Dr. Park Steven Y. Park, M.D.
Breathe Better, Sleep Better, Live Better

PAP Pressure Machines, Revealed

Mr. Chip Smith
Mr. Brian Werther
Restoration Medical Supply

Dr. Park: Welcome, everyone! I'm Dr. Steven Park of *www.doctorstevenpark.com* and I'm so glad that you can join me tonight. As many of you know, I'm an Otolaryngologist, or an ear, nose and throat physician and surgeon with a passion for helping people breathe better while sleeping.

In this expert interview series, I invite various leading experts in the fields related to sleep and breathing to help you better manage and overcome your sleep apnea condition. Tonight's topic is one that many people have asked for and that's a much more thorough explanation about different positive airway pressure machines. Tonight, we have as returning guests, Mr. Chip Smith and Mr. Brian Werthr of Restoration Medical Supply.

Just a few housekeeping issues before we start. First of all, please make sure that you're calling from a corded land line since the quality of wireless cellphones are unpredictable. And if for whatever reason you get disconnected, please dial back in using the same call-in phone number and access code. Please also remember that the content presented tonight is for informational, educational purposes only and that you should talk with your medical doctor before making any changes to your medical exercise or dietary regimen.

We have about a hundred people registered for this program tonight. This interview will last for about 45 minutes and then, we'll open it up for live questions at the end. Many of you have submitted some great questions and it's likely that Chip or Brian will answer your questions in our discussion. But if your question wasn't answered, you can either wait for the Q&A session at the end of the program or type in your question in your computer's browser.

Now, if you're listening in on your browser, normally, you should be able to see the slides but we're having some technical difficulties, so one way of looking at these slides is to click on the link called CPAP Machines PDF in the upper left corner box, near the bottom of that box is a link called CPAP Machines PDF and if you click on that, you should be able to open it up in your PDF reader.

So let's begin. If you have obstructive sleep apnea, chances are, you've heard about CPAP which is Continuous Positive Airway Pressure. The basic CPAP machine was invented by Dr. Colin Sullivan in the early 1980s, where he supposedly reversed a vacuum cleaner to create positive pressure and attached a make-shift hose and mask to a severe sleep apnea sufferer and the rest is history.

Up until that point, a tracheotomy was the only effective form of treatment. Over the last 30 years, there have been great strides in the technology that's used to treat sleep apnea, including the development of BiPAP, autoPAP, servo-

ventilators and other comfort features like c-flex.

We talked in detail about masks as well as practical CPAP technical information tips in past teleseminars. CPAP has been called the gold standard by the medical community, but unfortunately, not everyone can benefit from this technology. Different algorithms used by these different types of machines are designed for different problems that people have.

You have to remember that it's not just the type of machine that's going to help you sleep better but you have to look at the big picture for the machines, to the masks, to the mindset, to your bed partners and friends support and a number of other variables that also may determine how well you're able to benefit from these devices. Having said all this, let's focus mainly on the machines for tonight.

So I'd like to welcome back to the program Chip Smith and Brian Ritter of Restoration Medical Supply. Their past interviews are some of the most popular and I was so happy when they agreed to come back and talk with us specifically about positive airway pressure machines. Welcome to the show, Chip and Brian…

Chip: Thank you so much.

Brian: Thank you.

Chip: It's great to be back and the feeling is mutual. We were really excited when you did ask us to come back. I hope we can make this a worthwhile endeavor. It's great to hear that so many people are on and listening. And again, we'll do our best to go through this. Our apologies for the technical difficulties but if you can kind of bear with us, we'll try to go through this and cover as much as we can.

I will say we saw the questions that came in beforehand, some great questions in there. And because of that, I guess I'll start with two apologies. One is we're going to try to fly through our presentation fairly quickly so we can try to get to as many questions as possible. So to the extent that we rush through something, I do apologize.

And the second apology is that when I say I try to rush through something, as Brian will tell you, I tend to linger on it, so my apologies if I don't run through it quickly enough. But we'll see how this goes. I think our goal in trying to take you through this is it gives a big picture look at the various types of machines that are out there.

You know, why would someone be prescribed a CPAP, why would someone chose or be prescribed an APAP, you know. And what is an APAP, what is a BiPAP or a VPAP? And then, some of the ASV treatments as well to try to get a picture of what each one of those categories would be and where they would apply for someone that's out there. And then, also have an opportunity to go through some of the new machines that are out in the marketplace because there have been some great developments, especially over the last six months.

And I take you through some interesting features that are out there. As I say it now, it sounds pretty far reaching here as far as what we're trying to get into but we're also hoping to touch upon compliance, the ability of these machines to tell you how often the machines are being used. And then also, in a lot cases, give you therapeutic data and try to explain to you the differences there and then, finally, try to also provide a little bit of information on how insurance handles the payments for these products.

So again, we hope to be able to cover all these topics but also leave enough time for questions, both the questions for someone raising their hand here as well as try to touch upon some of those that came in as pre-submitted questions. So again, I thank you, thank everyone for listening in.

And I guess, we'll start with, you know, if you go to the first content slide, it's listed as Treatment PAP/RAD Therapy at the top. You'll see there, once diagnosed with OSA and that's interesting because we really made this focus about Obstructive Sleep Apnea - the most common type of sleep apnea. And just by it's name, OSA, the O standing for obstruction, meaning that the airway eventually obstructed and as you had indicated there with the Sullivan invention of the CPAP, what you're really doing is having a device that's going to clear that obstruction for any type of PAP or RAD therapy.

That's the new nomenclature or the most common nomenclature now being used to encompass either what has been traditionally CPAP. It's now called PAP, just Positive Airway Pressure because it encompasses both CPAP and APAP. And then, RAD therapy is kind of a former what you'd just consider to be a BiPAP or a BiPAP with back up RAD - respiratory assist device would be the definition for it.

But we really made the presentation as far as the slides go, focus on obstructive sleep apnea, the most common type. But I did see some questions come in for ASV machines, some people have some questions there, so we'll do our best to also touch upon those. In broad terms, the gold standard for treatment has always been CPAP as you had said before. The C in CPAP stands for continuous, the

rest of it is positive airway pressure which like you had said, it's a reverse vacuum cleaner. This is air pressure that's going to keep or maintain an open airway throughout the night.

And for those of you who have been through sleep study and been through a titration which often occurs for a second night, they bring you in for the first night where you actually have the sleep study take place to determine that you have it. And then, most often, you come back for a second night and what they're trying to do there is to determine what's the pressure we're going to need to calibrate your CPAP tube that keeps your airway open. And they really want to try to find the minimal pressure that will actually clear out or make sure that you're not having any apnea take place and that's where the C comes from.

We will get a prescription from the DME company that will have your pressure on it. We'll have to load that on to the CPAP machine when we deliver it. And again, that's set by doctor's prescription.

We have had people raised up the question, "Hey when I go to travel, I'll just use my buddy's CPAP, he's not really using his anyway so I can just go ahead and use his. And, you know, we have to put the brakes on that discussion and make sure that people understand that your machine is set to your pressure when you receive that CPAP. And you need to make sure you're using that because your friends or relatives' unused CPAP, you really have no idea just by plugging into it what pressure that's going to be at.

Again, most common form is Continuous Positive Airway Pressure or CPAP. And that's really a device that…I wouldn't call it, it's not very interactive with the patient. In other words, you set it and it blows. You know, what you're going to have take place there is different comfort features that could be put onto a CPAP. But at the end of the day, that's really going to blow at the rate that's prescribed by your doctor. Again, CPAP - continuous positive airway pressure.

