



BC Centre for Disease Control  
Provincial Health Services Authority

# Nontuberculous Mycobacteria Disease

## What is Nontuberculous Mycobacteria (NTM) Disease?

NTM are bacteria that are found in the environment. Breathing these bacteria into your lungs may cause disease in both healthy people and people with weakened immune systems. NTM disease most often affects the lungs in adults, but it can affect any body site. Unlike tuberculosis (TB), it is very rare for NTM bacteria to spread from one person to another. The number of people with NTM disease is increasing worldwide.

## What causes NTM disease?

There are over 160 different kinds of NTM bacteria. Some types are more common in different parts of the world than others. The most common types are *Mycobacterium avium complex (MAC)*, *Mycobacterium abscessus complex*; and *Mycobacterium kansasii*. Everyone inhales NTM bacteria into their lungs but only a very small number of people get sick with NTM disease.

## Who gets NTM disease?

Some people are more likely to develop NTM disease. People with lung diseases like bronchiectasis (enlargement of the airways), chronic obstructive pulmonary disease (COPD), cystic fibrosis, alpha-1 antitrypsin deficiency, or people who have had other lung infections in the past (like TB) are more likely to get NTM disease.

## What are the signs and symptoms of NTM lung disease?

NTM causes symptoms similar to a pneumonia that does not go away:

- Cough with sputum (phlegm or mucous)
- Fatigue (feeling tired)
- Fever
- Coughing up blood
- Unplanned weight loss
- Shortness of breath
- Night sweats

## How is NTM disease diagnosed?

It can be hard to tell who is carrying the bacteria and is not sick (we call this colonized) from those with true NTM disease. Diagnosis depends on:

- tests that show the NTM bacteria are there **AND**
- radiology (chest x-ray or CT scan) **AND**
- clinical judgement based on symptoms and other tests showing evidence of disease

Sputum (phlegm or mucous) is looked at under the microscope to see if NTM bacteria are there. Cultures are also done to see if the bacteria grows. Some NTM grow within a few days but some take several weeks to grow.

The best way to get a sputum sample is to cough out three early-morning sputum samples on different days. Sometimes, when samples are difficult to get, or are unclear, a thin, flexible tube with a camera (a bronchoscope) may need to be inserted into your lungs to get samples. If other parts of the body are affected, fluids or tissues may also need to be collected.

Your health care provider will order other tests like chest x-ray or a CT scan. Your health care provider will discuss which tests are best for you and what the results show. Repeat sputum cultures are usually done during treatment to see if the treatment is working.

## How is NTM disease treated?

Treatment depends on which type of NTM bacteria is causing disease. Treatment may be more successful for some types of NTM bacteria than others. Usually, NTM in the lungs is treated with three or more antibiotics until sputum cultures are negative for 12 months. It can often take 18 months to finish a full course of NTM medications. Some of the antibiotics used to treat NTM like MAC include macrolides (azithromycin/clarithromycin), ethambutol, and rifamycins. Sometimes treatment can be toxic or hard to take due to side effects, therefore you will be followed closely during treatment. This includes clinic appointments, blood work, and other tests. Other therapies may also be used, such as airway clearance.

## What do you need to do now?

- Get medical attention if you have symptoms of pneumonia that lasts longer than two weeks.
- If you are being treated for pneumonia, tell your health care provider if your symptoms do not get better or if you cough up blood.
- Take all medications and antibiotics as prescribed.
- Remember to get your influenza ("flu") shot every year.
- Avoid using or second hand exposure to tobacco products.