

Sleep Review

[Sleep Disorders](#) ▾ [Sleep Diagnostics](#) ▾ [Sleep Treatments](#) ▾ [Sleep Health](#) ▾ [Practice Management](#) ▾

[Edition Archive](#)

The V-Com, 'Training Wheels for CPAP,' Aims to Increase CPAP Adherence By Softening Inspiratory Flow

Aug 1, 2022 | Breathing Disorders, CPAP & PAP Devices | 0  | ★★★★★



Paid for by SleepRes

Sleep physician William H. Noah, MD, founder and CEO of V-Com marketer SleepRes LLC, explains how he incorporates the CPAP comfort device into his own practice and the differences he has seen with sleep apnea patients.

UPCOMING EVENTS

Sleep Professionals of Alabama Conference

August 4 - August 6

Pediatric Airway Screening in the Practice

August 4

ProSleep 2022

August 18 - August 20

Mini Residency – Sleep-Related Disorders & Craniofacial Pain (S)

September 9 - September 10

New England Polysomnography (NEPS) Conference 2022

September 29 - September 30

[View All Events](#)

William H. Noah, MD, has been focused on CPAP therapy adherence for his entire sleep medicine career.

“As a private practice physician, what you want and all that you can control are your own outcomes,” says Noah, who is boarded in sleep and internal medicine. “Adherence has always been my focus because if patients don’t wear their devices, then it’s all a waste of time and money.”

To that end, Noah’s practice was an early adopter of **wireless modems** to transmit CPAP adherence data. He was recently part of a published investigation to determine whether there are differences in adherence among patients whose devices were dispensed by a traditional durable medical equipment (DME) supplier **versus those provided directly by an integrated sleep practice**. And when Noah found himself holed up in his sleep research lab for hours on end at the height of the COVID pandemic, he decided to take the challenges of CPAP adherence into his own hands. “Instead of just trusting the manufacturers, I decided to look behind the veil myself. What I found were some incredible opportunities to improve therapy and improve adherence,” he says.



William H. Noah, MD

The V-Com—a CPAP accessory whose tagline is “**training wheels for CPAP**”—is the first of those opportunities brought to market. The V-Com’s purpose is to provide CPAP comfort and improve early adherence, which it does by softening peak inspiratory flow of positive airway pressure (PAP) devices.

The V-Com comfort accessory does not change expiratory pressure. And, according to SleepRes’ testing on CPAPs, APAPs, and BiPAPs, it does not impact the recording of the apnea-hypopnea index or a device’s algorithm. “What’s key is that the alternatives to the V-Com all involve turning the pressure down, which can increase respiratory events. Plus, that means the patient has to call a doctor to get an order to turn it down and then sometime in the future, the patient will need a separate order to turn it back up. This causes delays in therapy. By contrast, the V-Com is a comfort accessory designed to be there at the beginning as you’re trying to get patients acclimated to CPAP.”

The V-Com is registered with the US Food and Drug Administration (FDA), allowing Noah to use it with obstructive sleep apnea patients at Sleep Centers of Middle Tennessee, where he is medical director. Sleep Centers of Middle Tennessee sets up more than 100 patients on positive airway pressure devices each week, and each gets a demonstration of the V-Com and is then provided one if they want it for their at-home APAP titration and use. So far most patients are preferring setup with the V-Com. For patients who are titrated in the lab, sleep clinicians watch for signs of anxiety and then offer the V-Com if they suspect it will help. “It’s pretty dramatic,” Noah says. “If a patient’s eyes start getting big, we pop the V-Com in, and they usually calm down.”

At home, patients can easily plug the V-Com into their CPAP setup themselves. “It’s just a little adaptor that you put in between the hose and

the mask,” Noah says. It comes with a resealable pouch so patients can travel with it too.

Noah, who is now also founder and CEO of SleepRes LLC, marketers of the V-Com, describes the time working in his sleep research lab as “the most fun I’ve had in my whole career and certainly the most fulfilling experience of it.”

Noah shared more details of the development, use cases, and the future of the V-Com and CPAP therapy adherence via a video-interview with *Sleep Review*. This transcript of the interview has been lightly edited for clarity and editorial style.

