

What is an oxygen concentrator and how does it work?

(Usage and reasons)

Oxygen Concentrator

Thanks to the great advances in the medical industry, oxygen concentrators today are compact, small, quiet and lightweight, while still providing maximum compliance and high performance.

Today you can choose the most suitable oxygen concentrator, portable or stationary, the model that best suits you in terms of power and weight transfer (POC).

What is an oxygen concentrator?

Oxygen Concentrator Definition: An oxygen concentrator is a type of medical device used to deliver oxygen to people with respiratory problems. People whose blood oxygen levels are lower than necessary for life need an oxygen concentrator to enrich this oxygen.

In Europe, you can buy an oxygen concentrator without a prescription. However, this should be recommended by your doctor after a complete medical examination of the patient. Doctors also usually show and explain to patients how to use oxygen concentrators effectively.

Oxygen concentrators filter the ambient air, compressing it to the desired density, and then deliver the purified medical oxygen to the patient using a pulsed dose delivery system or continuous flow system.

The oxygen concentrator is also equipped with special filters and screens that help remove nitrogen from the air to ensure that fully purified oxygen is delivered to the patient. These devices also have easy-to-use electronic controls to adjust the oxygen concentration and delivery parameters. Then you inhale oxygen through a nasal cannula or a special mask.

Oxygen concentrator capacity is usually measured in LPM (liters per minute). Your doctor will determine the oxygen level you need, which may vary during rest, sleep, and physical activity.

What is an oxygen concentrator for?

There are many reasons for using an oxygen concentrator, and doctors can recommend oxygen therapy to their patients for a variety of medical conditions. Usually, the lungs absorb oxygen from the air, transferring it to the blood.

If you have recently had blood tests or pulse oximetry to check for oxygen saturation and have been found to have low blood oxygen levels, your doctor may recommend short-term or long-term oxygen therapy.

You are probably wondering who uses an oxygen concentrator? In acute conditions, short-term oxygen therapy is usually required. These conditions usually last for a short time. They may have sudden symptoms compared to chronic conditions in which the disease progresses gradually. However, some respiratory or chronic conditions require long-term oxygen intake.

Oxygen concentrators are essential in acute conditions.

Some examples of acute conditions for which you should use an oxygen concentrator for short-term oxygen therapy:

Asthma: In this condition, the airways become inflamed and produce a lot of mucus, making breathing difficult. Although there are several pharmaceuticals that can treat and control asthma, an oxygen concentrator can pump high levels of oxygen into a patient's blood when they have or have had an asthma attack.

Pneumonia: Pneumonia is an infection in which inflammation develops in one or both of the air sacs in the lungs, which in many cases fills with fluid. Many pneumonia patients have received oxygen therapy and are doing well.

Respiratory Distress Syndrome (RDS): RDS is a respiratory disease that mainly affects newborns, especially those born six or more weeks before the date of birth. Newborns with RDS do not produce enough surfactants (lung fluid) to destroy the lungs and make them harder to breathe. Oxygen therapy using oxygen concentrators helps pump oxygen into the baby's blood and lungs to reduce possible future complications.

Bronchopulmonary dysplasia (BPD): Newborns with RDS are also at higher risk of developing BPD. This is a serious lung condition that requires long-term breathing support.

In some cases, you may need oxygen for a short time after surgery.

Chronic diseases requiring oxygen therapy

Some chronic conditions that require prolonged use of an oxygen concentrator:

Chronic obstructive pulmonary disease (COPD): COPD affects approximately 16 million people, but an oxygen concentrator can be an effective treatment. When you have COPD, you have chronic lung damage that makes it difficult for your lungs to absorb enough oxygen. As a result, you may have difficulty breathing, and oxygen therapy with a concentrator may help.

Cystic fibrosis: You inherit this life-threatening condition. This causes damage to the digestive system and lungs. This is a rare disease that affects the cells in the body that produce mucus, sweat, and digestive juices.

Sleep apnea: Sleep apnea is a condition characterized by a sudden stop of breathing during sleep (for 10 seconds or more) and associated with a rapid decrease in oxygen levels in the body. It can affect people of all ages, even children. Treatment for this condition usually includes continuous positive airway pressure (CPAP), weight loss, exercise, and oxygen therapy.

How does an oxygen concentrator work?

Think of an oxygen concentrator as an air conditioner - it absorbs air, purifies it, and delivers it to another form. The oxygen concentrator absorbs the air and purifies it for use by people who need medical oxygen due to low blood oxygen levels.

It works:

Air compression as a cooling mechanism prevents the concentrator from overheating

Air intake from the environment

Use the electronic interface to configure delivery parameters

Removing nitrogen from the air through sieves and filters

Delivery of purified oxygen through a mask or nasal cannula

Patients who previously required oxygen therapy relied primarily on pressurized oxygen tanks. While these reservoirs are extremely effective, they are also quite ineffective, as providers must visit patients regularly to replenish oxygen cylinders.

Find out more about the oxygen concentrators available to you at solano-labs.com:

1. **The Solano Piccolo™ Portable Oxygen Concentrator** with a continuous flow of 93% oxygen per liter per minute is a convenient oxygen concentrator with accessories and features specifically designed for an active lifestyle. It is equipped with a modern electronic digital display.
2. **The Solano Lumino™ Home Stationary Oxygen Concentrator** with a continuous 93% oxygen flow of 5 liters, provides a constant high level of oxygen for home use. It is one of the most compact and lightweight stationary concentrators, providing continuous flow up to five liters per minute. This model can be used by two users at the same time.
3. **Oxygen concentrator Solano Spring™** for professionals, doctors and home use with a constant flow of 93% oxygen at a rate of 10 liters per minute. oxygen concentrator that is versatile and ideal for the active user. This model can be used by two users at the same time.

However, when comparing prices and specifications, we recommend the Solano Lumino™.

We recommend that you consult with a specialist to select the most suitable oxygen concentrator.

We hope we helped you choose an oxygen concentrator.

See www.solano-labs.com for details on each model.