

## APAP Machines

### Features and Options

#### What is an APAP Machine?

An APAP machine is a special type of CPAP device that delivers therapy air at varying pressures based on your breathing, instead of blowing at one consistent pressure. It stands for "Automatic Positive Airway Pressure", and adjusts the pressure based on your breathing. So as your needs change during the night, the APAP machine adjusts the pressure so that your therapy is always where it needs to be.

APAP machines are used to treat Sleep Apnea. Sleep Apnea is a serious medical condition in which a person's airway becomes blocked during sleep, due to the relaxation of the tongue and muscles of the throat while asleep. The APAP machine uses a powerful and quiet motor to pressurize the air you breathe, acting as an invisible splint that opens the airway so that air can reach your lungs. This, in turn, lowers your blood pressure and puts you at less risk for heart attack or stroke.

#### Benefits of APAP Machines

When used regularly, APAP machines can:

- Reduce Daytime Tiredness While Driving or Bored
- Help Clear Up Brain Fog
- Improve Cardiac Health
- Reduce Snoring
- Improve Energy Levels
- Provide Longer, More Restful Sleep

## APAP Features Explained

If you're a little confused by some of the terms we use on our comparison chart, that's ok. We've added detailed explanations for these items in the section below. Simply scroll through the list and look for the feature you have a question about. Features are listed in order of appearance.

## Manufacturer

This is who makes the machine. Most of our machines come from the following manufacturers: ResMed, Philips Respironics, Fisher & Paykel, Human Design Medical, DeVilbiss, and 3B Medical. There's no one manufacturer that's "better" or "worse" than another, as many of these companies make machines that are designed for different needs.

You may find that for your situation, a Philips Respironics machine makes more sense for you than a ResMed machine or vice versa. The most important thing to be clear on is what needs are most important for you, and evaluate based on whether or not your device solves that issue.

For example, if getting a quiet machine is most important to you, then you'd start your search by looking at the decibel rating, and then consider other factors. If travel is most important, you'd start looking at our travel machines, and so on and so forth.

## Type

On the [APAP Machines Comparison Chart](#), the type default is APAP. When we say "type" we mean: APAP (AutoSet, Auto CPAP, Auto PAP), CPAP, or BiPAP (BiLevel). Here's a quick breakdown of what the different types mean:

- APAP Machines - Automatically adjust CPAP therapy pressures based on need.
- CPAP Machines - CPAP therapy at only one pressure
- BiPAP Machines - Delivers one pressure on inhale, and a different pressure on exhale.

The type of machine you shop for is going to depend a lot on what your doctor thinks is best. If you have a prescription for a CPAP machine, you can choose between an APAP machine and a CPAP machine, but not a BiPAP machine.

If you have a prescription for an APAP machine, you can only get an APAP machine. You need a special prescription to buy a BiPAP machine. A prescription for a CPAP machine cannot be used to buy a BiPAP machine.

If you have questions about what kind of machine you should be shopping for, you should consult your doctor first.

## Warranty

This is the length of time the manufacturer will replace or repair a machine due to defects or problems. Warranties don't usually cover loss or damage due to accidents, misuse, or abuse. You should check with CPAP.com if you feel your CPAP machine has a warranty issue.

## Sound Level

This is how loud the machine is, measured in decibels. The smaller the number listed here, the quieter the machine is. Machines under 30 decibels are considered to be whisper quiet.

## Quiet

Is the machine considered to be a quiet machine? If the machine checks in below 30 decibels, we consider it to be a quiet machine. If not, it's rated "No" on the [APAP Machines Comparison Chart](#).

## Manuals Included

There are 2 main types of manuals: Clinical and Patient Manuals. User Guides are also common as well. The differences between clinical manuals and patient manuals are primarily focused on the information they provide.

Clinical manuals show the reader how to do things like set the therapy pressure and provide information that would be helpful to doctors. Patient manuals show how to get the most out of the machine, and how to use the basic features.

Patient manuals don't show you how to change the therapy pressure, and it's not recommended that you try to do this on your own.

## Dimensions

Most of these are pretty self-explanatory, with a few notable exceptions. We'll cover those features now:

- **Machine Weight:** This is the weight of the machine itself, without the humidifier or any other accessories.
- **Entire Weight:** This is the weight of the machine and the humidifier if it has one available.
- **Entire Size:** These dimensions are of the machine with the humidifier, if there is one available.
- **Entire Package Size:** The size of the machine and all components, including the optional humidifier in the travel bag.
- **Machine Size Only:** The size of the machine without the humidifier (for machines with optional humidifiers available).