One of the developments that took place and I know, Dr. Park, you tend to be a proponent of this is the auto adjusting or the APAP therapy which is a much more interactive machine. It's taking for insurance purposes and those kinds of things, it's still considered PAP therapy, it's still considered part of the same category but really the machine responds completely different than a normal CPAP. And that is again, just a very basic device, just like you set the CPAP to blow at one pressure; well, the APAP is set to respond to a range of pressures. So you would set a minimum and a maximum and the only thing you're doing there is making sure that the CPAP is not going to blow below a certain level and it's not going to go above a certain level.

And the advantage there is that you have the chance to really capture, first of all if you don't know specifically what the CPAP pressure should be on a particular patient or if it's been many years since someone has been titrated or went for their study. By going to an APAP device, you really have a chance to make sure that the machine is going to deliver a therapeutic benefit and be more likely to arrive at the pressure that the patient needs.

So what's amazing about these devices are they all have their own algorithm but all it really comes down to is that machine is set to blow and start blowing at its' minimum pressure - the minimum pressure that we set. And during that time and this is why I say it's a very interactive device, it's actually going to be recording how the patient's breathing. And very simply put, when you start to deviate from that breathing pattern which is really intended to be an indication there of the onset of a hypopnea or an apnea. So when you start to deviate from that breathing that machine rises at that point in order to get you back into your normal breathing pattern, a very basic way to put it.

So you really have an opportunity with an APAP to have it work over a range of pressures, make sure that its going to capture the pressure that you need on a particular night because there could be variations with somebody that CPAP or allergies, where one night they could have…be congested they might need a little bit of a higher pressure. You know, you're going to cover it if you're going to have the APAP on a patient. The other benefit is some patients when they've got a very high pressure, to have that pressure blow all night or have to start out on a CPAP pressure, it could be very tough to accommodate.

The people that have struggled with CPAP therapy because they feel like the pressure's too high can sometimes be successful if moved to an APAP therapy, or an auto adjusting machine. And that's just simply because for most of the night, at least certainly when they're awake, the machine's just blowing at a lower pressure, it's just easier to accommodate. It really only responds when you're sleeping, where it's only suppose to respond once you're sleeping and then, the pressure will go up.

You know, it begs the question, if it can do all that and it's that interactive why doesn't everyone get an APAP? And part of the reason for that is certainly cost. It's still considered the same category. So insurances, Medicare, etc. will not pay any difference between those two, so that cost premium is borne out for insurance purposes either by the DME or in that case, it would again be something that's not going to be covered or might have to be an out of pocket charge.

But it's also important to note that there are some doctors, there may be some listening here tonight as well that are very much opposed or I would call it maybe not bought into the technology behind APAP therapy. So if that's the case, there are some doctors that feel - look, we know what the titration pressure was. This is the clinical or the therapeutic pressure, we need and make sure that patient is on. If either the APAP isn't recording it properly or responding properly or is just to slow to respond in some cases, that patient's not going to be nearly as therapeutically treated as they would be if they were on the standard CPAP with the pressure that I know is going to maintain their open airway. Again, that's how some doctors feel and we deal with some doctors that will not use APAPs on their patients.

I think the last reason for why APAP is not just a cure all and I state this because it's not for everyone is sometimes those raises, the rising and dropping in pressure can actually cause its' own awakening. It could, for somebody that might either be a light sleeper or just might be susceptible to those changes. You could actually have an interruption in sleep come about because you have that increase in pressure.

So that said, autosets are great, it's been a great way for us to try to achieve compliance with patients who might not have been successful with CPAP therapy. And I think it's important to know for those APAP users out there, in particular. Well, first of all, you should know what your pressure was, what your CPAP pressure was from your study. And if it is ten or above, you need to make sure that when you're putting your mask on at night, that you're trying to - most of these machines have a mask fit feature - if you press and hold the on/off button for example on the Resmed S9 or the S8, it will blow at a pressure of ten centimeters. So you can do a mask fit and that's called the mask fit feature.

One of the concerns with an auto adjusting machine is that it will start up low. It's easy to get a feel with your mask, you go to sleep, the pressure raises up and boom, you have leaks all over the place because the pressure's a lot higher and it just fights through the seal. One of the tips there is just do your best to try to fit the mask at the higher pressure.

Working through the slides, and again, I told you I was going to fly through these, I'm stuck on one. We'll fly through some of the other ones a little bit more but I just want to make sure you have a good picture of what each one of those are.

BiLEVEL or RAD therapy is listed on here so this is actually considered a different category of therapy. Usually it's prescribed BiLEVEL, the Bi in BiLEVEL meaning two, the one pressure is set for inspiration, another pressure is

set for expiration. So you have this shifting, a higher pressure delivered when you breathe in and a lower pressure delivered when you breathe out. BILEVEL is typically prescribed at very high pressures.

There're a lot of clinics that just have flat out rules that say, "Above a certain pressure, the patient needs to go to BIPAP". Because the ability of the patient to actually exhale when they have this huge force of air coming in is very difficult so BILEVEL is what gets prescribed.

The other times when it is prescribed is when people fail at CPAP therapy and especially if those failures are because of reasons that have to do with just not being able to adjust to the pressure, feeling like when they breathe out they just can not, like the air's being shoved right back down in to their throat. Those would be the reasons that would lead you too, if you can't troubleshoot and fight through it, a fall back position could be to move to BiLEVEL. But again, it's really going to be the same thing, it's going to be treating your obstructive sleep apnea just with an even more interactive machine, a more expensive machine. And that's why my most insurances make you fail at CPAP or PAP therapy before qualifying for the BiLEVEL.

Dr. Park: Can I interrupt for a minute?

Chip: Sure.

Dr. Park: I got the slide thing working and troubleshooting while you were talking.

Chip: Okay, great.

Dr. Park: So you can go through the slides. It's working now.

Chip: Okay, and as I do that, I will just mention the ASV which is at the very bottom. Especially for the treatment of central sleep apnea and as the name indicates, for obstructive sleep apnea you have an obstruction that's really how you needed the machine that's going to blow air and fight through the obstruction.

And let's see, I think I've just about caught up, in here. Okay, are we there, I think I got there slide wise, I hope you can see that, I'm looking at the ASV treatment with back up therapy. So it's still considered a RAD but ASV treatment is when someone has been diagnosed with either a mixed apnea or something involving a central event where the primary central events are greater than 50 percent of the overall events that they have. And central events, there's not necessarily an obstruction. Some people can have obstructive sleep apnea along

with central sleep apnea but those central events when they occur, there's actually no obstruction in the airway.

So a standard CPAP machine or a BiPAP machine or an APAP machine, those machines designed to treat OSA, they really don't do anything during those periods if you're having a central event because the airway's open. Those things are designed to plow through that obstruction, make sure that you keep breathing.

Well, in this reason, the signal is not being sent by the body for somebody that has central sleep apnea; the signal's not being sent from the brain to breathe. It could be for several reasons but these ASV machines are actually designed to treat both types of apnea - both obstructive events and central events. So we can get into some of them in the questions a little bit later. Yes.

Dr. Park: Can I interrupt again? Just for everyone that' listening, I'm sorry about the technical difficulties. We've got the slides working again so if you're listening on the browser, there's a slides option in that box in the upper left corner. If you click on that, the slides should popup. Why don't you go ahead, Chip?

Chip: Okay. I think I nailed CPAP therapy and I think the motivation for success. Can everyone see that? Can you see that, doctor, on the slide?

Dr. Park: Yeah, CPAP therapy, yeah.

