



UK Health
Security
Agency

Common Infectious Diseases in Children

Probably the most dangerous spreader of infection...



Definitions

- **Incubation Period:**
 - The time from the moment of exposure to an infectious agent until signs and symptoms of the disease appear.
- **Infectious Period:**
 - The time during which an infectious agent may be transferred directly or indirectly from an infected person to another person
- **Exclusion Period:**
 - The time which the case should remain away from school, work or contact with vulnerable people because the case is infectious – the case is within their infectious period



Common childhood infections

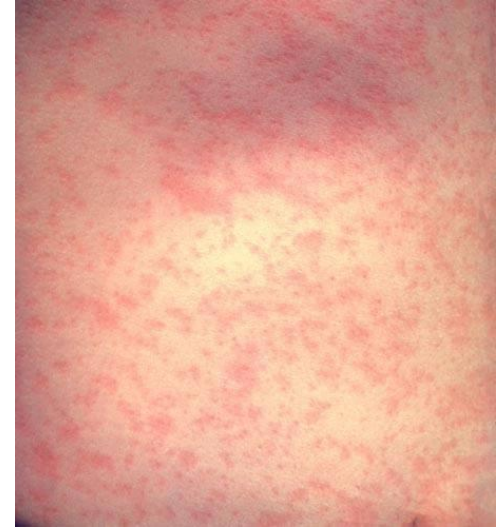
- Chickenpox
- Threadworm
- Ringworm
- Hand, foot and mouth disease
- Conjunctivitis
- Impetigo
- Scarlet fever / Group A Strep (GAS)
- Viral gastroenteritis – norovirus, rotavirus
- Influenza

Other infections you may see

- Meningitis
- Measles – increased concern at the moment
- Rubella (German measles)
- Mumps
- Scabies
- Whooping Cough (Pertussis)
- Fifth disease (slapped cheek, parvovirus)

Measles – vaccine preventable

- Recently seen an increase of cases across the UK. Was rare since introduction of MMR vaccine. Vaccination given at 12 months old and 3 years 4 months.
- Fever, conjunctivitis, cough then red, blotchy rash, may be spots in mouth (Koplik spots)
- Spread by coughing, sneezing etc
- **infectious** from 4 days before the onset of rash to 4 days afterwards
- Exclude until 4 days after onset of rash
- HIGHLY infectious – 15 minutes in same room
- Avoid contact with unimmunised, newborn or vulnerable people



ITV REPORT 29 August 2019 at 5:01am

UK loses measles elimination status



Yorkshire Live + Follow

'S' never too late' vaccination warning in West Yorkshire as measles cases soar

by Sebastian McCormick • 20h



MEASLES
Don't let your child catch it
- get them vaccinated with the MMR vaccine

The number of young people catching measles has risen. It's never too late to be vaccinated. You need two doses of MMR one month apart to be fully protected against measles, mumps and rubella.

It's time to make measles a disease of the past.

If you have symptoms of measles, stay at home and phone your GP or NHS 111 for advice. STAY AWAY from GP surgeries and A&E departments - you could spread the illness to others.

Measles symptoms include: high fever; sore, red, watery eyes; coughing; aching



Measles is circulating

- measles is extremely infectious and can be serious
- Make sure your children get two MMR vaccines on time; the first at 1 year of age and the second at 3 years, 4 months
- If you or your children missed these vaccines, it's not too late. Ask for the **free** vaccine from your family doctor (GP) if you or your children aren't up-to-date
- if you have symptoms of measles, stay at home and phone your GP or NHS 111 for advice. STAY AWAY from GP surgeries and A&E departments - you could spread the illness to others
- symptoms include: high fever; sore red, watery eyes; coughing; aching and feeling generally unwell; a blotchy red brown rash, which usually appears after the first symptoms
- go to nhs.uk for more measles information

Symptoms

- Rash
- Temperature
- Runny Nose
- Red Eyes
- Cough

For more information contact your local GP surgery or visit: www.nhs.uk/mmr

UK Health Security Agency gateway number: 2023004. Download only resource: www.gov.uk/government/publications/measles-outbreak

NHS

1 in 5
children with measles
need a hospital visit

Make sure your child
is up to date with
their MMR vaccinations

sky news Sky News + Follow

Another 70 suspected measles cases in UK as WHO warns of 'alarming rise' in spread across Europe

1d

Another 70 suspected measles cases have been reported in the UK as the World Health Organization (WHO) warns of an "alarming rise" in the spread of the disease across Europe.



