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Bringing it Dome... Because Fit Happens

Presenter: Laura Schachtel, AuD, FAAA

Welcome everyone to today's session, Bringing It Dome because Fit Happens. We are so pleased to welcome with us a wonderful presenter and a friend of Audiology Online, Dr. Laura Schachtel. And Laura, I'll hand things over to you. Thanks, Kimberly. Hi everyone, again, welcome to our session on Bringing It Dome because fit happens.

For those of you that don't know me, I'm Dr. Laura Schachtel, Beltone's product training Development manager. And today I get the pleasure of talking about our newest dome portfolio, which are our All Fit domes. So those of you in the Belto network, most of you probably a few weeks ago received your like tackle box full of the domes and hopefully you've had some time trying these on some of your patients. But today we're going to talk about, you know, how we came up with these All Fit domes. Some of the advantages for using these like the properties of the dome, occlusion properties of the domes, and then we'll kind of round out with a few case studies so there will be some audience participation closer to the end of the presentation.

So as Kimberly said, there's a few handouts and there's one I kind of want to highlight. It is the dome or the All Fit dome fitting guide. I would say it's just a very useful handout, at least initially. As, as I start talking about the domes, they have more sizes, but also the diameter of those skirt sizes have changed. So what you knew as a small size with SureFit 3 does not necessarily mean that it is the same small now with an All Fit dome.

And the second sheet of that handout really does lay out the difference in those skirt diameter. So it's a good reference tool, at least until you kind of learn the right dome for that patient's ear. Again, if you can't download the handouts here, most of them are on our training homepage, which is beltoneuniversity.com so let's continue on with our learning objectives for the course. So after today you should be able to describe the improvement seen in our new All Fit dome portfolio. Be able to list the different occlusion properties for the different All Fit dome styles, and then lastly be able to identify

the appropriate All Fit dome that you would select for a patient based on their ear canal anatomy, hearing loss configuration, and then their occlusion properties that you want for whatever lifestyle they have.

These are just the risks and limitations of this course. So you can peruse those after the course if you need to.

There we go. Just got my computer stuck here. So you have told us for quite a little bit of time that you wanted more dome options than what we currently had with our SureFit 3 domes. This kind of seemed like it had been going on for a few years here, but we were finally able to, based on your feedback, based on what you were asking for, we listened and we're really excited to launch this all fit dome dome portfolio. So we've now increased the number of dome options that you have to select from from 10 now up to 19.

And this delivers about a 97% coverage based on approximately 16,000 year impressions from our full GN database. So this means that these sizes and domes were decided based on data taken from real patient ears, not like AI generated model. So real ears, we analyze, you know, where they overlap. Is this the correct diameter for a medium or should this be a small. Do we need five dome types or we just need three in this particular style?

So it really did come from actual patient ears. You also asked for a different wax protection system, something that maybe is a little bit similar to what other manufacturers have. And so we were also able to integrate that into our new all fit dome portfolio. You also asked for a different style of dome, one that we didn't have again because some other manufacturers maybe had something similar. So we're excited to now offer our new sleeve dome that provides a custom like fit and is recommended for when you're fitting that Marie receiver.

And then lastly, you asked us to improve our acoustic properties and durability. So our all fit domes are made from a more robust medical grade silicone, just like our SureFit 3. So they're essentially the same, it's just they're a slightly darker color. So the dye we put in there is a different color than the dye we use for the SureFit 3 domes. So it's that same silicone.

But because the material is a little bit more robust, these all fit domes can maintain their structural integrity when in the ear, allowing for the attendee acoustic properties to be realized. So this means no more domes like collapsing in on themselves when in the ear canal possibly is taking an open dome and now making it slightly more occluding because those pains collapsed in on themselves. And it also maybe helps for a patient that had a prolapsing or collapsible ear canal, where a guy that ear needed a little bit more structure from a dome to help keep that canal open. And this more robust material hopefully makes it a little bit less likely for these domes to possibly tear as your patients are Handling that. So the best news is, is that these All Fit domes are compatible with our SureFit 3 and 2C receivers and thin tubes.