Chip: Okay great and I'll pass it off to Brian just in terms of motivation for success. And Brian, for those of you that don't know what's from the previous presentation is a CPAP user. We call him the office guinea pig. When a manufacture rep walks in with the latest and greatest mask or with the latest and greatest machine, you know, the line is always give it to Brian, let him try it and we'll tell you really how good that mask or machine is. So with that, here we go to Brian.

Brian: Thank you, Chip! Thank you, Dr. Park! I think we did talk quite a bit about CPAP therapy. At the end of the day, it is often described as it's a splint, it keeps your airway open; it allows you to get the proper air necessary for restful sleep.

And I think the most important thing and the thing that we tend to focus on most with the patients that come through our business; our company is the motivation for success. How do we get somebody to be successful using a device that effectively requires them to sleep with a hose or a tube next to them and a mask over their face when they've never had to sleep like that before? And our thought behind this is that if we have a motivated user and we have a patient who is

willing to work with us and work with their DME and meet us half way, we can work with them to get them there.

And the reason being is that once successful or once you're on your way to success with CPAP, the downstream effects in your daily life is just amazing, your vitality, your motivation to move throughout the day, your overall performance and mood, your alertness, your quality of life, your quality of sleep, your sex drive. Everything is just enhanced from where you may have been with undiagnosed OSA and that's just the benefits that you feel.

And of course, from the medical side - hypertension, stroke, congestive heart failure are all risks for untreated OSA. So we often really believe that we can get you there. Now, one of the things that we do as an organization, that we believe in is how do we desensitize people to get to be successful. And by desensitizing them, slowly bring them up the process so that we spend a couple of days with practicing and feedback and speaking to the patients and making sure that they're comfortable. That they understand how to use the mask, that their questions are answered with regard to comfort features that many of the machines have now and that we'll get to in a little bit and that they are fully comfortable with this, what is often times new and somewhat intimidating equipment that's next to their bed while they sleep.

Overall, CPAP being the most basic of these as Chip has mentioned before, it is a fairly non-interactive event. You put this on, you breathe normally and hopefully, you work towards having a great night's sleep with it.

Let's talk in a little more detail about auto PAP, auto-adjusting CPAPs. And again, as Chip had mentioned before, this machine, this equipment adjusts on a breath by breath basis and the goal is to do what or mimic what your doctor would do and that is to find the minimum pressure you would need to get that restful night of sleep. Ideally through a series of algorithms, it's going to provide you with your ideal pressure over the entire nightstand that pressure may change and that change could be based on anything from sleeping position, to propensity to be congested, to any number of issues that may have prevented you from getting a steady supply of pressure.

These machines are known by various names, anything from auto CPAP, to auto titrating, to auto PAP, to auto - it's all the same. Bottom line is that these machines adjust to how your breathing presumably operates at lower pressures than fixed pressure machines for any number of people and allow you to overcome some of the difficulties that you may have if your pressure is fully dependant upon things such as position or externalities such as allergies and

things of that nature.

Chip, I'm sure you have control of the slides, so let's go to the next slide. I think that the one thing that we want to stress and the one thing that we want to make sure that people walk away from at the end of this night is that there are a lot of myths around auto PAP machines. The most prevalent one is that it adjusts to how I sleep at night. If this is based on a breath by breath basis this must be better for me. And no, that's not necessarily the truth.

These machines are based on algorithms and they're based on assumptions and forecasted breathing patterns and they're not all the same. Some manufacturers have algorithms A, some manufacturers have algorithms B. And they're patented, they're different, they respond slightly different to flow limitations like hypopnea, snoring, etc. They all work quite well but none of them are perfect.

You know, and as Chip has mentioned, I've slept on all of the machines and, you know, yes, every manufacturer will tell you that their algorithm is the best. By and large, I think once you are asleep and you're breathing comfortably on a machine, it will do a good job for you. They're all separate and they're all different and your experience may differ from mine and your experience may differ from one another's but at the end of the day, they're based on forecasts and algorithms and they're not perfect.

One of the things that's interesting is that some people sleep terribly on auto PAP machines. They can recognize, they feel the change in pressure during the evening. The pressure may swing wildly and they do better off when there's an average or medium pressure that's chosen by their physician. The auto PAP machine is just disturbing to them and they're aroused many times during the evening from their sleep. It's not as efficient for them as CPAP.

So, I just want to leave you with those thoughts as you think about auto PAP versus CPAP. And Chip, I'm going to send it back to you…

Chip: It sounds good. For the first time I think, I will, I'll blow through the next slide just so we can get to the newest products on the market since we already spoke about the BiPAPs. My only closing thought on APAPs is that we do have some patients that even though they're more comfortable on CPAP therapy, they will have it set up in CPAP mode for quite a while. These things they can operate in dual modes. You set it up to run on CPAP for a few weeks or even a year or two and then, they can flip back over to go into auto-set mode and so you can kind of just re-titrate and just make sure that the pressure is still good. So we do have some patients that they choose auto titrating devices even though they prefer to

have one standard pressure just because they know they can flip back and just check and make sure that their pressure is still the same.

Next, I'm going to skip over to newest products on the market. This has just been great, within the past six months, there's been perhaps, a little bit longer than that, the release of two major products. There's another one that's on the way from Fisher & Paykel but the market leaders are Respironics and ResMed and they both have had new releases within like I said about six months.

One thing is it's a good sign of a healthy market place that these companies are coming out with these products because they continually have new either comfort features or full therapeutic features which are good advancements and each iteration that comes out produces another benefit. We'll touch upon some of those for some of you that have legacy machines.

I know some of the questions that came up prior to this is which machine should I go to or I have this machine, is it any good? And I do think it's important to say that your CPAP machine, as long as you do, you know, take it into your DME company on occasion or back to your sleep center to just get it calibrated. They can put a manometer up to that just to make sure that the pressure that it says it's blowing at is actually what's coming out.

But as long as that machine is still working well and as long as you go back on a fairly regular basis, I would say every two to three years in that kind of time frame, most probably, staying in touch with your sleep doctor, to go back if you're on a standard CPAP machine; to go back for a titration study just to make sure that the pressure is still the same. I say that in particular if you've had any body changes. If you've had any big weight gains or weight losses or, you know, as much as these machines now have technology where we can get a report on how you're doing, the best barometer that we have is how you're feeling. If you notice a change in either energy levels or just how you're feeling overall, make sure you get back to your sleep doctor and it's probably time for a titration, if not, a new sleep study.

My point overall is the machine you have now is probably still very effective and likely good at delivering a good benefit. What you're really getting with some of these machines are some greater comfort features and better data that we can see from either the smart card or however, we would have these reporting. Brian can touch upon some of the ways that we gather compliance but like I said there's a new product coming out from Fisher & Paykel that's going to be released I think in a couple of months but the two newest ones on the market today would be the Respironics System I and ResMed S9.

The biggest advancements here, in my opinion, the first thing is in technology; there's more complete therapeutic data. Now remember earlier when I had referenced the central events versus just strictly obstructive sleep apnea and obstructive events. Well, in the previous machines if you guys have out there full therapy machines like a Respironics Pro or an S8 Elite and those types of things we could see information such as your AHI, your apnea index, your hypopnea index, we could see leak data.

Well, these new machines, when they came out, System I and the S9 added a couple of really key and interesting pieces of information which include periodic breathing and clear airway index or central events, an indication of central events. And it really provides a much deeper level of detail and in particular for patients who may be having central events but they had not been diagnosed. May be they had a sleep study that didn't diagnose that, maybe something was misread, maybe they had obstructive events not realizing that they were also having central events.