The V-Com softens peak inspiratory flow of positive airway pressure devices. How does this change the feel of CPAP therapy for patients?

When patients start positive airway pressure therapy, particularly for treating sleep-disordered breathing or sleep apnea, in a sense they have to learn to breathe backwards.

During typical breathing, you’re actively inhaling, and then you relax and passively exhale. But let’s say I put you on 15 centimeters of CPAP and I pharmacologically sedated and paralyzed you, the CPAP machine would inflate your lungs and hold them there—it would hold the lungs distended. That illustrates the fact that when you go on CPAP, you’re actively having to resist the pressure forcing the air in.

That is what is really the most difficult thing about starting CPAP. The inspiratory pressure is what’s offensive to so many patients. V-Com decreases the inspiratory pressure, and it also changes the curve of how the air comes in to make it softer.

SleepRes describes the V-Com as “training wheels for CPAP.” What do you mean by that analogy?

When you first get on a bike, many people have trouble balancing themselves. By having the training wheels, many people can learn to ride a bike more quickly. Then after a while you can balance yourself, and the training wheels become something you don’t really want.

V-Com, by knocking down that inspiratory pressure initially, allows more people to tolerate CPAP right off the bat, have more initial usage, and feel better right away. Then after a certain period of time, like with training wheels, you may not need it.

On average, how long does a patient need to use the V-Com before the “training wheels” come off?

In the package insert, we recommend that once a patient is tolerant and doing well, V-Com could be removed. But what we’re finding now that we’re able to put it on a good number of patients is that a lot of them don’t want it removed. They like its feel.

But others who are already used to the feel of their CPAP may not like the V-Com because they may feel like they’re not getting the air as fast as what they are used to.

Breathing is a very sensitive and emotional thing to people and any change in how that feels can cause anxiety. That’s what CPAP does to people when they start, and the V-Com helps relieve some of that anxiety.

What patients are most likely to benefit?

In general, anyone new to positive airway pressure therapy is going to benefit because it’s going to make it easier. For instance, even if you have excellent balance, the training wheels are going to help you learn to ride a bike more quickly. Similarly, even if you can tolerate the pressure, having

that lower inspiratory pressure right off the bat is going to make it more comfortable.

Someone who tends to be thin or have a lower body mass index, they're going to do better with the V-Com because the CPAP pressure is going to impact them more than a heavy person who's got decreased chest compliance. Of course, anyone needing higher pressures will be helped by the V-Com as well—because it's easier to get used to 6 centimeters of pressure than it is to get used to 16. (If I had a taller bicycle, the training wheels would even be more useful than with a short bicycle.)

Other people who we have been finding to benefit are those dealing with leak. The V-Com helps because by knocking the inspiratory pressure down, it also decreases leak.

In a [survey of sleep professionals](#) who tried out the V-Com at SleepRes' SLEEP 2022 booth, 96% said they believe the V-Com will help patients struggling with CPAP and 92% believe the V-Com will improve CPAP adherence with new patients.

How is the V-Com different from built-in PAP pressure relief algorithms?

This is the most common question I get, and it's typically phrased as: Does V-Com work like C-Flex (Philips) or EPR (ResMed)? The answer to that is no. Those built-in features reduce expiratory pressure, not inspiratory.

The V-Com preserves expiratory pressure but reduces inspiratory—and that's what's unique and not ever been available before.

The other question I get frequently is, "Can't you just turn the pressure down for the same effect as V-Com?" But if you turn the pressure down, then you're decreasing both inspiratory and expiratory pressure while increasing the likelihood of respiratory events. The V-Com decreases the inspiratory, the offending pressure, but it preserves the therapy of the expiratory.

How is V-Com different from the built-in PAP ramp settings?

A ramp starts the user at a lower inspiratory and expiratory pressure. If you use the V-Com and the ramp, the ramp would continue to go up but the V-Com would continue to keep the inspiratory pressure lower than what the ramp thinks it's delivering, which provides comfort.

What about bilevel devices—do they have a setting to decrease inspiratory pressure only?

No, they don't. No positive airway pressure device has a feature to drop inspiratory pressure only.

Have any patient side effects of V-Com usage been identified?

