Sleuthing for /s/ and /r/: Facilitating Strategies for Residual Sound Errors

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- [Amy] Once again, welcome to our webinar today. Sleuthing for /s/ and /r/: Facilitating Strategies for Residual Sound Errors. Our presenter today is Lynn Berk, MA, CCC-SLP. She has worked as a speech language pathologist in the schools and in longterm care settings. She has developed and published two remedial programs, "Testing and Remediating Auditory Processing "for Preschool and Elementary Students" and "R and L Stories Galore, "a Remedial Articulation Program". Lynn's areas of interest include phonemic awareness, phonology and articulation, auditory and language processing and reading and literacy. Currently Lynn is a clinical instructor at Kent State University, providing accent reduction therapy for international students and articulation therapy for school aged children. Lynn we're very pleased to welcome you here. I'm gonna turn over the platform to you and you can turn on your mic and your webcam.

- Thanks Amy for that introduction. Welcome everybody and thank you for joining me today and spending a part of your afternoon with me. I'm really excited to share with you this afternoon. So we'll get started, sleuthing for /s/ and /r/. So sleuthing as the word indicates is we're gonna do some detective work today, and I'm gonna walk you through some evaluation procedures. Some of them you probably will be familiar with and some maybe not, and facilitating strategies. I'm going to give you some facilitating strategies for working on these residual sound errors. And then I have quite a few case studies that I'm going to go through as well. So, I'll get through the first slides here, some disclosures, financial disclosure, I'm being paid an honorarium for this presentation. I have authored therapy materials related to this topic, but they're not the main focus of this presentation. It does not focus exclusively on the product that I have and this course is presented by SpeechPathology.com. Okay, learning outcomes. Okay, so hopefully at the end of our time together, you will be able to describe how to determine when intervention is warranted for /s/ and /r/. You should be able to explain why assessing an accurate resting tongue position is necessary for determining an

effective plan of therapy. So we want to be doing therapy that is effective and efficient. So I'm going to show you an efficient way of addressing these two sounds. And then you should be able to identify three strategies for teaching /s/ production and three strategies for teaching /r/. And I will say I'm gonna present more than three, but you might be familiar with some of them. So hopefully, you'll be able to identify three new ones for each. Okay, so we'll get right into it now, /s/ and /r/ residual errors. So what do I mean by that? Well, Shriberg categorized 24 speech sounds into early, middle and late acquisition groups which was later confirmed by Goldstein and Fabiano. So the early eight are m, b, j, n, w, d, p, h. No surprises there and then the middle eight. That you can see them there the, t, n, k, g, f, v, tʃ,dʒ. And then the late eight, which are the ones we're going to be focusing on today. That's gonna be your ʃ, ʒ, s, z, θ, ð, l and r.

And most of my presentation is on /s/ and /r/, but I'm gonna touch a little bit on ʃ, z as well. Okay, so intervention for these two sounds. Because /s/ and /r/ mispronunciations have been considered to be developmental. Oftentimes therapy is postponed until third grade or later, but there's some factors I would like you to consider along with me. The first is that many children produce /s/ and /r/ as early as age three and acquisition is across a range.

So it's between ages three to eight. Okay, eight being the top but as early as three and I know that, you know, my grandson has both those sounds and he's four. But he had them at age three, secondly, providing therapy no later than second grade may actually decrease the amount of time spent in therapy. And I think that's very important and thirdly, early intervention allows therapy to be less intensive since production errors have not been firmly established. So those are the considerations I'd like you to consider with me that intervening earlier than later is probably a really, really good strategy. And we're gonna start today talking about /s/. So acquisition of /s/, how would we know how early we should intervene for /s/? So what we need to do is we need to ask ourselves some questions when we're doing our screenings. The first

question would be what type of sound error are you hearing for instance is it a lateralized or a dentalalized /s/. And is there any presence of a tongue thrust or missing dentition? Then we want to determine whether we're hearing a substitution or a distortion, so we know a child often we might say is substituting /th/ for /s/. Which is resulting in an interdental lisp. Whereas a sound distortion, a child is lateralizing that production of /s/ resulting in a lateral lisp. So for this first example, they might say thit for sit, but for the second example, lateral sit, for sit. Okay, now, if both of these children were five years old and being evaluated in kindergarten. What should you ask yourself to determine if intervention would be warranted for these? Either one of these children? So some factors to consider while you're thinking about that question is, a child demonstrating substitutions or distortions. So either of the two that I just demonstrated, they may present with intelligible speech, but the errors in production may not be developmental. Missing teeth or myofunctional concerns can also affect therapy outcomes.