The point being they might have been prescribed CPAP, they think that they're going to feel a lot better. Here, they're using it religiously every night and they're not feeling any better. One of the reasons for that could be that they're having central events. By looking at the data that comes from these machines, you'd have an opportunity to see that definitively. So it provides a great screening tool for patients in particular that just aren't feeling better yet despite using the therapy and knowing that they certainly are having events or just knowing that they're not feeling right. It just provides that greater level of detail. So that's the first and great thing about it.

The other thing is these are the two machines on the market place or the two manufacturers that have features called the EPR or C-FLEX. And again, we'll probably touch upon on that in a later slide but those things just allow for…it's a comfort feature that allows you to have expiatory pressure relief. It's not quite at the level of a BIPAP but when you breathe out the machine dips down in the pressure and it just provides greater comfort at least when you're awake and trying to get accustomed to using the CPAP.

I think the final thing is for those of you that have ever heard of rain out, existing CPAP users especially for many years will know about this. But if you're a new CPAP user, what happens is you have this warm humidified air coming out of the humidifier by the time it will travel the length of the tube up to your mask especially, if you're in the heat of the summer now, many people are in very cool rooms, in air conditioning or in the winter time if people like to sleep in cooler rooms. You have that warm humidified air coming out of the humidifier by the

time it travels the length of the tube it condenses and you get water. It's very unsettling to have the water come out in the mask and again they call that rain out.

These machines have an indicator in there, it's called an anti rain out feature, that allows you to maximize the humidification with what they call eliminating rain out or the possibility of rain out. I will now say that there is a feature that's specific to the S9, especially as it relates to rain out which kind of takes it to another level which is if you have an S9 Elite or an S9 auto machine, you could upgrade the tube and go to a heated tube where you would completely eliminate the rain out. I don't know what the exact numbers are but I think it's pretty rough to…or pretty accurate to say that you could double your humidification with a heated tube.

It just warms the tube up so that you don't lose any of that humidification as it travels the length of the tube. So again that's usually an additional purchase, it could be something that's prescribed by your doctor but it's just a great feature and you have the chance with the S9 to actually chose the temperature if you have that heated tube that you're going to have the air blow at, you know, at the mask end.

Just again, incremental advancements but some really interesting ones and some fun ones and then on top of that they actually look pretty good. I think from what I've seen in the pictures the Fisher Paykel one takes that kind of look to another level as I think it incorporates some other features that make it more like an alarm clock type look.

Again, just I think some great advancements, these are the newest products on the market in both data wise as well as comfort feature wise. They're a nice advancement over what was out there previously. So that said, I will again pass it back to Brian. I know there were quite a few questions as far as compliance tracking and compliance tracking capabilities, so I'll hand it off to Brian and have him take you through what these machines are capable of in terms of the data that we get back.

Brian: Thanks, Chip! I think the compliance tracking and the capabilities discussion is pretty evenly split between two areas. Some of the machines provide information that's just about usage - are you using the machine, how long are you using the machine for and is it a fairly complete night's sleep or is it somewhat fragmented.

Usage data used to be all that was available on these machines. In fact, many of you that may be Medicare patients understand the importance of usage data because some of the insurance companies, Medicare being the most common of

which and many others, are going to start asking for it is are these machines being used and how can the company prove that they are being used.

In addition to that, some of the machines, the S9 Elite which Chip mentioned the System 1450, they provide therapeutic data and this will provide a look or a leading indicator for your AHI, for the apnea hypopnea index, the number of hypopneas you may be having, the number of apneas you may be having, what the leak looks like, whether or not there's a snore factor. And again, most impressive and most important with these new machines or these clear airways are there indications that you may be suffering from central apnea, not just obstructive apneas.

The data is the best available with these machines. The data is not the same data and is not exact in terms of what happens when you go through a sleep study. One of the things that we are reminded about from actually one doctor or a few of our doctors, some of which have actually built the algorithms to create this data is that it provides him an early look but it doesn't replace the information he gets from his lab. In fact some of these doctors that are so detailed and research oriented they only want the usage data because they know that there's probably about a 20%, as somebody had once mentioned, 20% swing in terms of the accuracy of the data. So again, for the therapeutic data, I think it's helpful. We provide it to doctors when they ask for it but again it's not perfect. It's being recorded on a machine.

Now I think the interesting thing that has really come to play in the last year or so is that there use to be just the ability to read numbers off the machine or send in a card to get the data to your DME or to your doctor. And now that there's a whole host of various methods in order to get the information to your provider and some of these machines are being delivered with wireless modems. Both the major manufacturers like ResMed and Respironics have those.

Wired modems like the old computer modems that you use to plug into your phone line, phone in data. Direct connect where somebody may actually visit you or you may bring your machine to somebody they plug it directly into the computer and smart card and even smart card technology has changed a lot over the last year.

It use to be that there were these cards either mag stripe or with a chip on it that you would put it into the machine and it would record directly on the card. Now, these machines are recording the data on the machine and transferring it to the card. And what that allows both patients and providers to do is to get the information, have you send in your card to your doctor or your DME and not lose

any data because while that card is in transit, your machine is still recording your usage.

So let's move off to some of the features and benefits and the comfort features related to these machines now. Chip had spoken earlier about C-FLEX, Bi-FLEX, EPR, etc. and these are features that allow your pressure to decrease on your expulsion breathes as you breathe out. So effectively, if you have a therapeutic pressure of twelve, twelve is the minimum pressure needed to keep your airway open. If you have your C-FLEX or EPR set at two, your expulsion breath would be at a pressure of ten. It's just a slight decrease in pressure to provide a sense of comfort to you and these comfort features are generally most important when you are falling asleep.

What I mean by that is that once fully asleep and once you're receiving your therapy, unlikely that you would feel the difference in the pressure in and out at that level. But as you're falling asleep, it's certainly been a help based on the feedback we've gotten from our patients.

Chip: Hey Brian, important to note there by the way that EPR is the brand name from ResMed and the FLEX, anything with FLEX on it is the brand name just what they call it from Respironics. So effectively, the same thing even though I think their marketing people would probably cringe to hear me say that at each place but again, expiratory pressure relief and only two manufacturers currently have it in the market place, ResMed going by EPR or Respironics going by anything that ends in FLEX.

Brian: I think it's also important that while these two manufacturers put this out as a main comfort feature, Fisher Paykel which currently doesn't have a machine with type of feature on it, they're claim and their policies around EPR is that the humidification that their machines put out and that's a third one, humidification, provides a soothing comfortable night with steady humidification and that the EPR or the C-FLEX is not needed.

I think it's a personal preference at the end of the day. Again, manufacturers don't like to hear that but it's not that one is better than another. It's just that they're different.

Ad then, Sense Awake which is the second bullet point is a Fisher Paykel comfort feature and that's really very much rooted in their auto machines in terms of sensing how you're reacting and presumably adjusting the pressure and lowering the pressure if they feel that you're failing to arouse as the pressure is increasing as the auto set is going through it's cycles during the evening.

We talked about the new humidifiers, specifically the one on the S9, the System I and their anti rain out capabilities. What we have seen is that a decrease in the calls, quite frankly of people complaining about the fact that there's a loud banging in their tube or there's water in the tube or their face is getting wet and this a…I think this is probably one of the greatest features and benefits we've seen in the last year.

It has really been quite helpful with the wild swings in temperatures we've had in the New York region and it's really been I think in terms of overall patient comfort probably, one of the more important ones that have come through. And then finally, many of these new machines have enhanced screens and enhanced menus that the patients can see. They can look at how they're doing and how their sleep is improving with such metrics as AHI or leak or number of apneas, etc.