So you don't have to learn about new receivers or. Or you don't have to know what receiver can use All Fit and which ones can't. It's pretty much all the receivers that you're probably using on most patients can use our All Fit domes. So let's go ahead and walk through these changes in a little bit more detail, starting with our open dome and then ending with our most occluding dome, which is our power dome. So again, starting with the open dome, it is now available in five sizes.

Extra small, small, medium, large, and extra large. Again, as I'm going to say this many times, just be aware that the diameters are different than our SureFit 3 domes. So if you have a patient that was in a medium, let's say SureFit 3 Open Dome, you might have to put them in a large All Fit open dome because the medium might be smaller than what the patient was used to. So again, that All Fit dome guide is going to be your kind of friend for the next few weeks as you try to figure out the sizings. There

also might be a.

So as I said, yeah, a slight fitting curve. So when we look at our All Fit dome, you might notice that it looks a little bit different than our Sure Fit three one because we have smaller vent panes or window panes, if you will. And this allows for more low frequency enhancement than what we had in our SureFit 3 domes that had those larger open pains. So this provides low frequency response for the patient. So when they're streaming any type of music or audio, they're getting a little bit more of that richer bass response, which for patients who stream, and again, whether that's music, podcasts, phone calls, just the TV from, you know, the TV link, TV streamer, plus they want a little bit more bass.

And so by kind of reimagining our open dome, we're kind of blending both worlds of allowing the ear to be open, but also keep a little bit more bass trapped in the ear for that streaming patient. This graph shows that low frequency enhancement of our All Fit open dome compared to the SureFit 3 open dome. So the All Fit is the solid blue line where the SureFit 3 is the dash lighter blue line. Again, with the new All Fit open dome, more low frequencies below 2K are kept in the ear canal. So you can say that our All Fit open Dome is more occluding than our SureFit 3 open dome.

And again, this slight increase in occlusion helps provide that richer streaming sound quality. And again, a lot of patients do like that. Those of you that have heard me train know that I'm all about occluding a patient's ear. So when I learned that the new All Fit open dome had a little bit more occlusion, I, I was very happy to hear this. And I hope that if you are using this dome on a patient, that your patients kind of realize that occlusion is not bad.

It's actually a good thing. So this is what I'll call our dome fitting range. And we're going to see this for all the different dome types, but it kind of gives you an idea of when you should use which dome type with a kind of audiogram. So open dome is generally recommended for someone with mild to moderate hearing loss, maybe with normal or borderline normal hearing in those low and mid frequencies, and

just kind of more of that moderate loss in the high frequencies. You'd probably only be fitting an open dome on someone with a low power receiver, possibly a medium power receiver, because that just physically fits better in their ear than the shape of a low power receiver.

So our Tulip Dome is a great dome. This is the dome of choice I always use for the person that had the least amount of hearing loss. I didn't really fit open domes. But the great thing here is now that the Tulip Dome comes in two sizes. So it's that standard medium size, which is the same size as the SureFit 3, but then we have the small, which is just a little bit smaller.

So for those more petite ear canals, where you really wished we had a Tulip Dome that was smaller, we now have that. So when you think of acoustic comfort, the tulip dome has that unique flexible shape, which makes it a good choice for a variety of ear canals, especially those that are narrow or curvy. So if your patient has more of a oval shaped canal, if you actually looked at the front of the tulip dome, it is more oval shape than like our open dome or our vented dome. So someone that has kind of that oval shape, or I would say like a tapered, more tapered canal, this is a great choice also if they have curvy ears, because those petals, if you will, can kind of nicely collapse on themselves, making it easier to kind of maneuver around that curvy canal. So again, here is our fitting range.

I'm going to overlay that tulip dome on the open dome. And so you can see that using a tulip dome, more sound is kept in the ear canal, especially in those low and mid frequency ranges. So there is more occlusion when you use that tulip dome. So this again, is a great alternative for someone who wants to kind of feel open. But we might be running into the risk of some feedback if we actually fit them with an open dome.

A tulip dome is recommended for patients with mild, moderate, or even more steeply sloping hearing loss. And it's recommended to be used with low and medium power receivers. So our new dome type, the sleeve dome, was requested by many of you out there. Again, because there's other manufacturers

that have something similar to this. So this dome is available in three sizes, a small, medium, and large.