So if you have a child who's saying thit for sit and they're missing their front teeth. You probably wouldn't pick that child up for therapy because that could hamper the ability for them to produce that sound with those missing front teeth. But if you have a child who's lateralizing /s/ and going sit for sit, that is a distortion and the sound coming out, the sides. So the missing teeth, not only wouldn't interfere with that, but I actually a lateralized /s/. Is not normal development. We're more likely to see the interdental /s/ that a child would possibly develop out of that error when the teeth come in, but a lateralized /s/ is not really developmental. It's a sound distortion and it's their /s/ and you really should intervene earlier for lateral /s/ kids because there's more going on with a lateral /s/ kid generally. Although as we move along, I'm going to show you that there's more that we can do to determine it. But I think lateral /s/ kids are best served earlier in therapy. So the first thing that I like to do when I'm considering which child I'm gonna pick up for therapy is an oral mech exam, which you're all familiar with, right? We look in the mouth, we assess tongue movement. What movements can the

client imitate? Which movements are difficult? Does the client have difficulty separating their tongue and jaw movements? So what I mean by that is if I asked them to put their tongue out like this. If you can see me, are they resting their tongue on their lower lip and trying to lift it with the lower lip. That's difficulty separating tongue and jaw movements. They should be able to put their tongue straight out and there should be a space between the lower lip and the tongue and between the upper lip and the tongue. We also want to look at the symmetry of the tongue is the tongue symmetrical in movement. So if they go side to side, is it symmetrical or do they maybe not make it to the other side?

Okay, and are there any myofunctional concerns? All right, and of course in the oral mech, we also do our diadochokinesis our patakas cause we're looking for rhythmicity. And if they can't do patakas we could do buttercup or we could do patty cake. But we want to see how quickly they can do that and accurately. An oral facial myology screening is a little bit different than an oral mech screening. So here I'm gonna look at the child's face for overall symmetry. If I'm really concerned about the child's posture and I'm talking about their mouth posture. I'm going to have that child take a sip of water and swallow, and I'm gonna observe their tongue movement because I want to know what their tongue is doing.

When they're not producing speech and also at rest. So the way that you can have them take a sip of water and you can have them turn sideways and you can watch from the side. And if the lips move forward, that could be an indication of a problem. If the lips rotate inward after the swallow, that could be an indication. If there is lick lipping, lip licking after the swallow, that could be a problem. So we're checking for all these things. So there are some outward signs, but there are not always outward signs. So if I am still concerned, what I can do is to gently pull down on the lip when they swallow. So I'm gonna ask that child to take a sip of water and when they swallow, I'm just gonna gently pull this lip down. Cause then I can see what's going on. I don't want

to see the tongue coming up to the teeth. I don't want to see it poking between the teeth. I don't want to see it approximating the teeth and no water should leak out when we do this because that shows the child is not using the tongue accurately to trap that water and to swallow. So they're not using their tongue effectively. Further, I can have the child count from 60 to 70 and then observe tongue movement because you get more opportunity 60, 61 and I don't want to see 60, 61 62, 63, 64. I don't want to see that tongue move too far forward and the reason I don't is because for /s/ and /r/, we need to activate the back of the tongue, not the front of the tongue. If the tongue is too far forward, they're not going to be able to have that tongue in a accurate position for producing the sounds.

So an inaccurate resting tongue position is going to affect speech production and it should be corrected along with the correction of speech sounds. And a good book is called, the "Tongue Thrust Book: Oral Myofunctional Therapy "And Articulation Correction", by Richardson, which is on this slide and also in your references. And what that is, is it's a set of six lessons and it's mainly meant to create accurate resting tongue position for children and accurate swallow. But as you can see, it's necessary for articulation correction.