As patients are becoming more and more educated and more involved in their sleep and their therapy, this provides them a look at how they've been doing over the period of anywhere from one day to the last month or three months. So Chip…

Chip: With that, I think we're going to go to insurance coverage for PAP and RAD devices. And then, we'll wrap it up and try to take it right into questions because again, I think my second apology there was to make sure that you, you know, that we tend to linger on some of these slides and we get into some of the content. So I'll try to run through this one and then just get into questions and answer and hit as many of the questions that came in on the front end as much as possible.

For those of you that have been prescribed CPAP or APAP or BiPAP, it's most common today that insurance is going to cover that and how the insurance pays for it though is…it varies widely by the insurance. Some things are consistent which is that you have to have had a sleep study that determines that you actually have been diagnosed with sleep apnea. Then, often times, you need to have a titration report with that although if an auto set machine has been prescribed it could be a way to get around that.

But again, as long as there are certain things to meet those parameters such as you being diagnosed with OSA, if the prescription is written to contain all the information that's needed then your DME company should know exactly how the prescription needs to be written. Then, the insurance again will go ahead and cover this but some insurances pay for it as an outright sale. Where we've recently been approved as part of the Blue Cross Blue Shield network and they

have their items as sale items, so the minute that you receive them, the ownership transfers to you and those products again, all the components therein are also considered sale items and transfer over to you. Other insurances and Medicare is probably the biggest example of this operate underneath a rent to own type of procedure. In Medicare's case, they'll actually pay for it as a thirteen month rental, in month fourteen, it becomes yours.

The twist that Medicare added as of November of 2008 was that they have the first three months of your usage defined as a trial period. So some insurances are following this type of model and that's why if we go back to that compliance slide that Brian had taken you through, the usage component is sometimes required to get your insurance now to pay for some of these devices. The standard that Medicare set is that the machine has to show that you're using it for more than four hours per night for a certain set number of days within a 30-day period.

In Medicare's case basically, they give you the machine and in those first three months you can pull out the best 30 days of usage, they have to be consecutive though. And 70% of those days, you have to have used it for four hours or more. So sometimes, it can be a challenge. We have some patients and boy, it's tough! We've had patients use it for three hours and fifty-nine minutes and that day didn't count. As much as we're frustrated because it seems like it should count from a patient of trying it, we're also frustrated because the patient didn't keep it on for the extra minute.

But again if you have that proof, Medicare requires that you then also go back to the doctor and we get documentation that shows that you had a conversation with your doctor and that they want you to continue to use that and then that unlocks the remaining ten months. If you do not qualify or you miss your qualification, there's some steps you'll need to go through which may involve going back for another sleep study, it will certainly involve having a face to face conversation with your doctor to determine maybe you would then qualify for a BIPAP or what your other options might be.

Again, long story short, what you have is insurance will cover it, some require it, some will pay for it as a sale, some will pay for it as a rent to own. And of those rent to owns some have certain requirements of you as the patient to use it, prove that you're using it before they will cover it.

Another thing to note is that all of these supplies fall under DME coverage. For those of you who aren't aware of it, DME stands for Durable Medical Equipment. And so therefore, some of you may have met your co-pay or your deductible underneath your medical plan but may not have touched the DME plan which

might in turn carry its own co-pay or deductible with your plan. These are things that you should check with your insurance on so you know what out of pocket expenses you may have.

I think the other thing that sometimes leads to confusion is that all insurances and we have to respond to how they tell us to bill for this as opposed to choosing how to bill for it ourselves. And we're also told what price they'll pay for it as opposed to just charging a price and having them reimburse us for it.

One of the things that they have us do is they break down all the products that are delivered to you as different components and each component is billed for separately. So you will see on some type of invoice or explanation of benefits that your company has submitted a bill for not just the CPAP but the heated humidifier will be separate, the face masks, tubing, filters and other items you receive will all be billed separately. So don't be surprised if you see all those, they all carry their own codes and their own explanations but the only reason to be concerned is if you see something billed and you didn't actually get it. That would be a reason to call up the insurance company, call the DME company, etc. But other than that, that's what you should see on the explanation and the other note that I will say here is,

Most insurance companies do have a supply replenishment schedule. So for supplies reordering like for Medicare it's every three months, Most insurances are either every three, some are as needed, at worst, most are every six months. So you can get a new face mask or the components for the mask. It could be a new cushion, etc. but, you know, these things from use everyday will tend to wear down and you should make sure that you have fresh supplies on a regular basis and most insurances will cover that.

Well, with that said, I know we covered a lot of ground here and our last slide is about improving therapy. Without trying to gloss over that too much, I do know time, wise we're very tight. I think just to sum up overall, I hope you have a better understanding now in terms of the differences between the PAP and RAD therapies, whether it's a CPAP, an APAP, a Bi-PAP or one of those BiPAPs with back up rate an ASV machine that would treat central events. I hope you have a better understanding of that information as well as new products on the market and some of the features that are out there now.

I think as always, we'll close with the fact that regardless of what the machine is telling you how you're doing, the best barometer is actually how you feel. We had a patient yesterday that called up and was just perplexed because they weren't feeling or couldn't tell that they were feeling a huge benefit. We had read that

they had an S9 auto, we read the data and the data was showing that they were doing great.

It took awhile on the phone until we discovered that the barometer that person was using was, and maybe on the call today too because I think they had referenced to sign up for this call. But they'd referenced their father having very severe apnea and that, you know, he raved about how he felt when he was on the therapy and would not go a night without it. This person had been diagnosed with a much milder case of it and therefore, wasn't waking up with this feeling of, "I'm ready to go run a marathon now." It took a while in going through that but their case was different, it actually was treating them and they were actually doing very well.

But there's other cases when it doesn't matter what the data's going to say, it depends on how you feel. And in that case, as we kind of peeled the onion and realized that it was more perception than reality. I think he started to realize that different markers such as not having to take a nap during the day and those types of things were taking place and the therapy was doing its job. The same thing holds true where if you could be looking down at your data and the data might say you're still doing fine but if you start to feel like you're dragging again or just feel different or tired then get in touch with your doctor. You're the best judge regardless of what the therapeutic data or anything like that might show.

I think the other thing is as always, try to find enough support whether it's the DME company, whether it's your physician, hopefully both of those you're involved with and communicating with. And if you don't have that then the support groups…like we'll be at the Manhattan AWAKE group here tomorrow but there're CPAP support groups that are out there. I'd say go on line and try to find either an on line one or find a local one in your area. And boy, there's people out there that are more than willing to help, that have been through things that can help you out in getting through a lot of this stuff.

The key to it is take the initiative and make sure that you communicate. And I think you'll find that there are people out there willing to share their experiences and help however they can. Some of the message boards out there are just absolutely incredible and I know Dr. Park you're very active as well so you get some incredible experts, you know, supporting this. And again, I just say take the initiative and make sure you communicate. So that said, I'm going to lead it into some of the questions.

Dr. Park, if you're okay with it, I want to try to touch upon a few that came in before hand and then, I assume we'd like to open it up in case anybody does want

to ask a question.

Dr. Park: Sure.

Chip: Actually, maybe it would be better to open it up and then if we either have a shy group or there're not enough people to ask, then I can fall back to the questions that were submitted.

Dr. Park: I think most people are on line but if you're on the phone, press *7 to unmute yourself, ask your question and if you're on line, I see questions coming in. Chip and Brian do you have access to the Q&A section on your browser, right next to slides there's a Q&A?

Chip: I see incoming and approved mode, see all questions.

Dr. Park: I'm sure those are questions and. The ones that came in first are at the bottom so you may want to access those from the bottom up.

