcare-facilities>
5. [Briefing pack for secondary schools – adolescent programmes:](https://www.gov.uk/government/publications/adolescent-vaccination-programme-in-secondary-schools/adolescent-vaccination-programme-briefing-for-secondary-schools) <https://www.gov.uk/government/publications/adolescent-vaccination-programme-in-secondary-schools/adolescent-vaccination-programme-briefing-for-secondary-schools>
6. Back to or starting nursery, primary or secondary school reminder postcards and posters for parents <https://www.gov.uk/government/publications/immunisations-resources-for-schools>
7. Measles outbreaks poster and leaflets: <https://www.gov.uk/government/publications/measles-outbreak>
8. Complete routine schedule for UK available translated into 23 community languages <https://www.gov.uk/government/publications/the-complete-routine-immunisation-schedule>
9. [What to do if you think your child has measles and when to keep them off school - The Education Hub \(blog.gov.uk\)](https://www.blog.gov.uk/2022/02/01/what-to-do-if-you-think-your-child-has-measles-and-when-to-keep-them-off-school/)