No. The V-Com is added resistance to the circuit that the machine doesn't know is there and therefore the machine can't compensate for it. That's how the V-Com provides the comfort. But the resistance that we're adding to the system with the V-Com is not unique. It's just the placement of the resistance that's unique. For instance, CPAP masks and CPAP nasal cushions add resistance at different levels. So, if you use a Philips mask with a ResMed machine, or vice versa, you've just changed the intended resistance. Or if you use 10-foot tubing instead of 6-foot tubing, that also changes the resistance. It gets more complicated, and I can go on and on about things that change CPAP resistance, but at the end of the day it's the pressure in the pharynx and the chest that determines therapy, not the pressure delivered to the face.

What we're doing with the V-Com is allowing the clinician to take back control of the circuit. For instance, in the intensive care unit (ICU), no

manufacturer or anyone else is going to tell a clinician how to set up the ventilator, including how much dead space and how much resistance to have. But with CPAP, we tend to order CPAP and say something like, "Okay, we'll put them on 12 centimeters." But in the ICU, you would never do that; you would manage every little aspect of it.

A CPAP machine is a vent. By not just focusing on pressure, but looking at resistance and flow, we can make it more comfortable and actually safer. The V-Com is just the tip of the iceberg of what we plan to release of what we've developed to make CPAP a more comfortable, safer, and more effective treatment over the next year.

Beyond the benefit of a lower peak inspiratory flow, there is some emerging evidence of other potential benefits. Can you discuss any of these?

The V-Com is an accessory for comfort. It doesn't make any clinical or therapeutic claims.

What has been exciting is that since we released it—since it met US Food and Drug Administration (FDA) requirements to be registered—we're finding out some really cool things it might be doing in addition to just providing comfort.

At Sleep Centers of Middle Tennessee, we completed several case series and are beginning trials investigating V-Com. In addition, some trials are being initiated with third parties as well. Once completed, we plan to publish data as white papers and in peer-reviewed journals and present the data to the FDA if we think we have a case for adding therapeutic claims.

After I'd been playing with the V-Com's development for about a year, a manufacturer executive who was in my lab was the first to point out that the CPAP was much quieter when the V-Com is in the circuit. We got out a decibel meter, and the drop in sound was quite significant. It makes sense because if you're knocking down that need for that motor to rev up during inspiration, then you decrease that whining sound of it as you breathe in. We are now doing independent analyses to look at the effects of that.

We've also got a trial going on right now where we're putting the V-Com in the circuit instead of bringing in a chin strap for people having trouble keeping their mouths closed. So far 14 out of 19 chin straps have been avoided. Now I want to get an independent lab to do a similar investigation.

While testing the V-Com with a variety of manufacturer's devices to ensure it would not impact algorithms (which it does not), we saw that V-Com decreased the leak in the patients by almost half. And these are patients who were already adherent to CPAP. That discovery was with only 20 patients, so now we're starting a more formal trial with 60 patients to investigate that further.

We are also investigating the impacts of V-Com on **treatment-emergent central sleep apnea**. It's an idea I had last November but could only begin to test now. I am really excited about this and will have a lot more to present in a few weeks.

Speaking of trials, what evidence can you share regarding V-Com helping patients adhere to CPAP easier or faster?

Again, the V-Com is an accessory for comfort. It doesn't make any clinical or therapeutic claims at this point.

We are now beginning trials of adherence. With the CPAP shortage and the lack of connectivity of some of the new devices [due to computer chip shortages], we were unable to do the trials right at launch about six weeks ago.

We are now looking to obtain some immediate answers via a crossover trial (where patients serve as their own controls). Let's see if they are wearing their CPAP and using it more on the nights and having fewer problems when the V-Com is in the circuit. These trials are very important.

What about any trials with patients who are already struggling with or have failed their CPAP?

There are a lot of things in medicine that'll never be tested because you can't have a control group. But when you have something that has no risk, like the V-Com, and a patient says, "Well, I can tolerate this with the V-Com and I can't without it," what are you going to do? You are going to put the V-Com in.

With new patients and adherence, I think that's important information to test. But for someone who is struggling with CPAP and has already invested all this money [for their sleep test, device, follow-up visits], and they can't handle CPAP and you try the V-Com in their circuit and they go, "Hey, this feels better. Let me try this," are you not going to give it to them?

