

# Meningococcal disease

## Clearance antibiotics – information for clinicians

### Who needs clearance antibiotics?

Meningococcal disease is caused by a bacteria called *Neisseria meningitidis* sp. Meningococci live in the nasopharynx and are transmitted from person to person through prolonged close contact. The incubation period for meningococcal disease is usually three to five days and can be up to seven days.

**Clearance antibiotics should only be given to the following people (see table below) who have had contact with the case within seven days prior to the onset of the case's illness.**

**They should be commenced as soon as possible after diagnosis.**

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**Household contacts** – people living in the same house and include recent visitors who stayed overnight, in the seven days preceding the onset of the case's illness.

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**Dormitory contacts** – household-like contacts in boarding schools, military barracks, school camps, and hostels, in the seven days preceding the onset of the case's illness. Please contact the department for further specification of dormitory contacts prior to administering clearance antibiotics.

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**Intimate contacts** – boyfriends/girlfriends or sexual partners.

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**Medical, nursing, or paramedical staff** – staff who are directly exposed to a case's nasopharyngeal secretions, for example, the person who has intubated the case without wearing a facemask, or performed mouth-to-mouth resuscitation on the case. Other medical staff managing the case do not require clearance antibiotics.

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The primary purpose of clearance antibiotics is to prevent further transmission of infection. They are not a treatment for meningococcal disease.

Regardless of whether they have been given clearance antibiotics, tell contacts of cases about the symptoms of meningococcal disease so that they know when to seek urgent medical attention.

The risk of meningococcal disease in close contacts, while higher than the general population, is still very low. The risk is highest in the first seven days after a case becomes ill and falls rapidly during the following weeks.

If antibiotic prophylaxis is not given the absolute risk to an individual in the same household, one to 30 days after an index case, is about one in 300. The increased risk in household members may be due to a combination of genetic susceptibility in the family, increased exposure to virulent meningococci and environmental factors.<sup>1</sup>

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<sup>1</sup> Guidance for public health management of meningococcal disease in the UK, Health Protection Agency Meningococcus Forum, Updated 2006, available on [www.hpa.org.uk/web/HPAwebFile/HPAweb\\_C/1194947389261](http://www.hpa.org.uk/web/HPAwebFile/HPAweb_C/1194947389261).

## **Meningococcal carriage and disease**

Carriage of meningococci (all strains included) is relatively common. People who do not develop the disease in the seven days after colonisation may become asymptomatic carriers. Meningococci are likely to have been acquired from an asymptomatic person (carrier) who either lives in the same household or is a sexual partner of the sick person. Children tend to acquire their disease from adults (in their household) whereas teenagers and adults are more likely to acquire their disease from close friends.

Most strains of meningococci do not cause disease, but instead provide protection. Other protective bacteria such as lactamicas (*Neisseria lactamica* spp) also colonise the nasopharynx. By giving chemoprophylaxis when it is not needed these bacteria, which are protective, are also eradicated. People can carry meningococci, with no ill effects, sometimes for many months. Carriage produces protection. There is no evidence that carriers will suddenly become cases after weeks or months of carriage.

Clearance antibiotics should only be given to those people who are at risk of either being the source of disease in the case, or of having acquired the invading organism from the case. This is to prevent further transmission.

Penicillin will not reliably eradicate nasopharyngeal carriage. Cases who are treated with benzylpenicillin alone and did not receive at least one adequate parental dose of a third generation cephalosporin, or ciprofloxacin, will therefore require clearance antibiotics before discharge.

### **Which contacts do not need clearance antibiotics?**

- Non intimate kissing contacts, even if on the mouth.
- Work, school, playgroup or occasional childcare contacts.
- People who have shared cigarettes, bongs, food, drink (including sharing drink bottles), lip balm, communion cup, musical instruments or whistles.
- People who have shared the same plane, train, bus or car for a period less than eight hours.

### **What happens during outbreaks?**

When there are two or more cases in four weeks of exactly the same strain in a childcare centre, school or university, all students and staff in the same class or in the same group as the case will be given clearance antibiotics. If the outbreak is attributable to a vaccine preventable strain a vaccination campaign may be instituted.

### **Further information**

For further information please contact the Communicable Disease Prevention and Control Unit on 1300 65 11 60 or after hours on 1300 790 733.