And I want to tell you that oral facial myology is within our scope of practice. I know that you can get a special certificate in oral facial myology which is fine, but this particular myology that I'm gonna talk about is within our scope of practice and you don't have to have any special certificate to do this. We can all do this, we're just focusing on tongue placement so that we can have accurate speech sounds. Okay, so what are my concerns when I'm doing this myofunctional evaluation? What are my concerns? Well, the first is the tongue needs to move. If the tongue moves forward toward the front teeth, rather than backward in swallowing, that's a concern. Secondly, a resting tongue position, posture that's characterized by a forward carriage of the tongue where that tongue tip is pressed against or between the anterior teeth, that's a

problem. Sometimes the lips are gonna maintain an open resting posture, but not always. So, you know, there are some times when we can recognize there's a problem, but not always. And the other thing is to look for decreased facial tone and so we want to look at the cheeks. We want to look at the overall facial symmetry because it's all gonna affect speech sound production. So what I'm gonna talk about now is the myofunctional therapy that you and I can do without any special training. And this actually, some of this is included in any tongue thrust program, but a tongue thrust program is meant for us to teach the child. The accurate placement for the tongue at rest and during a swallow. And then they have to practice three or four times a day and the parents have to step in and help with that because we're not with them at every meal. But what I'm going to talk about right now, as far as myofunctional therapy goes, are myofunctional therapy strategies that help with articulation correction. And can be helpful, even if a child doesn't have a swallowing problem.

You know, even if the tongue is not a problem for the swallow, this still helps because what it's going to do is it's gonna build in tongue awareness because if we go directly to correcting speech sounds, sometimes children will just revert to their inaccurate speech sound. And they don't know how to say it any other way, because they really don't have the tongue awareness that they need. So these are the areas that we would cover. Tongue tip flexibility, resistance training, posterior tongue awareness, and then tongue and palatal awareness and we'll take each one of these separately. So tongue tip flexibility, this is one I think you all might be familiar with. So in the resting tongue position, the tongue tip should be resting on your alveolar ridge and not against your teeth. So if you all right now would just kind of close your mouth and with me, and then make note of where your tongue is, it shouldn't be no further forward than your alveolar ridge. And it really should be resting against the alveolar ridge. So your tongue really shouldn't be down resting in the bottom part of your mouth. It shouldn't really be behind your bottom teeth. It should be at the alveolar ridge at the top because that's accurate resting tongue position that maintains the tension that a tongue needs

because the tongue is a muscle and we need to be able to use our tongue efficiently as a muscle to produce accurate speech sounds. So one way to achieve this is to do consecutive ts. So we go t,t,t,t, ts and then we extend that into the /s/ and we don't allow the child to move their tongue tip any further forward than that alveolar ridge. And then we could move into more words with final /t/ /n/ or /l/ because they're all produced. Pretty much in that same place and it helps us establish tongue tip flexibility for placement. What we want to do is make sure that that tongue tip is staying at that alveolar ridge. That's tongue tip flexibility, the next one is resistance training. So the way that I do this is to rub the middle of the tongue.

So that would be behind the tongue tip. We rub that with a candy airhead or any other soft stick candy. I don't know if you're familiar with candy airheads, but they're oh, maybe about six inches long and kind of like a pliable taffy, but not too pliable and it's really pretty much the perfect size to fit into the mouth. And you would just put it right into the mouth on that part of your tongue. Okay, so if you look at, let me switch my hand here, here's your tongue tip and then it would be on this part and over to the top that you would put that candy airhead. And then we instruct the student to hold it tightly between the tongue and the roof of their mouth, as you try to pull it out of the mouth.