And again, you can just see that it has kind of that tapered body style similar to the tulip dome. They both have that tapered body style. I just want to say that when I would wear hearing aids for demo purposes, I really liked using the medium SureFit 3 closed dome. That was kind of my dome of choice. I really enjoyed it.

So I figured, well, I'll just put on a medium sleeve dome. I didn't look at the guide to see if that was the right choice for me. So the medium sleeve dome fit in my ear just fine. But after a few minutes of wearing the hearing aid, my ear kind of got a little sore. Like, the dome was just a little too big for my canal.

So I switched to a small sleeve dome. And then that fit way more comfortably. And I didn't have any of that kind of irritation or kind of ear slight ache from wearing that for like a few more minutes. So again, just refer to that handout. It will definitely help you.

Now, this dome was designed to offer a comfortable fit in the ear and is a good option for those patients, again, that have a more narrowed ear canal because of the way it's tapered. This dome was also developed to address some of the, I'm going to say, feedback pain points when fitting Marie. So in our internal testing, we found that the sleeve dome provides better stable gain than several of our SureFit 3 domes. And so therefore, there is less opportunity for feedback to occur. So overall, our sleeve dome provides a comfortable open feel with a fuller bass response, similar to what a closed dome offers a patient when they're streaming.

And just a quick note of caution here when using the sleeve dome, because you can see how long that skirt is. It will most likely interfere if you're using a sports lock. So for that reason, excuse me, we recommend that you don't use a sports lock if you're going to use the sleeve dome. If you are going to

put this on a thin tube, I believe our sports locks are kind of molded on that thin tube. So you're just going to have to cut that off and then use the sleeve dome for a patient.

Now, again, if you've heard me talk about receivers and dome and proper fit, I don't really like the sportslocks. I always felt it was we needed to put this on a patient because we don't have the proper dome or dome size in their ear. So I love that. Now we're basically made a dome where you can't use something because of how long that skirt is. It should hopefully kind of stabilize the canal.

And if the patient has any jaw, like, excessive jaw movement, they should be able to keep that dome in their ear and not have to keep, like, pushing it back in. So again, you cannot use this dome if you're going to use a sports lock. Also, the nice thing about this dome, we had some internal staff wearing these domes for a while who also wear hearing aids. One commented that they liked the way it felt. Again, because of how long that skirt body is.

They didn't feel that breaking point, if you will, between where the dome stops. And then you can, like, maybe feel that receiver. They just had this nice smooth silicone on all of their ears. And also, just depending on which size sleeve dome you're using, it could potentially cover the whole length of that receiver. So obviously, the large is the longest, the small is a little bit shorter.

So a patient might have a little bit of receiver peeking out of the back of it, but it does kind of COVID that whole body of the receiver. And as you know, our Marie is kind of long. So again, this dome kind of covers most of that receiver as well. So again, the sleeve dome is a good alternative for a patient who probably needs an ear mold. But for whatever the reason, that's not the next step you're going to take.

So this is a good in between where we can maybe get a little bit more stable gain. Especially with Marie before, we might have to then jump and do an ear mold. So when I'm going to now put the fitting range on top of the tulip dome, you can see that they're pretty much about the same, except the tulip dome

does have a little bit more ability in those higher frequencies. So the sleeve dome is kind of recommended, especially the same as a tulip. So again, mild and moderate hearing losses.

Maybe not so much of that sloping loss anymore. Again, you can use this with a low or medium power receiver. And again, it's the preferred dome when using a Marie fitting. So since the sleeve dome is new in our product portfolio and it does take a slight learning curve to figure out how to attach that correctly, let's watch a quick video on how to attach and then remove the dome. To replace a sleeve dome on a Beltone hearing aid, begin by removing the sleeve dome currently on the instrument.

Remove the sleeve dome by holding the receiver, gently pulling the dome away from the receiver wire. Discard the used dome. The first method begins by aligning the curve of the sleeve dome with the angle of the receiver nozzle. Make sure the opening of the sleeve dome is positioned vertically to match the shape of the receipt. Push the new sleeve dome over the end of the receiver until it is fully seated and secured.

The second method begins by turning the new sleeve dome inside out.

Push the new sleeve dome over the receiver nozzle until a click is felt. Turn the sleeve dome back to its original shape.

