

# Multidrug-resistant tuberculosis (MDR-TB)



## What is MDR-TB?

MDR-TB occurs when TB bacteria become resistant to the two most powerful antibiotics normally used to treat the illness. This means that these medicines will not work effectively as they can no longer kill the TB bacteria.

## What does it mean if I have MDR-TB?

MDR-TB is more difficult to treat than ordinary TB. The medicines used against it have a greater number of side effects and have to be taken for much longer, at least 18 months. If you have MDR-TB, you will be infectious for longer, may feel more unwell and are more likely to be admitted to hospital for treatment. However, if you take all the medication for the full course there is a very high chance of a successful cure.

## What kind of drugs will I have to take?

You will be given a certain combination of drugs to treat your MDR-TB, and on the following pages you can find further information on these drugs. Like all other medicines, they may have certain side effects, the most common of which are listed. Please see your TB Nurse if you are struggling with the side effects.

## Before you start taking your TB drugs:

Tell your doctor about:

- all other medicines that you are taking including any that you buy over the counter in a pharmacy
- any previous allergy to any other medicines
- if you are pregnant or breastfeeding.

## Where can I go for support?

If you or a loved one is diagnosed with MDR-TB, there is help available so you don't feel alone.

- Your TB Nurse is there to support you through your treatment. Please contact her/him if you have bad side effects or there is anything you are unsure of regarding your treatment.
- You may find it helps to speak to someone who knows what you're going through. Members of the TB Action Group (TBAG), who have had TB themselves, are available to chat with you and support you through your treatment. Email [info@tbalert.org](mailto:info@tbalert.org) or telephone 01273 234029 for more details.
- [www.thetruthabouttb.org](http://www.thetruthabouttb.org) is a useful website with information on TB and treatment.

---

Your TB Nurse is:

.....

Your Hospital Doctor is:

.....

Contact No:

.....

Email:

---



**BTS**  
MDRTB  
Clinical Advice  
Service

**Amikacin/Capreomycin****GIVEN BY DOCTOR****+ Before receiving amikacin or capreomycin tell your doctor about:**

- any previous allergy to any other medicines
- if you have ever had any kidney disease
- if you have any hearing difficulties or tinnitus (ringing or buzzing in the ears)
- if you suffer from a disorder called myasthenia gravis (severe weakness of certain muscles).

**→ Receiving amikacin or capreomycin**

Amikacin and capreomycin are usually given as an injection into a muscle, or into a vein either as an injection or as a drip.

They are usually given once every day to begin with. After two to three months, they may be given three times a week.

**! Side effects may include:**

- ringing in your ears, or loss of hearing
- dizziness, or problems with your balance
- a decrease in the amount of urine you produce
- muscle weakness
- trouble breathing
- skin rashes and itchiness.

**Bedaquiline****+ Before taking bedaquiline tell your doctor about:**

- any previous allergy to any other medicines
- if you have ever had any kidney or liver disease
- if you have ever had any heart problems
- if you have ever had any thyroid problems.

**→ Taking your bedaquiline**

Bedaquiline is best taken with, or after, meals. Tablets should be swallowed whole with water. Your doctor or nurse will discuss with you the best time to take your bedaquiline. You should not drink alcohol while taking this medicine.

**! Side effects may include:**

- headache
- dizziness
- pain or swelling in the joints
- stomach upsets such as nausea (feeling sick), vomiting and diarrhoea
- chest pain
- if you experience a racing heartbeat or your heartbeat suddenly becomes more noticeable (palpitations), or you faint, contact your doctor or nurse immediately.

**Clofazimine****+ Before taking clofazimine tell your doctor about:**

- any previous allergy to any other medicines
- any allergy to peanuts or soya
- if you have ever had any kidney disease.

**→ Taking your clofazimine**

Clofazimine is best taken with meals, or with milk to prevent stomach upset. Your doctor or nurse will discuss with you the best time to take your clofazimine.