**Note:** Machines that have no humidifier available may have "N/A" listed because some dimensions require a humidifier.

## Humidifiers

Humidifiers are very important for APAP machines because they help relieve symptoms like a dried out nose and throat. Without humidification, you may notice a high degree of discomfort upon waking up in the morning. For many people, humidifiers are far worth the investment in terms of making your APAP therapy a success.

**Heated Humidifier:** This section outlines which, if any, heated humidifier works with the given machine. Some machines come with a humidifier already built in as part of the design, also known as a "built-in" humidifier, while others have an integrated humidifier that can be attached or detached as needed. Machines that have no direct heated humidifier options are marked as "No" on the [APAP Machines Comparison Chart](#).

**Built-In Humidifier:** As stated in the section above, the question asks whether or not the machine comes with a humidifier pre-installed as part of the machine. If it does, you'll find a "yes" in the box on the [APAP Machines Comparison Chart](#), otherwise a "no". If it doesn't have a built-in humidifier, that's not necessarily going to be a negative for that machine.

Many machines that have integrated humidifiers will have a lower cost, and when you add on the additional cost for the humidifier it works out to be similar to the cost of the machine with the built-in humidifier.

**Ambient Rainout Reduction:** Rainout is the formation of condensation inside the hose, created as the air cools on its way from the machine to the mask. Rainout is a byproduct of having a heated humidifier and creates unwanted water that can be an annoyance during therapy.

This section is basically asking "Does the machine provide a way of preventing rainout as part of the design?" If the design has a system, it's listed by name here. If it doesn't, it simply says "No."

**Integrated Heated Hose:** A heated hose is another way of helping contain rainout, and some machines are designed to work with a brand-specific heated hose (one that doesn't need a separate power supply). This is known as an integrated heated hose, and if one exists, we list what it's called. If the machine doesn't have this option it just says "no" on the [APAP Machines Comparison Chart](#).

**Humidifier Water Capacity:** This is the maximum amount of water the humidifier chamber can safely contain, listed in milliliters. A larger tank will last longer, but larger doesn't necessarily mean "better". All humidifier chambers should last roughly one night, and it would be unusual for a humidifier to last longer than one night. It's recommended that you refill the tank each night anyway, to help prevent the growth of bacteria and mold.

## Pressure Features

Pressure features can be confusing to sort out, especially if you're new to CPAP therapy. After all, don't you need pressure to treat Sleep Apnea? But sometimes too much pressure can be uncomfortable and get in the way of a good night of therapy. Luckily for us, CPAP manufacturers have developed technologies that can give you the right amount of pressure as you need it without making it difficult to exhale.

Some machines have this technology while others don't. This is just one example of pressure technologies that you may find on a good APAP machine. We'll go over each feature and explain what it is.

**Auto Pressure Adjustment:** This feature is answering the question: "Is this an APAP machine or not?" Remember, APAPs have the ability to automatically select the pressure you need for therapy, so that's what we mean by the term "Auto Pressure Adjustment". CPAP machines, on the other hand, can't do this.

**Pressure Range:** This is a description of the therapy pressures that the machine operates between. It's standard among APAP and CPAP machines to operate at pressures between 4 - 20.

The APAP machine varies in the pressure it can choose, with the default range usually being the widest at 4 - 20. BiPAP machines, on the other hand, can operate at pressures between 4 - 25.

It's important to note that BiPAP machines are distinct machines for a distinct purpose, and should not be thought of as a "better APAP".

**EPAP Pressure Relief:** This feature is typically found on BiPAP machines which provide an "Expiratory Positive Airway Pressure". Since all of the machines on the [APAP Machines Comparison Chart](#) are APAP machines, you won't see this feature. EPAP Pressure Relief is meant to make it easier to exhale by lowering the pressure on exhale so that you're not trying to exhale against the higher pressure.

**Easy Breathing:** Easy breathing is a feature that lowers the pressure used in therapy so

that you're not fighting to exhale (or inhale). You can get the pressure assistance on exhale, inhale, or both. Different manufacturers have different names for their easy breathing features and use names like A-Flex, C-Flex, EPR, ZBreathe, etc. The names may be different, but they all refer to roughly the same thing.

**Ramp:** Ramp is a feature where therapy pressure starts at almost the lowest setting, and gradually increases over the span of 45 minutes to the pressure needed for therapy.

This is a comfort feature designed to make it easier to fall asleep. In many cases, ramp will not be needed for an APAP machine since they operate between a range of pressures, meaning it will stay at a lower pressure until the user falls asleep.

**CPAP Mode:** This is a feature that allows you to change a setting that forces your APAP machine to function like a CPAP machine, blowing at only one set pressure throughout the night instead of variably selecting a pressure based on need. Not all devices have the ability to do this. If the device has a CPAP mode, it will be marked "yes" in this box found in the [APAP Machines Comparison Chart](#).