Mumps – vaccine preventable



- Fever, swelling of salivary glands in neck - one or both sides
- Adult males can develop orchitis
- Mumps virus can cause meningitis and deafness
- Spread via droplet (sneezing, coughing) or direct contact with saliva
- Exclude for at least 5 days from onset of swelling

Whooping Cough (Pertussis) – vaccine preventable



- Highly contagious – affects all ages
- Infants most vulnerable (vaccine preventable. Vaccine given at 8,12 & 16 weeks of age and 3 years 4 months)
- Highly infectious usually during first 3 weeks of cough
- Spread by coughing, sneezing
- Symptoms – cough, may cause vomiting, cyanosis and characteristic ‘whoop’
- Exclude for at least 48 hrs from commencing antibiotics*

Meningitis - *Inflammation of brain membranes*



- **Bacterial:**
- Meningococcal - spread by prolonged close contact, mouth kissing, close contact and coughing
- Pneumococcal - spread by droplet infection
- **Viral** – many types
- Enteroviruses
- Mumps virus
- Varicella

Meningococcal Meningitis

strains A, B, C, W, & Y are vaccine preventable**

Transmission:

- Person to person by coughs and sneezes.
- It is not very infectious and very close contact is needed with a case before there is a risk of catching the infection.

Incubation period: 4 days but can range between 2-10 days

Symptoms:

- Severe headache, Stiff neck, Fever, Vomiting, Drowsiness, Confusion, Unconsciousness, Photophobia, Non-fading rash.
- Not all these symptoms may be present or they may develop over time

Immediate action

- contact parents,
- immediate medical attention required GP/A&E/Ambulance

Meningococcal septicaemia

- Rash that does not go away when pressed
- Very cold hands and feet
- Rapid breathing
- Increased drowsiness/ unconsciousness
- Increased fever
- Pains in limbs and abdomen



Meningococcal disease continued

Close contacts of a case receive antibiotics to prevent them from spreading the disease. Household members within week preceding diagnosis. Kissing contacts also – intimate mouth kissing.

Action for schools: If advised by a parent their child has been diagnosed with meningococcal disease then contact the Health Protection Team.

Normally we have been notified by the clinician making the diagnosis but it is better to check with us if we are unaware then we can check with the hospital/GP

Letter to parents: If HPT have been informed of a case of meningococcal disease the team will contact the child's school/nursery to arrange a letter/information for parents.

Influenza – vaccine preventable

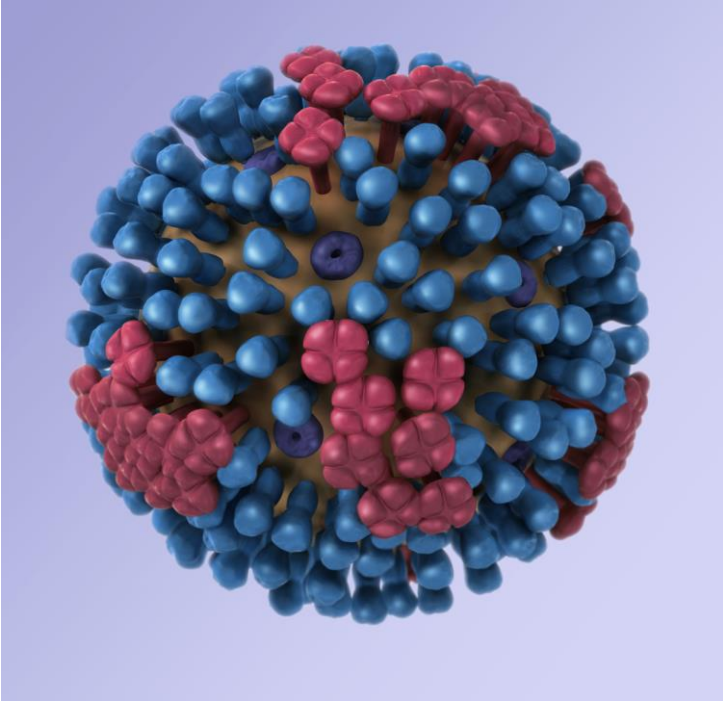


Photo courtesy of CDC/ Douglas Jordan

- Vaccine available annually *
- Highly infectious
- Spread by respiratory droplets
- May vary in presentation in children, such as without fever or with diarrhoea, etc.
- infectious 1 day before to 3 to 5 days after symptoms appear
- Exclusion until at least 5 days from onset of symptoms

Chickenpox

Vaccine available but only for contacts of certain risk groups

- Highly infectious varicella virus
- Droplet spread
- Infectious 2 days before rash to 5 days after blisters appear
- Exclude for 5-6 days from onset of rash – usual timescale
- Pregnancy – seek antenatal advice



Scarlet Fever (Scarlatina)



- Group A Streptococcal bacteria
- Sore throat, red rash on chest, flushed cheeks, fever
- 'Strawberry' tongue
- Spread by secretions (mucus or saliva) from nose and throat
- If treated, exclude at least 24 hrs then return to school if well,
- If not treated, infectious and exclusion for 2-3 weeks