Chip: Okay…

Dr. Park: You can go through each of these…

Chip: Steven, I hope to get to your question there, I thought we were starting at the top there. This kind of touches upon some questions that were submitted earlier as well. Is it normal for my water reservoir to get so hot after six or seven hours of use? It certainly is possible, it depends. Again it all comes down to how you feel in the morning and if there's any water that's left in there. It's tough to tell for what you mean by hot because it can be if you have the humidifier set up to it's highest setting, the hot plate that's underneath the humidifier will get pretty hot. And so, you wake up after six to seven hours of use and yeah, you'll be able to feel it when you take it out of there. Now, if it feels just scalding and you have no water in there for long periods of time it might be something you'd want to call your DME company about.

But if you're waking up and you feel fine, you just have the humidifier set up pretty high and the humidifier, the hot plate returns back to it's normal temperature after turning off the CPAP machine, it should not be a problem, so again apologies for not answering that one perfectly, you just have to tell what the definition of what hot would be in there. Warm, pretty, you know very warm if you have it maxed out is common and should not be a problem if you have the humidifier set to a low or a medium setting and you still feel like it's really, really

hot, I'd say call your DME company and get it checked out.

There's a question here from Josie Ann about the oracle mask. Would that be good for me? And for those of you who don't know what the oracle mask is, it's a mask where everything is introduced through the mouth, where the pressure is delivered not through the nasal passages but through the mouth. And wow, that's a tough mask to get accustomed to. It looks great, it's one of those masks that looks great in theory and I'm sure there are some patients out there that may have had success with it and they might be planning on…I'm speaking out of turn here but just in our experience, that's such a tough mask to get people accustomed to.

What usually happens is that someone thinks that's the mask for them, they go ahead and try it and then just either can't tolerate the pressure being delivered that way, by bypassing the nasal passages or what's more common is you need to have a really high level of humidification. Meaning either a Fisher Paykel 604 which is a heated tube machine or that new S9 from ResMed . You need to upgrade it to a heated tube because since you're bypassing the nasal passages, the level of dryness there, you don't have this added humidification from the nasal passages and people get dried out so fast on that oracle mask.

So Josie Ann, I wish I had a better answer for you. We have not had success with the oracle which is probably the best way to put it. And by the way, if we don't get to your question, I encourage you to either go to restorationmedical.com, www.restorationmedical.com, you can just contact us and put in there I listened or I didn't get my question responded to and that will find it's way to either me or Brian and we'll do our best to respond to you.

Tom Gilmartin - I have tried using two different types of CPAP masks, one mask only covered the nose and the other covered my nose and mouth. I did not feel comfortable with either of them, that's fairly common especially if you're new…are there any other types of masks that could help. The main problem I had was with the air blowing on my face.

There are other types of masks, some of it comes down to the pressure that you have and part of this would be, if you still have it in the archives, Dr. Park, we did a mask webinar that touched upon some of this but from a very big picture standpoint. If you have a low pressure, you can use any mask that's out there but as the pressure gets higher you sort of start to get relegated into using either a nasal mask or a full face mask just because when the pressure is being delivered, if your pressure's low enough, if your pressure is ten or lower, possibly even twelve or lower, Tom, I would say there's nasal pillow masks out there that you might want to try such as a Swift FX or Swift LP, there's the Opus and some

other masks. But nasal pillow masks delivered directly into the nose usually have less stuff around the face. A lot of times you have open vision which can reduce feelings of claustrophobia but once you start getting into higher pressures boy it's tough to accommodate that air pressure being directly in as you would get it from a nasal pillows.

So part of the other thing that I would say to you is how much and how often are you practicing with it before you go ahead and use it at night. We've really gotten to the point where when we deliver a CPAP machine, we tell people just practice with it. You're going to use this at night maybe even the second or third night after we deliver it as long as you've practiced with it enough because those first few nights are so critical, we want somebody not be frustrated.

You're already to get to sleep, you're excited to use that CPAP for the first night but you're not quite comfortable with putting the face mask on and you're not quite use to having that feeling of the air blow in. And so you're tired, you're all excited to go ahead and use it but you annoy yourself by not being able to get the mask on right and then you get the air blowing in and the next thing you know you woke up and you're not ready to go to sleep and you start to have negative associations with the CPAP instead of a positive ones which would come about if you were a little bit more relaxed and comfortable with it.

I don't know if that was part of your training or not, Tom, but I'd say go back and practice and if your pressure's low enough, you know you can take a look at some nasal pillow masks that are out there.

Brian: The thing that I would add to that, Chip, is that Tom, you mentioned that you used one that covered the nose and the other covered your nose and mouth. And while that may be true, there are multiple manufacturers that make different types of masks that cover your nose and the same goes for the nose and mouth. Just because one nose or nasal mask didn't work for you doesn't mean that another manufacturer's nasal mask wouldn't work for you if you tried it. It's just some faces are different and they adjust differently as to how it feels on you, your face and I would urge you to go back and talk to your DME and I know one of the things that we do is we work with the manufacturers to make sure that the patient has within the first 30 days a chance to try a mask and then exchange it for something else if that wasn't the right mask for them.

Chip: Okay, next question, Norm has a question. Why not use BIPAP regularly in lieu of CPAP to decrease the work of breathing or exhaling for all patients regardless of what pressures they require to improve the AHI?

I think it's a great question, I think the first answer it has to do with costs. You know, CPAP is so effective for so many patients, the move to BIPAP is about the twice the cost machine wise and about twice the cost of reimbursement wise. That's really because the machine has to respond to you, it has to know the difference between inspiration and expiration, has to lower the pressure when you're breathing out and there's a much greater technology involved versus they set this thing to blow at a specific pressure all night long. So therefore, the costs are just different and so many people are treated effectively on CPAP that it's really become a fall back or a safety measure or a way to deal with high pressures.

I think that's okay given how many people we have successful at CPAP. So in a perfect world, Norm, they'd probably all be on BiPAP. They'd all be on BiPAP auto, they might even be on auto SVs but there's a certain cost benefit that occurs and at this point we're happy for the fact that they cover it and that as they recognize it. Hopefully they'll start to cover things like therapeutic data. But I don't think we'll ever get to the point where they'll just say, hey, throw BiPAP autos on everybody or BiPAPs. So I hope I answered that one.

Okay, can an auto PAP deliver too high a pressure unnecessarily? Certainly possible. There's no name associated with this, it's just coming in from New York. So I think that's what Fisher Paykel is trying to get at with their new auto sat machine which Brian had referenced some of the doctors that we work with, there's a Dr. Rappaport out of NYU Medical Center who has actually work with Fisher Paykel on this technology. He did one of the presentations recently at that Manhattan AWAKE group, but I think if not the previous presentation maybe two presentations ago and he's been involved in that. And I think it sounds like pretty excited from about the benefits of that which, you know, again to get back to it, can the auto PAP deliver too high a pressure unnecessarily.?

Certainly, if it's delivering a high pressure and it's starting to result in an awakening. You're starting to wake up and the machine continues to plow on through or stay at that high pressure and not respond to the fact that you've now woken up. It's going to cause an arousal which is really part of what you're trying to eliminate in the first place. So to the extent that an auto set can be waking people up and those changes in pressure can be causing awakenings, I think the design from what I understand that the Sense Awake, you're trying to get away from that or at least try to deal with that.

Len from Corpus Christi. Why do users sometimes wake up with a bloated stomach? You know that's actually a fairly common complaint, called aerophagia. If it doesn't happen to a lot of people, it happens to enough that it's associated with CPAP use and that's a tough one. It can produce this bloated

feeling, this gassy kind of feeling through out the day or certainly when you first wake up for quite a while. And the new CPAP users, it can sometimes be part of the reason why they won't be compliant.