While taking clofazimine, you should avoid strong sunlight and wear sunscreen. The drug may make your skin more sensitive to sunlight than normal, causing a rash or severe sunburn.

**! Side effects may include:**

- pink, red or brownish-black colouration of the skin and body secretions. This should go away after stopping the medicine, but may take a long time
- skin rashes and itchiness
- stomach upsets such as nausea (feeling sick), vomiting and diarrhoea
- bloody or black stools or diarrhoea.

**Cycloserine****+ Before taking cycloserine tell your doctor about:**

- any previous allergy to any other medicines
- if you suffer from epilepsy or a condition which makes you likely to have convulsions
- if you have ever had any mental health problems such as depression, anxiety or psychosis
- if you have ever had any kidney disease.

**→ Taking your cycloserine**

Cycloserine is best taken before you eat food. If you do take it with food, avoid large fatty meals. Your doctor or nurse will discuss with you the best time to take your cycloserine.

You must take pyridoxine (vitamin B6) while taking this medicine.

**! Side effects may include:**

- skin rashes and itchiness
- sleepiness
- confusion
- agitation, depressed mood, or changes in behaviour or personality.

## Delamanid



### + Before taking delamanid tell your doctor about:

- any previous allergy to any other medicines
- if you have ever had any kidney or liver disease
- if you have ever had any heart problems.

### → Taking your delamanid

Delamanid is best taken with meals. Tablets should be swallowed whole with water. Your doctor or nurse will discuss the best time to take your delamanid.

### ! Side effects may include:

- stomach upsets such as nausea (feeling sick), vomiting and diarrhoea
- dizziness
- if you experience a racing heartbeat or your heartbeat suddenly becomes more noticeable (palpitations), or you faint, contact your doctor or nurse immediately.

## Ethambutol



### + Before taking ethambutol tell your doctor about:

- any previous allergy to any other medicines
- if you have any colour blindness or visual disturbances.

### → Taking your ethambutol

Ethambutol can be taken before or after you eat food. Your doctor or nurse will discuss with you the best time to take your ethambutol.

### ! Side effects may include:

- reversible visual disturbances (blurred and red/green colour disturbance), which are rare. If you notice this, stop taking your tablets and inform your doctor or nurse immediately. Your doctor or nurse will arrange for you to have an eye test before you start taking ethambutol
- skin rashes and itchiness.

## Levofloxacin, moxifloxacin or ofloxacin



### + Before taking levofloxacin, moxifloxacin or ofloxacin tell your doctor about:

- any previous allergy to any other medicines
- if you have ever had any liver disease
- if you have ever had any heart problems
- if you have ever had any problems with your tendons related to treatment with quinolone antibiotics
- if you suffer from epilepsy or a condition which makes you likely to have convulsions.

### → Taking levofloxacin moxifloxacin or ofloxacin

These can be taken before or after you eat food. Your doctor or nurse will discuss the best time to take your tablets. You should not drink milk, or take antacids, vitamin supplements or sucralfate within two hours of taking levofloxacin and moxifloxacin.

### ! Side effects may include:

- stomach upsets such as nausea (feeling sick), vomiting and diarrhoea
- jaundice (yellowing of the skin or eyes). If you notice this, please stop taking your TB tablets and seek medical attention immediately
- skin rashes and itchiness
- pain, swelling or tearing of a tendon (in the back of your ankle, elbow, etc), muscle or joint pain
- if you experience a racing heartbeat or your heartbeat suddenly becomes more noticeable (palpitations), or you faint, contact your doctor or nurse immediately.

## Linezolid

ZYVOX  
600mg

### + Before taking linezolid tell your doctor about:

- any previous allergy to any other medicines
- if you are taking any other medicines, in particular decongestants or those used to treat depression or Parkinson's disease
- if you have high blood pressure
- if you have an overactive thyroid gland
- if you have a tumour of the adrenal glands or carcinoid syndrome
- if you have ever had any kidney or liver disease
- if you suffer from epilepsy or a condition which makes you likely to have convulsions
- if you are anaemic, or bruise and bleed easily.