And I will tell you that when I tried putting the dome on just regularly like any other dome, I couldn't. So I had to use option B where I flipped it inside out and that made it much easier. And then eventually I was able to just attach it like with option A. Though I will caution you when you're flipping the domes inside out, obviously it's easier to do that with the large dome than the small dome, just because there's not quite as much room to flip. So I would just say practice this a few times before you do this in front of a patient.

And then this brings us to our vented dome, which is also available in five sizes. So extra small size, small, medium, large, and extra large. And again, just go to your handy guide there to know the diameter size so you're picking the correct dome for the patient. It's also nice to do otoscopy after you put a dome in to just ensure that you're having a nice little seal against the canal wall and that none of the material is like folding on top of itself, which probably means it's a little too large for that patient's ear.

So you might be wondering why we're calling it a vented dome and not a closed dome. And it's just because we got some comments back where some of our providers felt like by saying it was a closed dome, it meant that there was like a lot of occlusion and it was like kind of a fully occluded dome. And that was not the case and that's not the occlusion property of the closed dome. So just to kind of clear the air and make sure that we have a name that really matches the occlusion property, we retitled it, titled it the Vented Dome. And so the Vented dome does offer one more vent hole than the predecessor.

So then the SureFit 3 dome. So there's even a little bit more venting in this dome than what we had before.

So again, just kind of adding the vented dome on top of the tulip and sleeve dome, you can see that that fitting range also kind of aligns a lot with those other two dome styles. But it is a little bit more occluding, so you get more of those low and mid frequencies trapped in the ear canal. This also helps someone who is kind of more heavy into streaming quality to get that bass quality that they like. A vented dome is recommended for mild, moderate, and those sloping down hearing losses. And, and again, it's recommended to be used with low, medium.

I would even say you could push it to some high power receivers if they're not using all of the gain out of that receiver. And you can also use a vented dome with Marie fittings as well. And so this brings up

our last dome, which is our power dome. And it is now available in four sizes, so small, medium, large and extra large. As with our other domes, just get used to the new sizing of them.

Now, as you might be aware, the Power dome is our most occluding dome. And it's ideal for fittings that require more gain. And it also provides the greatest amount of bass response, which offers superior streaming sound quality. And so here is that fitting range, if you will, for the vented dome going to overlay the power dome. And so again, you can see that a lot more low frequencies are kept in the ear canal because of how occluding that power dome is.

A power dome is recommended for moderate and severe hearing losses and to be used on medium and high power receivers. And again, you can also use that with Marie as well. It's just the more occluding domes are okay to use with Marie because of that feedback loop. So I'm going to take all this information and we're going to look at it in a graph format. So this graph shows the frequency responses of all of our new all fit domes.

It used a pure tone sweep on an ear simulator. Just note how that power dome's response is essentially a consistent flat line across most of those frequencies out to about like a thousand hertz. And that's the black line at the top by that hundred db line. Also note how the acoustic energy in the low frequencies disappears. The different dome types become more open. And what we're looking at is what we call the vent effect.

So I'm going to now flip to this slide. And so this is very much that same graph, but now we are definitely looking at the vent effect. So we're looking at the occlusion properties of all of our other domes in relationship to that power dome, because the power dome has now been normalized to 0 dB as the reference. And then every other dome's occlusion property has been subtracted from this. So this illustrates the reduction of low frequencies due to the venting properties of the dome.

And again, you could see that the vented dome is the next occluding dome. But again, I mean, you can see at what, 250, we're still not getting any gain. We're like negative 20dB of gain at 250. So we're still not getting a lot of those base frequencies even with the vented dome. The next occluding, I call it a tie between the tulip and the sleeve dome.

You can see they kind of crisscross each other. But again, and still the most open dome is. Our most non occluding dome, I should say, is our open dome. So with all these new dome styles and sizes, let's review the importance of selecting that correctly fitted dome for a patient. So a proper fitted dome is critical for feedback prevention.

It creates a gentle acoustic seal that minimizes the risk of amplified sound leaking out of the ear and then re entering the microphone and getting re amplified. Since sound leakage is a primary cause of acoustic feedback, careful dome selection and again, verification with otoscopy are essential for good hearing aid fitting and consistent use by the patient. Also, a properly fitted dome helps ensure that the receiver is seated in the optimal position in the ear canal. And so sound can efficiently go up into the canal to the tympanic membrane and up through our ear. An improper fit can lead to sound leakage, reduced gain, and a degraded sound quality.