# Clearance antibiotics for meningococcal disease contacts

## Meningococcal clearance antibiotics for adults and children aged 12 years of age and over

Adults and children over 12 years of age:

Ciprofloxacin — 500 mg orally, as single stat dose (minimum weight 40kg); Preferred for women taking oral contraceptive medication

OR Adults and children over 60 kg:

Rifampicin — 600 mg orally, 12 hours for 2 days, as capsules\*

Pregnant or breastfeeding women:

Ceftriaxone—250 mg IMI as a single, stat dose (Refer to product information in regards to preparation)

## Meningococcal clearance antibiotics for children aged less than 12 years of age

Rifampicin can be dispensed for meningococcal contacts as syrup for young children and capsules for older children. (Dosages worked out below based on body weight)

Children under one month of age:

Rifampicin — 5 mg/kg, orally 12 hours for 2 days\*, as syrup

Children over one month of age and up to 12 years old:

Rifampicin — 10 mg/kg orally, 12 hours for 2 days\*, as syrup or capsules

Ceftriaxone (when Rifampicin is unavailable) — 125 mg IMI stat as a single, stat dose (refer to product information in regards to preparation)

## Preparation of Rifampicin

Syrup available as 100mg/5mL strength in 60mL bottles.

Capsules available in 150 mg and 300 mg strength.

Weight	Dose	Freq.	Syrup dose (100mg/5mL)	Weight	Dose	Freq.	Syrup dose (100mg/5mL)	Weight	Dose	Freq.	Syrup dose (100mg/5mL)
5 kg	50 mg	B.D.	2.5 mL	24 kg	240 mg	B.D.	12 mL	43 kg	430 mg	B.D.	21.5 mL
6 kg	60 mg	B.D.	3 mL	25 kg	250 mg	B.D.	12.5 mL	44 kg	440 mg	B.D.	22 mL
7 kg	70 mg	B.D.	3.5 mL	26 kg	260 mg	B.D.	13 mL	45 kg	450 mg	B.D.	22.5 mL
8 kg	80 mg	B.D.	4 mL	27 kg	270 mg	B.D.	13.5 mL	46 kg	460 mg	B.D.	23 mL
9 kg	90 mg	B.D.	4.5 mL	28 kg	280 mg	B.D.	14 mL	47 kg	470 mg	B.D.	23.5 mL
10 kg	100 mg	B.D.	5 mL	29 kg	290 mg	B.D.	14.5 mL	48 kg	480 mg	B.D.	24 mL
11 kg	110 mg	B.D.	5.5 mL	30 kg	300 mg	B.D.	15 mL	49 kg	490 mg	B.D.	24.5 mL
12 kg	120 mg	B.D.	6 mL	31 kg	310 mg	B.D.	15.5 mL	50 kg	500 mg	B.D.	25 mL
13 kg	130 mg	B.D.	6.5 mL	32 kg	320 mg	B.D.	16 mL	51 kg	510 mg	B.D.	25.5 mL
14 kg	140 mg	B.D.	7 mL	33 kg	330 mg	B.D.	16.5 mL	52 kg	520 mg	B.D.	26 mL
15 kg	150 mg	B.D.	7.5 mL	34 kg	340 mg	B.D.	17 mL	53 kg	530 mg	B.D.	26.5 mL
16 kg	160 mg	B.D.	8 mL	35 kg	350 mg	B.D.	17.5 mL	54 kg	540 mg	B.D.	27 mL
17 kg	170 mg	B.D.	8.5 mL	36 kg	360 mg	B.D.	18 mL	55 kg	550 mg	B.D.	27.5 mL
18 kg	180 mg	B.D.	9 mL	37 kg	370 mg	B.D.	18.5 mL	56 kg	560 mg	B.D.	28 mL
19 kg	190 mg	B.D.	9.5 mL	38 kg	380 mg	B.D.	19 mL	57 kg	570 mg	B.D.	28.5 mL
20 kg	200 mg	B.D.	10 mL	39 kg	390 mg	B.D.	19.5 mL	58 kg	580 mg	B.D.	29 mL
21 kg	210 mg	B.D.	10.5 mL	40 kg	400 mg	B.D.	20 mL	59 kg	590 mg	B.D.	28.5 mL
22 kg	220 mg	B.D.	11 mL	41 kg	410 mg	B.D.	20.5 mL	60 kg	600 mg	B.D.	30 mL
23 kg	230 mg	B.D.	11.5 mL	42 kg	420 mg	B.D.	21 mL				

The above prescribing dosages of antibiotics, including rifampicin are in accordance with the Communicable Diseases Network Australia Guidelines for the Early Clinical and Public Health Management of Meningococcal Disease in Australia (2007) therefore the prescribing dosages differs to that in the MIMS.

# Meningococcal disease

## Information for contacts

The Department of Health has been notified of a confirmed or suspected case of meningococcal disease. The action taken by the department's public health staff is the same regardless of whether the case is confirmed or suspected.