**Leak Compensation:** This is a feature in which the machine can detect mask leaks and adjusts to maintain pressure. The feature is listed on the [APAP Machines Comparison Chart](#) as a simple "Yes/No", marked "yes" if the machine has it and "no" if the machine doesn't.

**Max Operating Altitude:** The higher up in the atmosphere you go, the thinner the air is, making it more and more difficult to pressurize the air to therapeutic levels. There comes a point in every elevation where CPAPs can no longer work as designed.

This altitude is the maximum elevation that the CPAP can function. The only exception is air travel. Airplanes have pressurized cabins making it possible to use a CPAP machine on a plane, despite the fact that some airplanes fly at 40,000 feet or more--well beyond the maximum altitude of the stated device.

## Power Features

Power features cover everything related to batteries and power! We cover everything

from battery failover systems to the machine's ability to connect to power outlets around the world! Make sense of these features using the section below!

**Direct Battery Operation:** This aims to answer the question: "Does the machine have an input for a charging cable directly from a DC source (like a cigarette lighter plug adapter in a car)?" Some machines allow you to plug directly into the cigarette lighter of a car or boat by using a cable that connects to the cigarette lighter, without needing to use an inverter.

If the machine has this type of input, the box on the [APAP Machines Comparison Chart](#) is marked "Yes". If it doesn't the box is marked "No".

**Voltage Range:** In the United States, the electrical current that comes out of the wall is only 110 volts. In other countries, the electrical current comes out of the wall at a much higher voltage than the US. In Europe, for example, the electrical current coming out of the wall is rated at 220 volts, which is almost double what it is in the US.

If an electronic device is only designed to work in the US, plugging it into a socket in Europe will fry the machine. Most CPAP machines sold by CPAP.com operate from 110 - 240 volts, meaning you can safely use it in the US and other countries (plug adapters may be required) and the machine will not be at a risk for loss due to the voltage difference.

**Optional DC Cable:** Some CPAP and APAP devices have an optional DC cable that you can purchase that allows you to plug directly into a DC source, usually through the cigarette lighter on a car. The DC cable plugs directly into the machine, allowing you to use the machine while traveling in a car or boat without needing to use any other device.

**Integrated Battery:** An integrated battery pack is primarily used as a backup as it connects to the machine and functions seamlessly with the machine. In the event of a power outage, the battery kicks on and powers the machine.

## Software Features

Many machines have a way of providing data back to the user so that the user can track



their therapy progress. Examples of information that are provided include things like AHI (which measures how severe your sleep apnea is), tracking mask leaks, and displaying the usual operating pressure for most of your sleep.

Sometimes this data can be exported to a personal computer, allowing you to see more advanced statistics about your sleep. This can be done using an SD card that you can get for your machine, which you can then transfer to your computer. The optional software mentioned here is often manufacturer specific.

For example, ResMed software wouldn't work on a Philips Respironics machine and vice versa. Because this section is fairly self-explanatory, we won't go into details here.

## Additional Features

This section is a miscellaneous collection of features that do not fit into any one particular category. As some of these features can be confusing, we'll go over each one.

**Auto Altitude Adjustment:** In order for a machine to function at a higher altitude, the machine has to first recognize that the altitude has changed, and then adjust. Sometimes the adjustment has to be done manually in the machine settings, while at other times the altitude adjustment is done automatically. In this [APAP Machines Comparison Chart](#) "Yes" indicates the machine will automatically adjust, while "No" means it will not and may have the option to adjust manually.

**Auto On/Off:** Auto On/Off detects when you start breathing and then activates the machine and it begins to run, without needing to touch anything. The machine will automatically turn off when you take off the mask.

**Mask Off Alert:** A warning to the user in the form of a sound or message on the LCD screen that the mask has excessive leaks, or that the user has removed the mask entirely.

**Spontaneous:** This is a feature only found in BiPAP machines. It's a pressure feature designed to change the pressure based on the exact moment the user takes a breath.

**Timed:** This is also a feature only found in BiPAP machines. We mean that the machine provides a customizable backup rate that forces the machine to switch from inhale to exhale. As this document is meant to compare APAP machines, we won't go into detail here.

**Designed for Her:** Lately there's been a push by APAP manufacturers to make masks and devices that are specially designed to meet a woman's needs when it comes to PAP therapy.

These manufacturers recognize that women have a unique set of needs and concerns, and likewise build machines that satisfy those needs. There are slight differences between the original version of the machine and the "for Her" version, that would be noticeable to female customers.

**Backlit Display:** This feature answers the question: "Does the machine feature backlighting for the screen?" Backlighting is a feature designed to make it easier to see the screen in the dark.

**Backlight Shuts Off:** Does the backlighting automatically turn off? If the answer is "yes", the box in the [APAP Machines Comparison Chart](#) is marked yes.