A couple of things as far as that goes, I don't know of any definitive way to tell you, you can eliminate it. Often times, it's a sign of a new CPAP user and a lot of people can just work their way through it. In other words you can get use to it and they just end up basically working away from that where they tend not to have aerophagia as much as they become a more experienced user.

But that said, there're still some people that just can't get over this. I think sometimes, and I defer to Dr. Park here but sometimes it's been helpful to discuss sleep position especially positions of the head, if the chin is too far down it can help contribute to some type of obstruction there or basically contribute to the air being forced down into the stomach. I think if you have aerophagia, if that's a problem…you know consider trying to raise the level of your chin just so you change the angle or play around I guess with the angle of your chin and how open the airway would come. Yes…

Dr. Park: One of the ways of doing that if you happen to sleep on your back is to use one of those contour pillows, where it gives you much more support behind your neck and lower down in the top of your head…

Chip: Yeah that's a good point.

Dr. Park: Yeah, it brings your chin up a little bit.

Chip: So that's certainly one thing. Sometimes the pressure can be lowered, it could be a sign that the pressure is too high for you to be able to accommodate it. And so, if that's the case then in some cases the doctor might be willing to lower the pressure a little bit. There's always a tough analysis done there because you don't want to lower the pressure too low where it's not going to provide the therapeutic benefit but it's certainly worth a conversation with the doctor.

I'm just trying to think here. You know, it's possible I guess, in some cases that a switch to an auto set might be something that would be beneficial to some of those patients. I think and most often in our case is we found the patients really do work their way through it. We have had a few patients that have had their pressures lowered in order to get through it but that's a tough one. So really, that's the answer I give that I can provide.

Is it your opinion? This is from Rob Prescott or in Prescott, is it your opinion that

every PAP user should be using a machine that provides efficacy data. Why are machines with only compliance data being given to anyone?

You know, my answer to that, that's a tough one, it's a gray one. That could be a conversation in and of it self, that we could spend an entire time on. But at this point, it's certainly not necessary. If there's an addition, the answer is an additional cost, kind of like for the same reason why everybody's not on BiPAP or BiPAP auto.

Well, there's an additional cost of fifty to seventy-five bucks about there between tiers of machines. A ResMed Escape which is their model that provides only usage data versus a ResMed Elite or Elite 2, you know, there's this tier and there's no payment that's made for that so for us to say every thing's just going to go out as efficacy data. While it would be great to do it, we couldn't do it, we couldn't survive like that especially if you're thinking that no ones asking for it or going to use that data, it becomes worthless.

Now, I would say for people that are either new CPAP users or are going to go to a machine like they have a machine right now and their interested in going to a new machine, I will say this, that either upon doctor's request because they really do use that data or because of patient requests because the patients want to be involved in their therapy which for us is a great thing. You absolutely should be having conversations with your DME companies to say, "I did my research, this is the machine. I'm interested in, here's why. You know, can you provide that to me or under what conditions could you provide it to me.

Those kinds of conversations that go back to communication, I think with your DME company. In a perfect world, Rob, it would be, you know, there some insurances and this is why it would take almost another full webinar to go over it but you get back into that insurance coverage. There are some insurances that don't even cover the cost of the entire set up. There's other insurances that pay great and you just kind of hope as DME company at the end of the day that the blended mix is the right mix that you can do OK, because if it's that one that's not covering it, they don't even cover a machine that just provides the usage data let alone bumping up and giving everyone an efficacy data.

So we don't break it up and say you have this insurance you're getting this. What we're really saying is we're going to provide you with what the doctor wants and we're going to provide you with a machine that you're going to be satisfied for as a patient, especially if you're going to be involved in your own therapy. So that's the best solution that we've arrived at today.

I think the best thing I could hope for because we do see value in this efficacy data. While it's not perfect, per Brian's comment earlier, even then that's a line that's coming from some of doctors that developed the technology, its real good data. It's still interesting stuff that can provide interesting benchmarks and indications and stuff that can help us out especially if someone wants to be active in their therapy. But the best thing that could happen is to get the insurance companies that we have a code out there.

Like I had talked about before, everything is built by code, face mask is its own code, humidifier is its own code. Well, there's a code out there that Medicare created and all insurance companies can take it now that is a data code. Where to read data, to submit data to show that you're using it, you should be able to get a reimbursement for that. They've applied zero dollars to that, so basically they're not reimbursing for it, they kind of hopefully, at some point they will. And that would be a reason why every company out there would want to supply that and get that out there.

But I think Ed Grandi had spoken at one of the Manhattan AWAKE group meetings and this just comes down to the more that CPAP users become a force out there and they make people aware of how things should be handled. And that will push insurance companies, it will push Medicare, it will push everyone to try to do this the right way. Until that takes place, we're kind of left with the system we have which unfortunately is insurance companies treat CPAP delivery as an event instead of a process.

The day they go to reimbursing and wanting to see therapeutic data to want us to prove that we gave out that CPAP machine, patients using it, here's their AHI, that's the date that we'll have moved this thing to where they're now treating it and recognizing it as a process as opposed to a chronic condition and as a process as opposed to an event.

So from Sam Moore, the next question is what do you mean by a central event? And that is the different type of apnea, the main type of apnea is an obstructive event or obstructive sleep apnea. And by its definition, an obstruction occurs in the airway blocking the airway and CPAP is designed to fight through that. For a central event, that's really one where the trigger to breathe, you have an open airway, there's no blocking that's occurring but there's still no breathing that's occurring even though the airway is open. So that is considered a central event and that would be one where the trigger, the signal is not sent actually to go ahead and breathe and it could be for multiple reasons but it's often times associated with cardio vascular issues. So a lot of the patients we have that get machines that have the ability treat central events are often times at this point referrals from

cardiologists.

Now again, those new machines that are on the market, the ResMed and the Respironics System I and the ResMed S9, now that they can differentiate that data it helps I think screen better from obstructive patients and identify the ones that might be having central events that we would not have known about before, before this new iteration or new machines. So….

Dr. Park: Last question, then.

Chip: Yeah, there was quite a bit of talk about humidification for the CPAP machine. I'm sorry, you know what, there were two more here if I could just briefly say it, I have mixed apnea and that's from Danny, what machine works best? And that's one where you want to be having a conversation with your cardiologist and your sleep doctor for mixed apnea. Mixed means you're having both obstructive and central events. It's very likely depending upon what the ratio is of those central events to the obstructive ones that you'd want to have you physician consider one of the ASV machines that will cover both. But that's one certainly to have a follow up discussion with your doctor about.

Steven, there was quite a bit of talk about humidification for the CPAP machine. I don't recall what the purpose or benefits of humidification are, can you please address. I think the biggest one there, Steven, is first of all just comfort, right? Before, when these machines first came out and there was no humidification attached or integrated into the system, people would wake up just incredibly uncomfortable, sometimes could be a bloody nose, it could be just something that would really cause a lot of people say, "I'm not going to use this thing, it's not worth it."

You know, the technology increased where they, first of all, had what we call Passover humidification which would just pass over the water and you'd get a very little bit of humidification. And now, pretty much all these machines it has become standard that they heated humidifiers that are either an attachment or built right into them. And that's again, designed to provide that grater level of comfort and therapeutically where it comes in and it's important is if you're using a mask that delivers the air either in a nasal pillow or as a nasal mask - basically just through the nasal passages and your mouth is outside the system.

If you don't have good enough humidification, that humidification oftentimes, will leave to dryness. And dryness oftentimes will also lead to congestion and if you get too congested your mouth will open up to compensate. So you might not behaving an apnea but you open up your mouth to sleep again with your mouth

open and that air that's being brought in through your nasal passages, some of it's now leaking out of your mouth. So that's considered a mouth leak.