So that's what the resistance training is. Slowly you move it further back and you rub the top of the tongue and then the soft palate right above it. And then we finished the exercise by holding the candy tightly between the soft palate and the back of the tongue. And the reason we're doing this, is this is what's required for vertical tongue action that you need for producing accurate /r/ and getting the back of the tongue up for /s/ and /r/. Then we focus on posterior tongue awareness. So in this instance, that's your oral cavity there, and you can see the words for /r/ would be. We work with back vowels, raw, row, rule, rook, run, robber. And as we move through that, the tongue moves progressively backward. You can do the same thing with /s/. Saw, so, sue, soot,

sun, sale. So we're working on the back of the tongue awareness because that's what we need for these speech sounds. And then we would work on tongue and palatal awareness. This is one that is actually in the Richardson book as well for tongue placement for swallowing. You can put a small sugarless mint or cheerio on the tip of the tongue, and then you touch that up to the alveolar ridge. You hold it there and you direct the child to swallow. Now, if we all do this right now, take the tip of your tongue, hold it up to your alveolar ridge and swallow. Try it a second time. What you should feel is the tension in the sides of the tongue, and also the tension going back into your pharyngeal wall and that is the side tension needed for /r/ and /s/ production.

That placement is the placement for /s/ and that tension is really important for /r/ because you can't really model tension to a client, but we can build in tactile awareness for it. Okay, so for /s/ production, this is what you need for accurate /s/. You need to have the stabilization of the sides of the tongue against the upper back molars. It's the sides of the tongue that needed to go up to produce an /s/ not the tongue tip. You need to be able to differentiate the tongue tip from the back of the tongue and for /s/, the tongue tip must drop.

So air can flow across the tongue while keeping the sides up. So it's a little tricky, especially for a lateral /s/ child because we have to ask them to put their tongue up. But we have a signs of the tongue up, but we have to ask them to lower the tip of the tongue cause if they don't lower the tip of the tongue, you get sit and what I'm doing there, sit is I'm blocking off the airflow. If I block off the central aperture for air flow, the air has to go somewhere. So it goes out the side. Now the exercise I just asked you to do. With putting your tongue tip on the alveolar ridge and swallowing. Sometimes it's really, really difficult for these kids. So I have proprioceptive feedback exercise here that can work as well, if they can't do that task. And that is where you put the tongue tip on the alveolar ridge, you suck air in as if you're slurping soup, and then you feel the tongue move back. So you can all try that, put your tongue up. And you can still feel

the sides going up that you need for /s/ and /r/, right? So that's another way you can do this. The thing you don't get with this one, you don't get the tension that you need for /r/. So really the first exercise is the one you need for /r/, but this works adequately for /s/. Okay, so we're gonna talk a little bit about the two lingual protrusion lisps that I spoke about a little bit earlier and what they look like. So a dental lisp is the result of a flat expansion of the tongue over the lower front teeth. So we know it's gonna extend and we don't want it to do that. It's generally associated with a flabbiness of the tongue and insufficient pressure. But it can also be the result of missing front teeth or even a malformation of teeth.

The lateral lisp is produced when the pressure of the tip of the tongue, or possibly just behind that makes complete contact with the teeth ridge and it prevents the formation of that central air flow. And so, as I said before, that air gets forced out over the sides as in sit. Okay, so here were some suggested strategies for working to correct a lingual dental lisp. We can try to shape it from different sounds. So we can shape from an /h/. So you can all try that, you could do his, his, his.

Okay, because /h/ is at the same tongue height. When you make an /h/ can you feel the sides of your tongue up as you would need it for /s/? So all you have to really do is add the /s/ part to that. You could try shaping from an /sh/, sh, sh, sh. What you need to do in that instance is move your tongue slightly forward to approximate that /s/. So /sh/ has more, a wider central aperture and /s/ has a narrower central aperture. So it would be like, sh, sh, very slight movement changes the sound. And then as we had mentioned earlier, you can shape from a /t/ to an /s/. T, t, t, s, those tend to be pretty effective. For a lingual lateral lisp, we usually have to approach this just a little bit differently. I will say that the /t/ to the /s/ works pretty effectively for that. What we want to do is get our tongue up to the proper height, the same height as /s/. So we can start with a vowel, like the E sound. EEE and then you can add on that T, EETS, EETS, EETS. So the tongue doesn't have to make too much of a movement. It just has to

drop when it gets to the /s/, just the tip has to drop. We can also try shaping from CHA. To go CHA, CHOO, SHOE, SUE. So if they can make the CHA, because that has the component of /sh/ and a /t/ built into it, right? CHA, CHOO, then the SHOE, SUE. But I would like you to note that if the client has a lateral /s/ distortion, oftentimes the CHA and SHU may also be lateralized and in this case, we would want to start therapy with the /sh/ and the /ch/ first. Okay, I'm gonna get into some case studies for /s/. So the first one was for an interdental /s/.