Impetigo

- Skin infection also caused by GAS
- Commonly affects face
- Redness, weeping spots, then crusts
- Leave open to air
- Infectious whilst discharging pus
- Spread by direct contact, sharing towels etc
- Carried in nose of 20-30% population
- **Exclude** until spots healed/crusted over or after 48 hours antibiotics



Group A Strep (GAS)

- Group A streptococcus are bacteria that can be found in the throat and on the skin.
- The most common group A streptococcal infections are mild: sore throats (strep throat), mild fever and minor skin infections (impetigo, scarlet fever).
- In very rare cases, for example when chickenpox infection is also present, group A streptococcal infection can be more serious and can cause more severe disease known as invasive group A streptococcus (iGAS).

Signs and symptoms

- high fever
- severe muscle aches
- localised muscle pain
- increasing pain, swelling or redness at the site of a wound
- unexplained diarrhoea or vomiting

Viral Gastroenteritis

- **Transmission:** Person to person by the faecal oral route, environmental contamination especially toilets, contaminated food and water.
- **Incubation period:** 24 to 48 hours
- **Infectious period:** Infectivity lasts for 48 hours after resolution of symptoms the infective dose is extremely low.
- **Exclusion period:** 48 hours after symptoms have resolved.
- **Symptoms:** Vomiting, diarrhoea, fever
- **Implications for schools - key is controlling spread of infection:**
 - Enforcing exclusion v working parents
 - Promoting hand washing
 - Environmental Cleaning practices/dealing with spillages



Immunisation schedule



Routine childhood immunisations		From September 2023		
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	Left thigh
	Rotavirus gastroenteritis	Rotavirus	Rotarix ²	By mouth
Twelve weeks old	Diphtheria, tetanus, pertussis, polio, Hib and hepatitis B	DTaP/IPV/Hib/HepB	Infanrix hexa or Vaxelis	Thigh
	Pneumococcal (13 serotypes)	PCV	Prevenar 13	Thigh
	Rotavirus	Rotavirus	Rotarix ²	By mouth
Sixteen weeks old	Diphtheria, tetanus, pertussis, polio, Hib and hepatitis B	DTaP/IPV/Hib/HepB	Infanrix hexa or Vaxelis	Thigh
	MenB	MenB	Bexsero	Left thigh
One year old (on or after the child's first birthday)	Hib and MenC	Hib/MenC	Menitorix	Upper arm/thigh
	Pneumococcal	PCV booster	Prevenar 13	Upper arm/thigh
	Measles, mumps and rubella (German measles)	MMR	MMRVaxPro ³ or Priorix	Upper arm/thigh
Eligible paediatric age group ⁴	MenB	MenB booster	Bexsero	Left thigh
	Influenza (each year from September)	Live attenuated influenza vaccine LAIV	Fluenz Tetra ^{5,6}	Both nostrils
Three years four months old or soon after	Diphtheria, tetanus, pertussis and polio	dTaP/IPV	Boostrix-IPV	Upper arm
	Measles, mumps and rubella	MMR (check first dose given)	MMRVaxPro ³ or Priorix	Upper arm
Boys and girls aged twelve to thirteen years	Cancers and genital warts caused by specific human papillomavirus (HPV) types	HPV ⁶	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	Nimenrix	Upper arm

1. 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.
 3. Contains porcine gelatine.
 4. See annual flu letter at: www.gov.uk/government/collections/annual-flu-programme

5. If LAIV (live attenuated influenza vaccine) is contraindicated or otherwise unsuitable use inactivated flu vaccine (check Green Book Chapter 19 for details).
 6. See Green Book chapter 18a for immunising immunocompromised young people who will need 3 doses.

Selective immunisation programmes			
Target group	Age and schedule	Disease	Vaccines required
Babies born to hepatitis B infected mothers	At birth, four weeks and 12 months old ^{1,2}	Hepatitis B	Hepatitis B (Engerix B/HBvaxPRO)
Infants in areas of the country with TB incidence >= 40/100,000	Around 28 days old ³	Tuberculosis	BCG
Infants with a parent or grandparent born in a high incidence country ³	Around 28 days old ³	Tuberculosis	BCG
Children in a clinical risk group	From 6 months to 17 years of age	Influenza	LAIV or inactivated flu vaccine if contraindicated to LAIV or under 2 years of age
Pregnant women	At any stage of pregnancy during flu season	Influenza	Inactivated flu vaccine
	From 16 weeks gestation	Pertussis	dTaP/IPV (Boostrix-IPV)

1. Take blood for HBsAg at 12 months to exclude infection.
 2. In addition hexavalent vaccine (Infanrix hexa or Vaxelis) is given at 8, 12 and 16 weeks.
 3. Where the annual incidence of TB is >= 40/100,000 - see www.gov.uk/government/publications/tuberculosis-by-country-rates-per-100000-people
 4. Check SCID screening outcome before giving BCG.