### What is meningococcal disease?

Meningococcal bacteria live naturally in the back of the nose and throat of approximately 10 per cent of the population. There are many strains of meningococci and most cause no harm. Occasionally, however, a disease-causing meningococcal strain is passed to someone who has no immunity to these bacteria and this can result in a case of meningococcal disease.

The bacteria are difficult to spread and are only passed from person to person by regular close, prolonged contact. Recent studies have shown that contact with saliva from the front of the mouth, teeth or lips will rarely pass the bacteria from person to person. The bacteria die very quickly when outside the body.

### Contacts of a person with meningococcal disease

People who have been in very close contact with a suspected or confirmed case need to take special antibiotics to clear the bacteria from the back of the throat. This includes household contacts, those who have stayed overnight in the seven days before the case became unwell and intimate contacts such as a boyfriend, girlfriend or sexual partner.

Persons requiring antibiotics are contacted directly by the Department of Health.

### Symptoms of meningococcal disease

Clearance antibiotics do not treat meningococcal disease but may prevent disease-causing strains being passed on to others.

Although the risk of contacts developing meningococcal disease is extremely low, it is important to look out for the symptoms listed in the box. It may take up to seven days for the signs of meningococcal disease to appear.

Signs and symptoms can appear very quickly, and people with meningococcal disease can get much worse within a few hours. You know your family and best friends better than anybody else. If you or someone close to you has some of these signs, and appears to you to be much sicker than usual, seek medical attention from your doctor or nearest hospital emergency department immediately. Please take this letter with you.

### Further information

Contact the Communicable Disease Prevention and Control Unit on telephone 1300 65 11 60.

### Symptoms of meningococcal disease

Infants and young children:

- Fever
- Refusing to take feeds
- Irritability, fretfulness, grunting or moaning
- Extreme tiredness
- Floppiness
- Dislike of being handled
- Vomiting and/or diarrhoea
- Turning away from light (photophobia)
- Convulsions or twitching
- Rash of red-purple pinprick spots or larger bruises

Older children and adults:

- Fever
- Headache
- General malaise
- Neck stiffness
- Discomfort when looking at bright lights (photophobia)
- Vomiting and/or diarrhoea
- Muscles aches
- Painful or swollen joints and/or difficulty walking
- Moaning, unintelligible speech
- Drowsiness
- Confusion
- Collapse
- Rash of red-purple pinprick spots or larger bruises

## What is meningococcal disease?

Meningococcal disease is a rare but very serious illness that usually appears as meningitis or septicaemia.

'Meningitis' means an inflammation of the protective coverings of the brain and spinal cord. 'Septicaemia' means blood poisoning, which is a more widespread infection throughout the body.

Meningococcal disease is caused by bacteria called 'meningococci'. There are a number of different groups of meningococci. In Victoria most disease is caused by Serogroup B. Serogroup C was common but is now rare due to immunisation.

## How serious is meningococcal disease?

Although meningococcal disease is uncommon, it is a very serious disease. The infection can develop very quickly, and can be fatal in about 10 per cent of cases. If infection is diagnosed early enough and the right antibiotics are given quickly, most people make a complete recovery.

About a quarter of people who recover experience after-effects. Some of the more common after-effects include headaches, deafness in one or both ears, tinnitus (ringing in the ears), blurring and double vision, aches and stiffness in the joints, and learning difficulties. Most of these problems get better with time.

## Where do meningococci come from?

Meningococci are common bacteria, and about one in 10 people 'carry' them at the back of the throat or nose. Carriers are more often young adults, and less often children and older people. Meningococci are only found in people, and never in animals or the general environment.

## What is a meningococcal 'carrier'?

Almost all adults and children can carry these germs without ill effects. Research shows that being a carrier usually protects people against dangerous meningococci. People become carriers without knowing they have caught the germ, and will get rid of it naturally, without treatment, after a few weeks or months.

## Who catches meningococcal disease?

Meningococcal disease can occur at any age, but babies and children less than five years of age are most at risk. Teenagers and young adults aged 15–24 years are also at increased risk.

For people who become sick, the average time between being infected and becoming ill is about three to five days, but can be up to seven days. Sometimes small outbreaks occur affecting more than one person, but usually each case is unrelated to any others.

People who get meningococcal disease are more than three times as likely to be in close contact with smokers. Recent viral illness (especially influenza) is also more common. Avoiding smoky and dusty places might also help to prevent infection.

## What are the symptoms?

Someone with meningococcal disease will become very ill, usually feeling sicker than they have ever felt before. There are many symptoms of meningococcal disease, although a few are especially important.