So this client was age 11 in the sixth grade. When I saw him, I did an articulation evaluation. Using the Fisher Logemann Test of Articulation Competence Sentences. And he presented with an interdental lisp on /s/ and /z/, his case history, which is always important and interesting was that he received private therapy in second grade and he received therapy in the schools in fifth grade. So what I have to ask myself as I am sleuthing as to what's going on with him. Is what is the problem here? So why has he received speech therapy services twice, but he continues to present with the same articulation error. So I'm gonna dig deeper, I'm gonna do an oral mech exam, which I did, and it was normal.

And then I did a swallowing evaluation and that revealed that he had an oral myology of the tongue with that tongue moving forward when swallowing. But it wasn't that outwardly apparent, he had no lip licking. He had no inward rotation of lips. He had no outward signs that this was occurring at all. so what I did was I initiated therapy to address his swallow and resting tongue position, along with /s/. We did a myofunctional program for six weeks and then addressed /s/ and /z/ for eight weeks. His resting tongue position and swallow were corrected and his /s/ production was achieved at a hundred percent accuracy after eight weeks. So that was pretty good, his /z/ production remained at 70%, which wasn't where I wanted it to be. So then I did therapy for the /z/. His /z/ was okay in initial position, but in word final position, that's where it presented a problem, as like in the word dogs. And distortion was also noted

when it was next to an adjacent voice sound. As in he does well, would become, he does the well. So I need to observe where is the error occurring and why is it occurring? So I knew he could produce /s/, but the /z/ was lagging behind. So I contrasted the voiceless /s/ with the voice and /z/ and here's an example of the way I do this. So I would have him say cats and then we put in a sentence. Cats like pats, so we're able to say that pretty quickly and clearly. Then I would have him say pads and then we would say the car needs new brake pads.

So I've got two zs in there, one in needs and one in pads. Now, if you say this sentence to yourself, you will see that the second sentence takes longer to say, because of all the voicing. The car needs new brake pads, and there's a little more phonetic complexity to it, which was causing the problem for him. So I continued to work with voiced and voiceless contrast in words and sentences. Such as docks and dogs, mops, and moms and then we also had to work on the ez as in, dishes, catches. Now if you say these words with me, dishes, catches, cages, do you see how much more work your tongue has to do on these?

Buses, Buzzes? So there's more phonetic complexity to that and I think that's what the problem was. So I say all of this, because I want you to realize that transitions are important. So transitioning from final /s/ to initial /s/ may be a way to facilitate accurate production in both word positions. As in packs sandwiches, transitioning from a final /z/ to initial /z/ may also facilitate production as in does Zelda and then pairing voice and voiceless sounds. Is another way to feel facilitate production. So going from backs to bags to let him know that, "Hey, I know you can say the /s/ "and the /z/ needs to be said in the same position. "You just have to voice it". So in this instance, what we needed to do was to work on resting tongue position. And the reason he wasn't having success in therapy was because it's a very difficult if your resting tongue position is inaccurate and that's where your tongue spends most of its time. And also your swallowing is inaccurate to then say, I want you to be able to say these sounds

accurately, cause they're just not going to be able to do it. Okay, next case study is for a lateral lisp. This client was aged 10, fourth grade. Again, he was evaluated with the Fisher Logemann Test of Articulation Competence Sentences. So he lateralized /s/, /z/ and /sh/. He also dehoraticized volcalic /r/. An oral facial myology screening revealed that his lips were moving past the midline toward the right side when he produced the /s/ and /sh/. So before I even did an actual oral facial screening, I could see this. This was really evident, this was not symmetrical. This is what I'm talking about. When I say we have to look at the face for symmetry and because he was doing this, there was noticeable over development of his right cheek muscle and low facial tone on the other side. He had been in speech therapy in school for three years, working on the /s/ and /sh/ and /z/ not the /r/. So he would say sit, so.