For vaccine supply information for the childhood programme please visit portal.immform.phe.gov.uk and check vaccine update for all other vaccine supply information.



The safest way to protect children and adults



Benefits of vaccinations



- Vaccination protects children from serious illness and complications of **vaccine-preventable diseases**
- Vaccination is different from giving medicine to an unwell child to make them better. The benefits of vaccination are preventative and invisible.
- Deciding not to vaccinate a child puts them at risk of catching a range of potentially serious, even fatal, diseases.
- They're not 100% effective in every child, which is why it is important to vaccinate every child to ensure **95% herd immunity** and protect those who can not have vaccinations (e.g. having treatment for cancer/ too young).



Herd immunity

Q: What is herd immunity?

#immunityforcommunity

A: When enough people are **immunised** against a disease to protect those who **can't be immunised**.



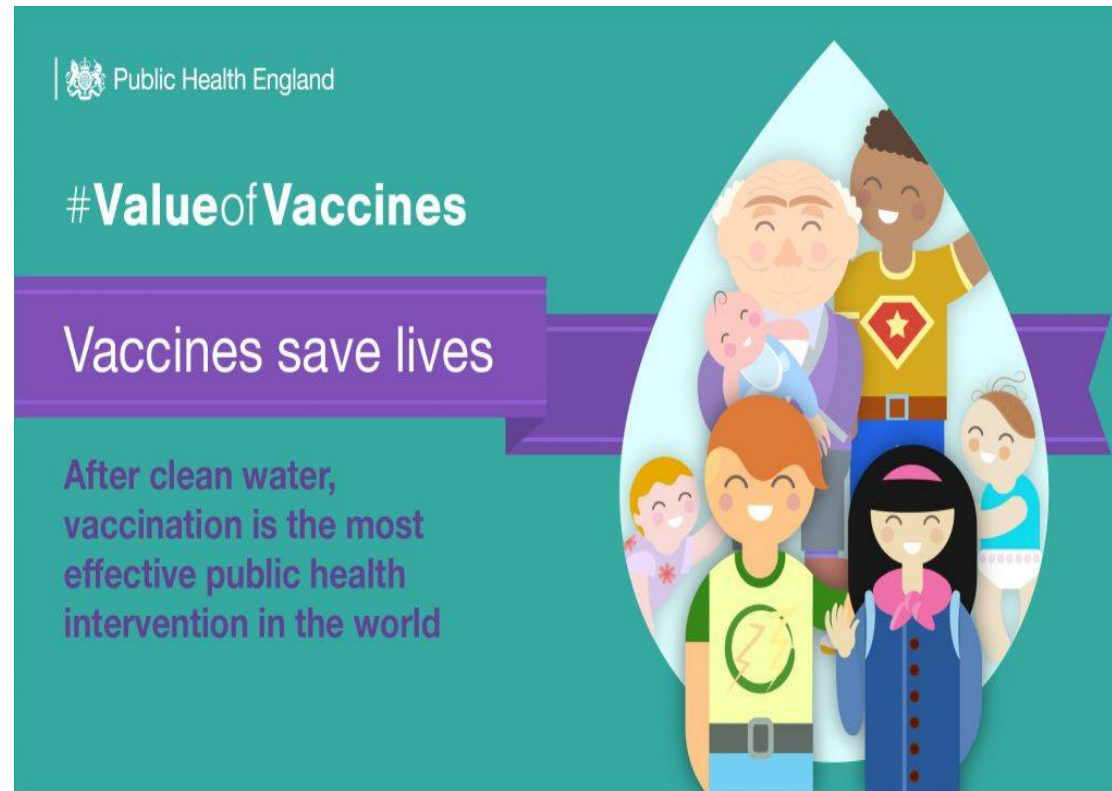
What can you do

- It is with your help as you are on the frontline, in reaching those not yet vaccinated.
- Speak confidently about the value of vaccines and leave the public in no doubt that they are safe and save lives.
- We must work together to ensure underserved populations – the so-called hard to reach, both the unimmunised and under immunised - are engaged and offered vaccines
- MECC
- Signpost to relevant services for further information/ advice or support
- Support people to make an appointment to receive their vaccinations



Make a Pledge

What could you do to support increasing uptake or what ideas could you share?



Further Information

[Health protection in education and childcare settings - GOV.UK \(www.gov.uk\)](https://www.gov.uk)

[UK Health Security Agency - GOV.UK \(www.gov.uk\)](https://www.gov.uk)

www.e-bug.eu

[Should I keep my child off school checklist poster \(publishing.service.gov.uk\)](https://publishing.service.gov.uk)