### → Taking your linezolid

Linezolid can be taken before or after meals. Your doctor or nurse will discuss the best time to take your linezolid. Avoid eating large amounts of mature cheeses, yeast extracts or soya bean extracts (such as soy sauce), or drinking large amounts of alcohol.

### ! Side effects may include:

- stomach upsets such as nausea (feeling sick), vomiting and diarrhoea; or a metallic taste
- skin rashes and itchiness
- bloody or black stools or diarrhoea
- pain, numbness, tingling or weakness in your fingers or toes
- headaches
- unexplained bruising or bleeding
- visual disturbances (blurred vision, colour disturbance), which are rare. If you notice this, stop taking your tablets and inform your doctor or nurse immediately. Your doctor or nurse will arrange for you to have an eye test before you start taking linezolid.

## P-aminosalicylic acid



### + Before taking p-aminosalicylic acid tell your doctor about:

- any previous allergy to any other medicines
- if you have ever had any kidney or liver disease
- if you have ever had any thyroid problems
- if you have ever had a gastric ulcer.

### → Taking your p-aminosalicylic acid

P-aminosalicylic acid must be stored in your refrigerator. Your doctor or nurse will discuss with you the best time to take your p-aminosalicylic acid.

Do not use if the packets have become swollen, or if the granules have lost their tan colour and are a dark brown or purple colour.

Sprinkle the granules over apple sauce or yogurt, or swirl in juice (tomato, grape, grapefruit, cranberry, apple or orange). Do not chew the granules.

The skeleton of the granules may be seen in your faeces. This is normal.

### ! Side effects may include:

- stomach upsets such as nausea (feeling sick), vomiting and diarrhoea
- jaundice (yellowing of the skin or eyes). If you notice this, please stop taking your TB tablets and seek medical attention immediately
- skin rashes and itchiness.

## Prothionamide



### + Before taking prothionamide tell your doctor about:

- any previous allergy to any other medicines
- if you have ever had any liver disease
- if you have ever had any thyroid problems
- if you suffer from epilepsy or a condition which makes you likely to have convulsions
- if you have ever had any mental health problems such as depression, anxiety or psychosis.

### → Taking your prothionamide

Prothionamide is best taken with, or after, meals. Your doctor or nurse will discuss with you the best time to take your prothionamide. You must take pyridoxine (vitamin B6) while taking this medicine.

### ! Side effects may include:

- stomach upsets such as nausea (feeling sick), vomiting and diarrhoea
- a metallic taste in your mouth
- jaundice (yellowing of the skin or eyes). If you notice this, please stop taking your TB tablets and seek medical attention immediately
- agitation, depressed mood, or changes in behaviour or personality.

## Pyrazinamide



### + Before taking pyrazinamide tell your doctor about:

- any previous allergy to any other medicines
- if you have ever had any liver disease.

### → Taking your pyrazinamide

Pyrazinamide can be taken before or after you eat food. Your doctor or nurse will discuss with you the best time to take your pyrazinamide.

### ! Side effects may include:

- stomach upsets such as nausea (feeling sick), vomiting and diarrhoea
- flu like symptoms such as chills, fever, dizziness and bone pain
- jaundice (yellowing of the skin or eyes). If you notice this, please stop taking your TB tablets and seek medical attention immediately
- skin rashes and itchiness
- pain or swelling in the joints.



[www.tbalert.org](http://www.tbalert.org)

TB Alert is the UK's national tuberculosis charity, supporting patients and helping to save lives from TB. We work in the UK, India, Zambia, Malawi and Zimbabwe.

### Our *The Truth About TB* programme in the UK focuses on:

- raising public and professional awareness about TB and providing support to patients during their treatment
- bringing together statutory health services, voluntary organisations and people affected by TB to plan and deliver better TB services
- developing policy and advocating for the resources to improve the care of patients and the prevention and control of TB.

Any information in this handout regarding the diagnosis and treatment of TB is intended to give general information on the subject only. Questions and concerns should be directed to your healthcare professional.