You see how I'm moving my mouth? It's very difficult for me to do, but this was what he was doing. So his lips were helping him make the sound because his tongue was not being activated to make the sound. So his lips were, that's how he was getting his sound and it was lateralized. Okay, so as I said, I'm going to talk a little bit about /sh/ and that's the sound I started with. So I started with myofunctional therapy to establish an accurate resting tongue position, also a correct swallow. And to improve his facial and oral symmetry because I don't want to be working on speech sounds when I can see there's another problem. However, I am going to work on speech at the same time. I just don't want to focus specifically on that while not dealing with the other problem at hand. So I chose /sh/ first because /sh/ is produced with the tongue tip behind the alveolar ridge, which is the same placement needed for resting tongue position. So I'm focusing on the same thing. What we did is we cued the size of the tongue up to touch the back molars for correct airflow and we used a finger as a visual cue, For central air flow and we cued the client for tactical awareness rather than auditory awareness. And that's because the child will feel the difference before they will hear the difference. And we're also retraining the brain. We're retraining the brain to think about the sound in a different way. Okay, so we're building in tactile awareness first. So lateral /s/ kids, if you

get them early, you can be pretty successful with them, but he's a bit older. And if I were to ask him to say a word, starting with /s/ I'm gonna get his lateral /s/ because that's what /s/ represents in his brain. Okay, and I say this because I myself was a lateral /s/ kid and I was in speech therapy. From second grade to sixth grade and I was not corrected and then in seventh grade, I just begged to be out of speech. I didn't want to be in there anymore. What I had been told, now this is many years ago by my speech therapist was to bite my front teeth together to make /s/. So I did bite my front teeth together and I went .

So then I was told bite your back teeth together and make /s/, so I did, s. You see the teeth don't have anything to do with making the /s/ sound. So that was not helpful to me. When I went to college is when I got my /s/ corrected. It was many, many years later when I wanted to major in speech and they were very happy to have me, but they told me they needed to correct my /s/ sound first. So you may find it interesting. When I went in, I thought, well, okay, I'll try this, you know, want to major in speech. So I have to try this. I worked with a graduate student, the very first session I had.

She taught me to make a correct /s/ and it was from the /t/. I think many of you are familiar with this, to make the whistling teakettle sound to make a /t/, tuh, tuh, tuh, tuh, tuh, and then just drop your tongue slightly. Tuh, tuh, tuh, tuh, tuh, ts, and you can use a finger tuh, tuh, tuh, tuh, ts, and you can use your finger for /sh/. To make a sound that's going straight down the middle. So because lateral /s/ kids think their /s/ is an /s/ it's important to start with syllables and nonsense words. If you start at the word level, you may not get what you're looking for. You may not get a correct /s/, so I usually don't even tell them what sound I'm working on. I just teach them the sound in isolation, and then we start pairing it up with vowels. So here's an example on the screen. She, Sha, shi, sho, shu and then we put in a final position. Esh, ash, ish, osh, ush, and then we put it in the middle. Eshe, asha, ishi, osho, ushu. Okay, so now there's not real words here. We're just working on the sound. As I said, the /t/ to /s/ is

pretty efficient and effective way, and it worked for this client. So we queued central airflow, we placed the finger in front of our lips. We hold it straight up, we move it forward and down as the sound is produced. That doesn't help them make the sound, but it gives them visual for producing it. We also queued the sides of the tongue up to contact the back molars. So no air escapes, so if I don't camp my sides of my tongue up, I'm still gonna get. But he was pretty good, if we said, are the sides of your tongue up? He would tell us every single time that the side where his lips had been moving, that was the side of the tongue that was dropping. So we then provided him with a mirror for visual feedback for mouth position and symmetry.

Okay, so your strategies for a lateral /s/ are gonna be slightly different than for an interdental /s/. We need to cue the sides of the tongue up to contact the back molars. We need to cue the tongue tip lower for that central airstream. You can use a finger for the visual cue. As I said, you can use a mirror for visual feedback. You want to teach airflow using the initial final and medial syllables and nonsense words. And then once the client can produce /s/ and syllables and nonsense words, then you can move on to /s/ at word level.