So again, having that right dome, the right size, allows the receiver to stay where we want it, not have it kind of push around or have the patient have to keep pushing the receiver back in their ear as they're talking or chewing. Now, a good seal with a more closed dome is necessary to to achieve better hearing in noise. This allows the directional microphones and digital noise reduction to work more efficiently and effectively. The hearing aids can attenuate sounds from the non targeted direction or from like the back and then emphasize the speech that's in front. And so for those of you that were with us at our Beltonin Vision trainings about this time last year, when we demoed the sound quality with our dnn, we purposely used that closed or power domes because we wanted you to hear the needed

acoustic properties of the new directional microphone and of that DNN system.

If we used a more open dome, you wouldn't have heard those features kick in. So again, occluding the ear kind of forces all that background noise to go into the hearing aids and get cleaned by all of the advanced features. If someone's ear canal is just wide open, then all that background noise can just go in naturally and it's not getting cleaned by all the advanced features in the hearing aid. And then as we've already kind of talked about, a more closed dome helps keep those low frequencies in the ear canal and it provides a better audio streaming for the patient. So wax is one of the main causes that a receiver can fail.

And to help address this, our all fit domes now have a protective loop to help keep the wax from entering the receiver port. This new loop combined with the underlying mesh from the Gnwax filter screen, creates a double barrier preventing wax from plugging up that receiver. Now, this wax loop might not be new to the industry because again, some have requested this because they've seen this on other manufacturers dome, but this was a new concept for me. So I was trying to think how I could explain how this kind of loop protrusion works. So if you can think of the loop as an umbrella.

So the receiver opening is the umbrella pole in the middle and wax is the rain trying to run down towards it. Instead of letting the rain or the wax flow straight down into the middle where the receiver sits, the loop helps redirect all that rain all that wax away, reducing the chance that the wax will actually travel directly into that receiver opening. And because this is new to our products, let's watch a quick video on how you and your patients can clean. Is important to clean our beltone All Fit domes with the wax protection loop, using the supplied cleaning cloth and brush with the wire loop to clean ensure best sound quality for your patients.

To clean your beltone all fit domes, use the soft dry cloth to gently wipe the dome Clean each day.

When needed, use the wire loop end of the brush to scoop out any wax that accumulates in the tip of the dome.

Regular cleaning of the domes helps support optimal performance and sound quality of our Beltone hearing aids.

So now that we've reviewed all these changes and benefits, here comes the audience participation. So we're going to have a few polls. I've got three cases where we'll give kind of a quick rundown of a patient and then it's up to you guys to kind of let me know what dome you would fit for this patient. So we're going to start with Jane. She is 55 years old, has a moderate high frequency sensorineural hearing loss.

She previously used low power receivers with open domes, but now she's changing to a Marie receiver with these new hearing aids she purchased. So with her old hearing aids, Jane needed to continuously push her receivers further into her ear canals after eating. And she also noticed that she. And you've also noticed. Sorry.

That she has narrower ear canals and you suspect that she might have collapsing canals. So the question is, as you can see from the poll, which dome would you fit with Jane on her new hearing aids? That is, she's going to get with a Marie receiver. Again, she had to keep pushing her receivers in after eating as she has kind of narrower ear canals and possibly a collapsing canal. So what dome do you think would be best for her?

I'll give you guys a minute to vote. Hopefully you're voting and playing along.

And you guys chose. Awesome. All of you chose the dome. I would select which is the sleeve dome. The sleeve dome can provide a more secure fit for Jane.

So with those jaw movements, it might be a little bit more comfortable. And also the sleeve dome is great for someone that has narrower ear canals than a more rounded dome like the open power or vented dome. And because that skirt, I'll call it, is longer, again, that could help if her canal is collapsing to kind of put some pressure there to keep the canal from collapsing. Tulip and vented were also good choices for her amount of hearing loss. But we still feel like tulips.

Not great for a Marie receiver. It's not really recommending. And again, that vented dome, since it's round, she might still have to be pushing that into her ear canal. Okay, so now onto Alex. He's 34 years old.

