

## **PHLS Communicable Disease Surveillance Centre**

### **Questions Commonly asked by Health Care Providers about Anthrax**

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8. I / my patient has received what he feels is a suspect letter / package. What shall I do?
9. My patient was in the United States recently. Should he be given ciprofloxacin prophylaxis?

## Section A: Anthrax Disease Facts:

### 1. What is Anthrax?

Anthrax is a bacterial infection caused by the organism *Bacillus anthracis*. This bacterium is carried by wild and domestic grass eating animals such as cows in Asia, Africa, South America and parts of Europe. The bacterium can exist in a form known as a spore, which allows it to survive in the environment (for example, in the soil).

### 2. What are the Symptoms?

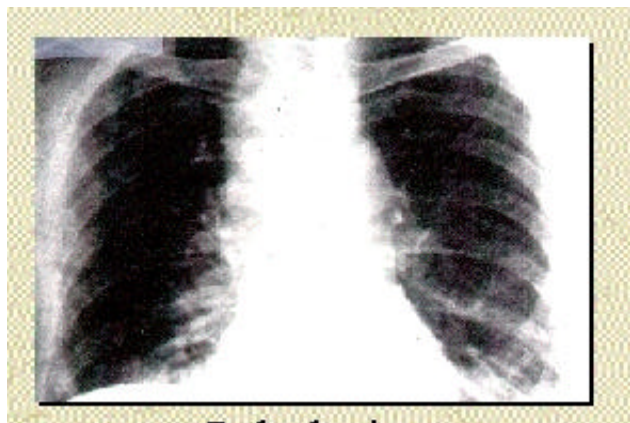
There are three different types of Anthrax. The most common type is the skin (cutaneous) type. Very rarely it can cause gut or lung (inhalational) disease.

In **cutaneous anthrax**, itching occurs first. This is followed by appearance of a lesion commonly on the head, forearms or hands. At first, the lesion is a small bump. It then ulcerates and becomes weepy, and although surrounded by marked swelling, it is rarely painful. This **painless swelling** is the cardinal feature of the disease and differentiates it from cellulitis. The ulcer develops a depressed, black centre in 2-6. If untreated the infection can spread and cause blood poisoning. If untreated, it used to be fatal in 5-20% of cases but with effective antibiotic therapy very few deaths occur.



Late Stage of cutaneous Anthrax

Initial symptoms of **Inhalational Anthrax** are mild and non-specific. They characteristically include fever, tiredness, mild cough or chest pain. This is followed by the second phase characterised by acute respiratory distress, sepsis and acute haemorrhagic mediastinitis causing **mediastinal widening on chest X-ray**. This in a previously healthy patient is highly suggestive of anthrax. At this stage, the disease often has a fatal outcome.



Inhalational Anthrax, note Widened Mediastinum

**Intestinal Anthrax** is a very rare form of food poisoning and results in severe gut disease, fever and blood poisoning. It is very difficult to recognise and consequently is often fatal



Intestinal Anthrax

### **3. What does cutaneous (skin) anthrax look like in children?**

The first sign, an itchy bump and over the next day or two, the bump forms a small blister. Often the top gets broken and then there is a weepy ulcer in the middle of a swollen area. Over the next couple of days the ulcer usually develops a black covering very much like the adults form (see Picture in an adult). Local lymph nodes may become enlarged. The child usually remains well and the area surrounding the lesion is very swollen. In comparison to other skin infections, the swelling is usually painless. If the infection starts to spread, usually in the later stages of the infection, then the child will develop a fever, and is obviously ill.

### **4. How is Anthrax caught?**

Anthrax is primarily a disease of animals not humans. It is an occupational hazard of workers who process hides, hair, bone and bone products, vets and agricultural workers and people in specialist laboratories working with anthrax.

Its reservoir is in herbivores. When their blood is spilt however accidentally or intentionally, the bacteria is in contact with air whereupon it converts to a tough coated spore which can last in the soil for years.

Cutaneous Anthrax is by contact with tissues of animals dying with the disease or by contact with contaminated products.

Inhalational Anthrax results from inhalation of spores in industrial processes e.g. From hides of animals. It is very rare, the last case in England and Wales was in 1974..

Intestinal Anthrax is even more rare but occurs from swallowing spores in contaminated meat.

*It is extremely unusual for anthrax to be transmitted from person to person*

## **5. How long can you have the infection before developing symptoms?**

From 1 –7 days, although incubation period can be up to 60 days.

## **6. How can anthrax be prevented?**

There is a vaccine against anthrax, but this is recommended only for those in highest risk (for example laboratory staff who may be handling the organism or those working in tanneries). Vaccination is not recommended for the general public.

Correct treatment of hides and wool (washing, or disinfecting them) as well as adequate ventilation of work areas in hazardous industries are also recommended.

## **7. How do you treat Anthrax?**

Anthrax can be treated effectively with a variety of antibiotics, but early recognition of the disease is essential if the treatment to be successful.

In case of cutaneous anthrax, antibiotic therapy sterilises a skin lesion within 24 hours but the ulcer goes on through its natural cycle.

The antibiotics of choice are ciprofloxacin for cutaneous anthrax, given for 5-7 day. Tetracyclines, erythromycin and penicillin are also effective. Intravenous ciprofloxacin is the drug of choice for inhalational anthrax.