Most cases may have only a few of these symptoms, and they hardly ever happen all at once.

The symptoms of meningococcal disease include:

### In infants and young children:

- fever
- disinterest in feeding
- irritability
- extreme tiredness or floppiness
- dislike of being handled
- vomiting and/or diarrhoea
- turning away from light
- drowsiness
- convulsions or twitching
- rash of red-purple pinpoint spots or larger bruises.

### In older children and adults:

- headache
- photophobia (dislike of bright lights)

- fever
- vomiting and/or diarrhoea
- neck stiffness or aching
- backache
- joint pains and sore muscles
- general malaise, off food
- drowsiness, confusion
- rash of red-purple pinpoint spots or larger bruises.

Young children may not complain of symptoms, so fever, pale or blotchy complexion, vomiting, lethargy (blank staring, inactivity, hard to wake, or poor feeding) and rash are important signs. Signs and symptoms sometimes appear very quickly, and people with meningococcal disease can get much worse within a few hours.

In meningococcal septicaemia, a rash is always a very important sign. The rash can appear anywhere on the body.

You know your family and best friends better than anybody else. If somebody close to you has some of these signs, and appears to you to be much sicker than usual, seek medical help immediately. Young adults should not be left alone if they are sick. Early diagnosis and treatment is vital.

## How is meningococcal disease spread?

The disease is difficult to spread. The germs cannot live for more than a few seconds outside a human body, therefore they cannot be picked up from water supplies, swimming pools, buildings or factories.

Only regular close prolonged household and intimate contact spread the bacteria. Close contacts in residential accommodation, such as student halls of residence and military camps, may be at greater risk of meningococcal disease.

## How is meningococcal disease treated?

If a case of meningococcal meningitis or septicaemia is suspected, an antibiotic is given immediately by injection and the patient is admitted to hospital.

## Can meningococcal disease be prevented?

There are no vaccines that protect against Serogroup B disease. Two vaccine types cover Serogroup C:

- Conjugate meningococcal C is given at 12 months of age as part of the National Immunisation Program.

This vaccine effectively protects against Serogroup C disease, and provides long lasting immunity.

- Polysaccharide meningococcal vaccines cover several serogroups not often seen in Australia and are useful for travelers to places such as Africa and Asia, and pilgrims to the Haj. However, they cannot be given to children under the age of two, and they only provide protection for about three years.

## What happens when a case occurs?

Very close contacts of a case are given antibiotics to prevent further spread of infection. These people are members of the same household, a girl/boyfriend, and anyone who has stayed overnight in the seven days before the case became unwell. Other contacts, such as friends and work colleagues, do not usually need treatment. Whenever a case occurs, the Department of Health will advise what should be done, and will make sure all close contacts are treated with the right antibiotics to stop the infection spreading.

Only close contacts need to be treated. This will be organised by the Department of Health. Giving antibiotics to people who do not need them may cause problems.

Once a person has recovered from meningococcal disease he/she will not be infectious, and can safely return to child care, school, or work. Household contacts may return to school or child care once they have commenced an appropriate course of antibiotics.

## What should I do if my child has had contact with meningococcal disease?

The disease is not normally spread through schools or work places. Watch carefully for any sign of illness in your child and seek attention immediately if you are concerned.

## More information

The following websites provide further information:

Better Health Channel  
[www.betterhealth.vic.gov.au](http://www.betterhealth.vic.gov.au)

Meningitis Foundation of America  
[www.musa.org](http://www.musa.org)

Meningitis Trust  
[www.meningitis-trust.org.uk](http://www.meningitis-trust.org.uk)

The Meningitis Research Foundation  
[www.meningitis.org.uk](http://www.meningitis.org.uk)

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# Meningococcal disease

## Rifampicin information

### What is Rifampicin?

Rifampicin is an antibiotic that is given to very close contacts of a suspected or confirmed case of meningococcal disease. It is given to remove meningococcal bacteria that are commonly found in the back of the throat and is done to reduce the risk of disease causing strains of the bacteria being passed on to other people.

### What you need to tell your doctor

Rifampicin is not recommended for everyone so please tell the doctor if you:

- are pregnant
- have liver disease
- are taking oral contraceptives
- have a high alcohol intake or are alcoholic
- are taking medication for diabetes, heart disease, asthma, or epilepsy
- are taking anticoagulant (blood thinning) drugs, steroids, antiviral medicines, cyclosporines, or methadone
- wear contact lenses

### Taking antibiotics

All antibiotics carry a potential risk of allergic reactions. If you experience symptoms such as itchy skin, facial swelling or difficulty breathing you should seek urgent medical attention from the nearest hospital emergency department and consider calling an ambulance.