He has a mild, gradually sloping to moderately severe sensorineural hearing loss. He's currently wearing medium power receivers with our new sleeve dome. But he's noticing that when he streams music. It doesn't sound as full as it does when he has his earbuds in. So the question to you, if you will vote in the poll, is what dome might you switch Alex into?

Would it be an open dome? Keep him in that sleeve dome, use a tulip dome, a vented dome, or a power dome. Again, he's in a medium power receiver currently in that sleeve dome, but he wants music that he's streaming to sound like it does when he's using his earbuds. So let's see what people have decided they would refit Alex into. And yes, again, you guys are spot on with my thinking.

I think the best choice for Alex would be a vented dome because it offers more bass occlusion than the sleeve or the tulip and open dome while still giving him a little bit more venting than possibly that power dome. And just a reminder that patients who say they like the streaming quality of their earbuds, their earbuds really do occlude them a lot. So you might kind of push them into something a little bit more occluding. Okay, last case here we have Emma. She's 74 years old.

Again, she also has a mild, gradually sloping to moderately severe sensorineural hearing loss. Emma has curvy ear canals and she reports feeling physical pressure and a plugged up sensation when using a properly fitted vented dome on her medium power receivers. And it causes her to remove her hearing aids periodically throughout the day, which we don't want. So again, your question is, what might you refit Emma into? Would you keep her in those.

In the, in the vent dome, or if you were to refit her, what would it be? Again, she has curvy ear canals, feels some pressure and a plugged up sensation that causes her to take out her hearing aids for a portion of the day. So go ahead and vote and then we can see what you guys have selected because so far you've been spot on. And again, you guys are spot on with what I'm thinking as well. I think the best refit for Emma would be a tulip dome because it does provide a similar sound quality, similar to vented, especially for her hearing loss, but offers a little bit less occlusion, which might eliminate that feeling of plugged upness for her.

But if we went open dome, we'd probably get a little too much feedback. Also because the vented dome is round and the tulip dome is more tapered, and that might help take off some of that feeling of pressure that she's feeling in her ear canal. Now someone said sleeve dome just due to that longer skirt. It's a little harder, as I said earlier, to maneuver that around those bendy ear canals. So the tulip with the slightly shorter skirt is better for those bendy ear canals.

Just real quick, one thing in Solus Max that was new. When you're fitting an RIE hearing aid, you'll see on the physical properties screen this header called earpiece type. So if you're fitting a dome, it will now list all of the domes with the All Fit on top and then the SureFit 3 is at the bottom. That gray recommendation badge of which dome, the fitting software based on the patient's audiogram we think is best to use is only going to be seen now when with an All Fit dome. So you will not get a SureFit 3 Dome as a recommendation.

But if you were going to put an ear mold on this, you would click under earpiece style and click on ear molds. And now that dropdown for earpiece will list all of the ear molds with the different venting options. So just kind of separating out domes from ear molds for our receiver products. If you're fitting a BTE just like you always have, the earpiece is the earpiece and then you'll select the appropriate vent that you selected for that patient. So to summarize, our new All Fit dome portfolio was created based on your feedback.

You asked for more sizes and now we offer options that can fit up to 97% of patients ears. You requested better wax protection, so we added this new wax loop. You wanted different styles and so we introduced the sleeve dome to help support better fittings with Marie. And finally, our All Fit domes are now more robust, enhancing both comfort and durability for your patients. So just reviewing again, our All Fit domes now are offered in more sizes, a new style, better protection against wax, and improved occlusion performance.

Our All Fit domes, our All Fit open dome delivers an enhanced low frequency response while still being our most open option. And as always, our power dome continues to be our most occluding dome that we offer. Our new sleeve dome is recommended for Marie fittings because it provides more stable gain with fewer opportunities for feedback. Now for patients again with narrow or oval canals, the sleeve and tulip domes are recommended to help keep sound in the canal without creating unwanted physical pressure. And so with that, I just want to thank you all for taking 30 little bit over minutes with me this afternoon to learn about our All Fit Dome portfolio.

No questions have come in, so if you do think of something, please feel free to reach out and just email me if you do have questions. Otherwise, again, thank you so much for joining me for 30 minutes and I hope to see you on another training soon. Enjoy the rest of your day. Bye. Thanks everyone.