If exposure to aerosolised anthrax is credible or confirmed, person at risk should begin post exposure prophylaxis with both antibiotics (fluoroquinolones are the drug of choice or doxycycline) and vaccine. Immunisation is recommended because of the uncertainty of when or if the inhaled spores may germinate. It consists of 5 injections, first one is as soon as possible followed by 3 weeks, 6 weeks, 6 months and 1 year after the exposure

## **8. Do patients need to be Quarantined?**

No there is no need for quarantine

## **Section B: Frequently Asked Questions by Health Professionals About the Perceived Threat of Anthrax:**

### **1. I have a patient who has come back from Florida, does he or she need to be tested or to be given antibiotics or vaccine for anthrax?**

No, they do not need any of these. The general population in Florida is not at risk. Only people who worked in the American Media Inc. (AMI) publishing house in, Florida or visited the building for more than an hour between August 1<sup>st</sup> and October 4<sup>th</sup> 2001 need to be tested for anthrax spores and be put on antibiotics.

**2. One of my patients is very concerned about ANTHRAX and believes that he / she should be vaccinated. Where can I get the vaccine?**

Anthrax Vaccination is not recommended for the general public. It is recommended for a very few people at risk from their work. This is those working with animal hides (especially imported hides), in abattoirs or laboratories. Details are in the recommendations of the UK Joint Committee for Vaccination and Immunisation (JCVI) in the current Green Book (Immunisation Against Infectious Disease pp 61-3). The vaccine is not produced commercially and cannot be purchased.

**3. My patient works in a tannery / abattoir does he need to be vaccinated against Anthrax?**

Yes, he is in the population group that is at higher risk and can be vaccinated. The Green book page 61 gives details of the vaccine. Your GP or Occupational Health Specialist need to contact immunisation department at CDSC to arrange vaccine issuance.

**4. One of my patients is going to work abroad where I hear anthrax is common. Should he be vaccinated?**

No, you only need anthrax vaccine if it is recommended as a vaccine in the Green Book (see question 2) or in the yellow book on "Health Information for Overseas Travel"

**5. I am a GP, Can I buy anthrax / smallpox vaccines privately for my patients?**

No. Both vaccines are produced by the government and are not for sale to private individuals or companies. They are not produced commercially in the UK.

**6. My patient has received a letter from AMI. Is it dangerous?**

Treat it like any other letter. There is no risk from mail from AMI.

**7. My patient has received a package from the USA. He is anxious about whether it could contain anthrax. What shall I advise?**

He should treat it like any other package. However, if you feel that the package is suspect, then put it in a plastic bag and call the local police. Do not take it to the local police station.

**8. I / my patient has received what he feels is a suspect letter / package. What shall I do?**

You should not open the suspect package, letter but should call the local police station.

**9. My patient was in the United States recently. Should he be given ciprofloxacin prophylaxis?**

We are following advice given by Centers for Disease Control and Prevention (CDC), Atlanta. There have been a number of confirmed reports of anthrax releases in the United States. CDC develops a Potentially Exposed Peoples (PEPs) definition and those classified as PEPs require chemoprophylaxis. The US and UK chemoprophylaxis regimens are oral ciprofloxacin 500 mg bd for 60 days. Nose swabs or serology may be taken for research or surveillance.

Table 1 below contains PEP definitions for those offered chemoprophylaxis. (Please also see the update on the following page).

**Table 1: Functional Definition of who gets offered chemoprophylaxis – confirmed case 23/10/01**

<b>Area</b>	<b>Location (and Type of anthrax)</b>	<b>Definition for being PEP</b>
1. Florida	America Media Inc (inhalation - lung)	Those who were in the AMI building for 1 hour or more from 1 August till October 4 <sup>th</sup>
2. Washington	Hart Building, Congress (nil cases)	Those on South East part of 5 <sup>th</sup> or 6 <sup>th</sup> floor SE wing senate Hart Building at any time on 15 October, 9am and 7pm
3. New York	NBC Rockefeller Center (skin)	Antibiotics not given unless an individual is symptomatic
4. New York	ABC Newsroom (skin)	Antibiotics not given unless an individual is symptomatic
5. New York	CBS (skin)	Antibiotics not given unless an individual is symptomatic
6. New York	New York Post (the newspaper) (skin)	Antibiotics not given unless an individual is symptomatic
7. New Jersey	Trenton (inhalation - lung)	Antibiotics not given unless an individual is symptomatic
8. Washington	Brentwood Mailroom serving Congress (inhalation – lung)	Any person currently employed in the Brentwood Facility

**Update 1 November 2001.**

**There has been a confirmed case of inhalational anthrax in New York City in an employee of Manhattan Eye, Ear and Throat Hospital at 210 E. 64<sup>th</sup> Street. Antibiotic prophylaxis has been recommended, by the authorities in New York, to all employees, as well as patients and visitors who spent at least one hour in the hospital since October 11, 2001, pending the results of the environmental and epidemiologic investigation .**

**Persons who meet these criteria are being treated with a 14-day supply of either oral ciprofloxacin or doxycycline. A determination regarding if and who should continue the full 60-day course for inhalational anthrax will be made once the results of the epidemiologic and environmental investigations are available.**

**Nasal swab testing is only being conducted among staff that work in the immediate area where the patient was employed. There is no need to perform additional nasal swab testing of other persons who report exposure to this facility.**



Anthrax Eschar



Early Cutaneous Oedema



Healing Eschar