

# Pulmonary Rehabilitation Medication



# Medication

A lot of respiratory medications are given in devices called inhalers. The drug inside an inhaler goes straight into the airways when you breathe in. This ensures that the drug is able to treat the airways and lungs, but little of the drug gets into the rest of the body (via the bloodstream). As a result, side effects are unlikely to occur, (and if they do occur, they are usually minor). Some people find inhalers more difficult than others to use.



# Short-Acting Bronchodilator Inhalers

A drug type called a bronchodilator may be prescribed. Bronchodilators work by relaxing the muscles in the airways (bronchi) and allowing them to open up (dilate) These are known as relievers and include:

## **Beta-agonist inhalers**

- Salbutamol - Symptoms improve within 5-15 minutes
- Terbutaline (Bricanyl) - Symptoms improve within 5-15 minutes

## **Antimuscarinic inhalers**

- Ipratropium (Atrovent) - Symptoms improve within 30-40 minutes.

The effect of both types of inhalers usually lasts for approximately 3-6 hours. Some people may only use the inhaler as and when it is required, whilst others use the inhaler regularly. The beta-agonist and antimuscarinic inhalers work in different ways. Using both may help some people better than using one type alone.

# Long-Acting Bronchodilator Inhalers

These work similarly to short-acting inhalers, but each dose lasts at least 12 hours. Long-acting bronchodilator inhalers may be an option if symptoms remain troublesome despite taking a short-acting bronchodilator.

## **Beta-agonist inhalers**

- Formoterol or salmeterol

## **Antimuscarinic inhalers**

- Tiotropium (Spiriva)

# Steroid Inhalers

A steroid inhaler may help in addition to a bronchodilator inhaler and are used to reduce inflammation in the airways. Steroid inhalers include:

- Beclomethasone
- Budesonide
- Ciclesonide
- Fluticasone (Flixotide - Orange)

Steroid inhalers are often used in combination with a long-acting beta-agonist. A steroid inhaler may not have much effect on your usual symptoms but may help to prevent flare-ups (exacerbations). Steroid inhalers are referred to as preventers. Side effects of steroid inhalers include oral thrush, sore throats, and a hoarse voice. Rinsing your mouth thoroughly with water after use can reduce this. Combination inhalers are often used containing a steroid and a long-acting beta-agonist; these include:

- Fostair (formoterol and beclomethasone)
- Seretide (salmeterol and fluticasone)
- Symbicort (formoterol and budesonide)

# Triple Therapy Inhalers

These include an inhaled steroid and two long acting bronchodilators. These include:

- Trelegy Ellipta, (a dry powder inhaler) that requires the person to be able to take strong breathe in for it to work
- Trimbow which is a metered dose inhaler (spray) which can be used with a spacer



# Bronchodilator Tablets

Bronchodilator medicines open-up the airways, theophylline is a bronchodilator medicine that is often used, and some brand names for these include:

- Nuelin
- Slo-Phyllin
- Uniphyllin Continus

Aminophylline is a similar drug; some brand names include:

- Norphyllin
- Phyllocontin Continus

Aminophylline may also be given intravenously (into the vein) whilst in the hospital.

The body breaks down theophylline in the liver. This varies between individuals, causing the blood levels of the drug to vary. It can vary, in particular in smokers or those with other conditions. Blood tests are done to measure the amount of theophylline in the blood to check that the level is not too high or too low. Theophylline interacts with many other medicines, so not everyone is prescribed the drug. It also has some common side effects, such as:

- Palpitations (feeling of a fast heartbeat in the chest)
- Nausea (feeling sick)
- Headache
- Occasionally abnormal irregular heartbeat (arrhythmia) or even convulsions (fits).



# Mucolytic Medicines

A mucolytic medicine such as Carbosisteine, makes the mucous/sputum less thick and sticky and easier to cough up, making it harder for bacteria (germs) to infect the mucus and cause chest infections. It must be taken regularly (usually two or three times daily).

## **Steroid Tablets - Prednisolone**

During an exacerbation, a short course of steroid tablets called prednisolone is prescribed; this helps reduce any extra inflammation in the airways. This extra inflammation is usually caused by infection. You will usually be told to take between 6-8 daily for seven days, then to stop; sometimes, you may be required to reduce the dose daily and then stop. Some may have a maintenance dose of steroids, but it is often only used if needed due to the side effects of the steroids.

Some of these side effects include:

- Osteoporosis (thinning of the bones due to reduced bone density),
- Low immunity
- Weight gain

# Antibiotics

A short course of antibiotics is commonly prescribed if you have a chest infection. An indication of infection can be increased sputum production, thickness, and change in colour. It is important to complete the whole course of antibiotics for them to work effectively.

Sometimes long term antibiotics may be prescribed to prevent an infection, these can include azithromycin.



# Nebulisers

When very breathless, it may be impossible to use an inhaler. Nebulisers are machines that turn the bronchodilator medicines in inhalers into a fine mist, like an aerosol. The aerosol is breathed into the body using a facemask or a mouthpiece. Nebulisers are no more effective than normal inhalers, but they are useful in very fatigued people (tired) with their breathing.



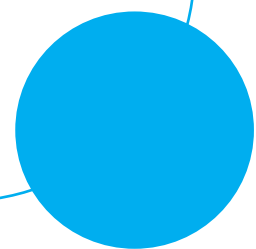
# Oxygen

Oxygen may be required at some stage, during an exacerbation, in the hospital or as a long term therapy. Oxygen is a drug, and too much oxygen can be just as harmful as insufficient oxygen in the body. A person being considered for oxygen would be asked to attend an oxygen assessment clinic to test their need for oxygen. A blood test checks the level of oxygen within your blood. If it is decided that Long Term Oxygen Therapy (LTOT), is required to be used for a minimum of 16 hours a day.

The oxygen is given via a nasal cannula or facemask and by a machine called an oxygen concentrator. Insufficient oxygen levels within your blood puts pressure on the right side of the heart, giving additional oxygen reduces this pressure. It is, however, important not to give too much, which is why a respiratory specialist will carry out a full oxygen assessment.

# Recommended Vaccinations

- Flu Jab
- Pneumonia Jab



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