You should take Rifampicin two times a day for two days (a total of four doses), 12 hours apart.

You should take it on an empty stomach, at least half an hour before or at least two hours after eating.

If you have been given Rifampicin syrup for a child, when the child has completed the four doses, throw away any remaining syrup.

### Side effects

Some people experience side effects such as nausea, dizziness and headache from taking Rifampicin. Rifampicin turns body fluids such as urine and tears an orange-pink colour (this stops after you have finished the course). Avoid using soft contact lenses until you have finished these antibiotics as permanent red staining can occur.

### Symptoms of meningococcal disease

Infants and young children:

- Fever
- Refusing to take feeds
- Irritability, fretfulness, grunting or moaning
- Extreme tiredness
- Floppiness
- Dislike of being handled
- Vomiting and/or diarrhoea
- Turning away from light (photophobia)
- Convulsions or twitching
- Rash of red-purple pinprick spots or larger bruises

Older children and adults:

- Fever
- Headache
- General malaise
- Neck stiffness
- Discomfort when looking at bright lights (photophobia)
- Vomiting and/or diarrhoea
- Muscles aches
- Painful or swollen joints and/or difficulty walking
- Moaning, unintelligible speech
- Drowsiness
- Confusion
- Collapse
- Rash of red-purple pinprick spots or larger bruises

## **Symptoms of meningococcal disease**

These antibiotics do not treat someone who is already incubating the disease. Although the risk of contacts developing meningococcal disease is extremely low, it is important to look out for the symptoms listed in the box. It may take up to seven days for the signs of meningococcal disease to appear.

Signs and symptoms can appear very quickly, and people with meningococcal disease can get much worse within a few hours. You know your family and best friends better than anybody else. If you or someone close to you has some of these signs, and appears to you to be much sicker than usual, seek medical attention from your doctor or nearest hospital emergency department immediately. Please take this letter with you.

## **Further information**

For further information please contact the Communicable Disease Prevention and Control Unit on telephone 1300 65 11 60.



# Meningococcal disease

## Ciprofloxacin information

### What is Ciprofloxacin?

Ciprofloxacin is an antibiotic drug that is given to very close contacts of a suspected or confirmed case of meningococcal disease. It is given to remove meningococcal bacteria that are commonly found in the back of the throat and is done to reduce the risk of disease-causing strains of the bacteria being passed on to other people.

### What you need to tell your doctor

Ciprofloxacin is not recommended for children under 12 years of age and not suitable for everyone so please tell the doctor if you:

- have had an allergic reaction to Ciprofloxacin in the past
- are pregnant or breast feeding
- are taking other medicines, particularly 'blood-thinning' tablets.

### Taking antibiotics

All antibiotics carry a potential risk of allergic reactions. If you experience symptoms such as itchy skin, facial swelling or difficulty breathing you should seek urgent medical attention from the nearest hospital emergency department and consider calling an ambulance.

Ciprofloxacin is taken as a single 500mg dose. The tablet should be swallowed whole with a glass of water. It should be taken on an empty stomach at least half an hour before or at least two hours after eating. The most common side-effect from taking Ciprofloxacin is mild nausea.

Delay taking the tablet if you have taken antacid (indigestion) medicines or iron or mineral supplements within the last four hours.

If you are unable to take Ciprofloxacin for any reason please consult your local doctor for advice on alternative treatments.

### Symptoms of meningococcal disease

These antibiotics do not treat someone who is already incubating the disease. Although the risk of contacts developing meningococcal disease is extremely low, it is important to look out for the symptoms listed in the following table. It may take up to seven days for the signs of meningococcal disease to appear.

Signs and symptoms can appear very quickly, and people with meningococcal disease can get much worse within a few hours. You know your family and best friends better than anybody else. If you or someone close to you has some of these signs, and appears to you to be much sicker than usual, seek medical attention from your doctor or nearest hospital emergency department immediately. Please take this letter with you.

### Further information

For further information please contact the Communicable Disease Prevention and Control Unit on telephone 1300 65 11 60.

### Symptoms of meningococcal disease

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- Turning away from light (photophobia)
- Convulsions or twitching
- Rash of red-purple pinprick spots or larger bruises

Older children and adults:

- Fever
- Headache
- General malaise
- Neck stiffness
- Discomfort when looking at bright lights (photophobia)
- Vomiting and/or diarrhoea
- Muscles aches
- Painful or swollen joints and/or difficulty walking
- Moaning, unintelligible speech
- Drowsiness
- Confusion
- Collapse
- Rash of red-purple pinprick spots or larger bruises