It is not going to fix everyone who's struggling; it depends why they are struggling. I think the V-Com is another arrow in the quivers of the providers and DME companies to try to improve CPAP adherence.

CPAP accessories typically don't get any kind of third-party reimbursement. What do you see as the V-Com's return on investment for a sleep medicine business? Feel free to address its wholesale and retail costs as well.

The cost to the patient is not clear because we have manufacturers who are discussing providing it to every new patient. We also have DME companies who are discussing just providing it to every new patient because the [wholesale] cost is so low. Then we have others who are looking at selling it to patients. Certainly every struggling patient should get one. The retail cost will likely be around \$30, with wholesale being much less.

But, as one DME told me, if it decreases one phone call, then the V-Com paid for itself. In our survey at SLEEP 2022, 84% of sleep professionals believe the V-Com will decrease phone calls to their offices as well as to the medical equipment companies' offices. What's more, for a national DME, an increase in adherence of 1% could be worth a million dollars.

Also, in the past if someone struggles with CPAP, typically they are prescribed BiPAP—so they go from a ~\$1,000 device to a ~\$2,000 device. By trying the V-Com first, you're giving them an accessory that may even be free to the patient, and the patient may not need a BiPAP after all.

For each company—whether a manufacturer, a DME, a medical practice, a sleep lab—I think they have to work out what that value is for them. But the goal of clinicians, manufacturers, and DMEs are all the same: They all want long-term adherence. That's what the V-Com is trying to do, improve long-term CPAP adherence by providing comfort initially at the onset of therapy.

V-Com Fast Stats

- **Positive airway pressure device/mask compatibility:** The V-Com has been tested on all CPAP machines and interfaces. A summary of results can be found in the [clinical FAQs](#). The V-Com will work on all pressure settings. There is no minimum or maximum; it is dependent on patient comfort level. Since the V-Com takes advantage of the turbulent flow in the device circuit, it has its maximum effect at higher pressures. The V-Com comes in one size, but its effects are additive with multiple V-Coms

inline. It has been tested with up to 3 devices inline. The V-Com has not been tested with the more advanced algorithms, so it is not recommended for use with ASV and AVAPS.

- **Estimated useful life:** Single-patient, multi-use. It is durable and will last for the life of the positive airway pressure device.
- **FDA status:** Registered with the FDA as a type 1 (A) device.
- **How to clean:** Use soap, water, and a small brush.
- **To order:** [How to Order – SleepRes](#) or email Kami Harold, [kharold\[at\]sleepres.com](mailto:kharold[at]sleepres.com)
- **Questions?:** [Contact Us – SleepRes](#) or email [kharold\[at\]sleepres.com](mailto:kharold[at]sleepres.com)

This content is paid for by:



Partner with Sleep Review on content development.

SHARE:      

RATE:

< **PREVIOUS**

[Camp for Children with Narcolepsy Aims to Connect Families](#)

RELATED POSTS



In China, Dehaier Medical Systems Sleep Respiratory Systems Adopted by 30 New Clients

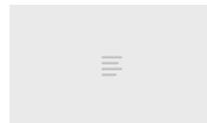


4 Patient Populations for APAP

March 15, 2016



FDA to Philips: Safety Risks May Exist with the Replacement Foam for Recalled



Philips Introduces Partners in Training Web Site

April 18, 2012

November 6, 2014

Devices

November 17, 2021

Leave a reply

Logged in as Sree Roy. [Log out?](#) Required fields are marked *

COMMENT



POST COMMENT

SEARCH ...

MEDQOR INFORMATION SERVICES NETWORK

24x7

Axis Imaging News

Clinical Lab Products

Hearing Review

Orthodontic Products

Physical Therapy Products

Plastic Surgery Practice

Rehab Management

RT: For Decision Makers in Respiratory Care

Sleep Review

RESOURCES

[Edition Archive](#)

[Featured Reports](#)

[Podcasts](#)

[Webinars](#)

[White Papers](#)

HELPFUL LINKS

[Marketing Solutions](#)

[Subscribe](#)

[Submit an Article](#)

[Editorial Advisory Board](#)

[Contact Us](#)