The point is that some people are just mouth breathers and need a full face mask and other people open up their mouth because they might be getting too dry or not have good enough humidification. So that's another reason why humidification is important.

So anyway, I think we're wrapping up here. Again, if anybody has questions, feel free to go through our website, www.restorationmedical.com and click on contact us or you can email me directly at csmith@restorationmedical.com. More than anything else, thank you for the opportunity. I think we covered a lot of ground again, so I hope parts of it weren't too mundane for many of you. I hope we got it as much as the information that you were hoping for if you logged on and if not, feel free to provide the critique also via the email but ask any questions that might not have been answered today. And I thank you Dr. Park.

Dr. Park: Thanks Brian and Chip, I certainly learned a lot. So that's it for tonight's program. Thanks for joining me and I hope you found it helpful. Just a few announcements about upcoming events, on Tuesday, August 8th, I'm hosting my next Ask Dr. Park program on Upper Airway Resistance Syndrome. As Ive neen known to say in the past, my feeling is that UARS is more common than obstructive sleep apnea. Please check my website, doctorstevenpark.com for upcoming events for more information.

So that's it for tonight! Thanks for joining me. For more information about this program or for other past topics, please visit doctorstevenpark.com. This is Doctor Park helping you to breathe better and sleep better so you can live better. Until next time, good night!

Everything you ever wanted to know about PAP/RAD machines

Treatment – PAP/RAD Therapy

Once diagnosed with OSA (the most common type of sleep apnea), the gold standard for treatment is PAP/RAD therapy, where an open airway is maintained by air pressure from a PAP/RAD machine.

Treatment options:

- Continuous positive airway pressure (CPAP or PAP therapy) provides one constant air pressure all through the night. Pressure is established during titration study at sleep clinic.

- Automatic positive airway pressure (APAP or PAP therapy) automatically varies the pressure all through the night and from night to night. It actively responds to the continuous changes in your upper airway

- Bilevel (RAD therapy) provides a higher pressure when you breathe in, and a lower pressure when you breathe out

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- ASV Treatment (RAD with backup) therapy – CSA Treatment

CPAP (PAP Therapy)

CPAP (pronounced "see-pap") - Short for "continuous positive airway pressure“. Most insurances now using “PAP” therapy designation to encompass both CPAP and APAP therapies. Positive airway pressure therapy is the most effective noninvasive treatment for obstructive sleep apnea (OSA)

How does CPAP therapy work?

- Air is pushed from the flow generator through the tubing and mask. The air then passes through the nose and into the throat, where the slight pressure keeps the upper airway open.
- The low air pressure does not interfere with breathing, though some people need a few nights to get used to the sensation of positive airflow.

Keys to Successful CPAP treatment

- The proper treatment pressure, a comfortable system and good education often mean the difference between success and failure for CPAP users. Treatment success means sleeping better and getting more enjoyment out of waking hours. It can also mean lowering blood pressure and resolving OSA symptoms.

CPAP (PAP Therapy)

MOTIVATION FOR SUCCESS…

Successful CPAP users report improvements in:

- Vitality and motivation
- Job performance
- Mood
- Sexual drive and performance
- Alertness while driving
- Quality of life and quality of sleep

Failure to use CPAP therapy may increase your risk for conditions linked to untreated OSA:

- Hypertension (OSA increases your risk of hypertension by up to five times)
- Stroke and congestive heart failure (CHF)

APAP

- Short for "automatic positive airway pressure"
- Automatically adjusts, on a breath-by-breath basis, to deliver the minimum pressure needed to keep the upper airway open during sleep. This allows the device provide you with your ideal pressure over the entire night
- Tend to be more advanced and contain more features than CPAP devices
- May also be known as:
  - Auto-adjusting CPAP
  - Auto-titrating CPAP
  - Self-adjusting CPAP
  - Auto PAP
  - Auto

- Third-party clinical trials have found that some autotitrating devices prevent more apneas and hypopneas and operate at lower average pressures than fixed pressure devices... This may lead to overall lower pressure and greater comfort.
- Some apneas will occur without any precursor, and in these situations, an AutoSet device responds to the severity of the apnea.

APAP

MYTHS DISPELLED…

Are all APAP devices the same?

- No. Although these machines use complex algorithms, each manufacturer's device uses a different — usually patented — algorithm that responds to different signs of snoring, flow limitation, hypopneas and apneas.
- The algorithm largely determines the quality and comfort of treatment, so if you are prescribed an autotitration system, please realize that your experience with one manufacturer may vary from your experience with another.

Are APAP devices the best machine to use?

- Not necessarily, some people are not comfortable with the change in pressures throughout the night and are aroused by them and some treating physicians are not convinced that they provide the same efficacy as CPAP.
- Algorithms are not perfect

Bilevel (w/out Backup Rate)

- For people with Obstructive Sleep Apnea (OSA) if they are unable to tolerate CPAP. This typically needs to be proven in either a clinical setting or from failure to comply with a prescribed PAP through use in the patient's home.
- Provide noninvasive positive pressure ventilation (NPPV) for people with respiratory disorders or other forms of Sleep-Disordered Breathing (SDB)

- Bilevel therapy works by delivering two different levels of positive air pressure:
  - A higher level of pressure when you breathe in
  - A lower level of pressure when you breathe out

- Although both are non-invasive, Bilevel and CPAP therapy differ in two significant ways:
  - Bilevel devices deliver two levels of air pressure that are set to coincide with the patient's inspiratory and expiratory efforts
  - Bilevel therapy can be used to treat conditions other than sleep apnea (OSA) and is the first line of treatment for a wide-range of respiratory disorders

Newest Products on Market

- Respironics System One (CPAP, APAP & BiPAP)

- Resmed S9 (PAP & APAP only)

Benefits of new products:

- Technology – more complete therapeutic data, easier to gather usage data.
- Comfort features – flex, anti-rain out
- Look

Compliance Tracking/Capabilities

- Usage
- Therapeutic data
  - Wireless (Restraxx, Encore)
  - Wired (Encore)
  - Phone-in
  - Direct connect
  - Smart card

Features & Benefits

- Cflex, BiFlex, EPR, etc.
- Sensawake
- Heated Humidification
- Anti-rainout capability
- On screen therapeutic data

Insurance Coverage for PAP/RAD

- Varies greatly by insurance. Most rent-to-own, some immediate sale
- Many insurances (e.g. – Medicare) have trial period to confirm usage before paying in full
- PAP/RAD supplies falls under “DME” plan, typically with its own copay/deductibles
- Supplied items are billed separately (e.g. – PAP, Humidifier, facemask, tubing, etc. all billed separately).
- Supplies re-ordering – typically every 3 or 6 months.

Improving Therapy

Getting the most from CPAP therapy

- While some people adjust immediately to sleeping with positive airway pressure, many find the change difficult. Some give up and allow a serious health problem to worsen.
- It is important to recognize that if you are struggling, there is probably some way to improve your therapy. Working with your DME is the best first step.

Therapy can be more comfortable and more effective.

- Consider the goal of therapy. It's simple - - stop the effects of sleep apnea and get a healthy sleep

- Use your therapy whenever you sleep, day or night. Generally speaking, the more you use therapy, the more you will achieve in managing your sleep apnea

- Make sure that your mask is comfortable and there are no leaks between your face and the mask. Work with your DME to pick the best mask for your individual case. And, if the first mask doesn't work for you, find an alternative

- Many patients find that using heated humidification, EPR/C-Flex (when needed) and other recent features and benefits makes their therapy much more comfortable.