But here on this slide is the progression of therapy. So, as I said, once established in isolation, we'll move to syllables. So you see your sa, se, si, so, su. As, es, is, os, us, then in medial position. Asa, ese, isi, oso, usu. But then for a lateral /s/ I would address /s/ in final position first, and I would combine it with a /t/. So there's some examples here, its, hits, bits, hats, cats, bats, because it allows them to produce that /s/ instead of reverting to their sound substitution, which they consider to be their /s/. And then once that's achieved, you can include /z/ and production in the same progression. Okay, all right. So, a little bit of a review with our /s/, interdental and lateral /s/. We're gonna teach just slightly differently. Lateral /s/ kids, we want to pick up really early, interdental /s/ kids. We might wait, especially if they have missing dentition and if you're like me, when I was in the schools. The majority of my caseload, when I would

do screenings would be kids as far as articulation goes, they would have /s/ and /r/ errors. So if you have so many having /s/ and /r/ errors, I think that's why very often we've postponed therapy because we think, well first off can I put all these kids on my caseload, right. So we kind of wait it out a little bit. But as I said before, if you pick the children up earlier, you're gonna have greater success. And sometimes they don't even have to stay with you the entire school year. So if they're stimulable for a sound, it's better to catch them early rather than to say, well they're stimulable. So maybe they will outgrow it and they don't need therapy because it doesn't hurt anything to have them in therapy for a shorter period of time and then out.

But if they're allowed to persist with their sound errors, it's much more difficult to correct it as they get older. All right, so we're gonna talk a little bit about /r/ now. Okay, I saved more time to talk about /r/, because /r/ is more complex. When I have presented before I will ask people, how many of you enjoy working on /s/ and you know, quite a few hands will go up and then I ask how many of you enjoy working on /r/ and nobody's hand goes up. And I think that's because we tend to be intimidated for /r/ because it's really difficult. It's very hard to show placement. It's even harder to show manner for producing an /r/. But oftentimes we might be teaching /r/ in a less productive way than we could.

So I'm gonna cover some new ways of thinking about producing /r/. Okay, so the normal age of acquisition for /r/ is between the ages of three to six. And I think that might be a new concept for some of us because that's even earlier than /s/ right? /s/ was between three and eight and the normal age for /r/ is actually between three and six. Years ago, I think the research showed that /r/ went up to age eight as well, but it's being rethought now. So, residual errors can occur up until age eight and that's what we generally consider developmental or we have. The common sound substitution is a /w/ for a prevocalic /r/. But most children can produce that prevocalic /r/ as in the word ring by age six. So we really wouldn't want a child to go beyond age six, saying wing

for ring. So what this means is we should be providing therapy for children who substitute /w/ for /r/, no later than first grade. Some of you may be doing this, maybe some of you are not. But if you catch them by first grade, it's pretty easy to correct. And then all other forms of /r/ should be addressed no later than second grade. And the reason is that it's easier to correct substitutions when therapy is begun early. And it's also easier to correct a distortion when therapy is begun early. The longer you wait, the more difficult it will become. So when I was working in the schools, I tended to screen kindergartners and then I screened again in the second grade.

And I picked up all my /s/ and /r/ kids in second grade, which some of you may be doing as well. I really never had any difficulty with helping these children achieve accurate production. Where the difficulty has come in is since I've been an instructor at Kent State. We get a lot of older children referred to us, by their parents or by a school therapist who said that they think the child needs something more than what they can provide. And it's a lot more difficult when they're older to correct those sounds because they've been producing them that way for so long. And now what we have is that our child who sees their production of /r/ which is basically a distortion. As their /r/, just like a lateral /s/ kid.

So now in that instance, we've got to start retraining the brain. We don't have to do that if we catch them earlier, but as the later they come in, the more brain training we have to do. So there has been talk about retroflex versus a bunched /r/. And looking in the mouth and catching the child making a correct /r/. And however, their tongue is that's the /r/ that you should address. That's the one that you should teach. However, really the focus for /r/ is on the top of the tongue moving up to the soft palate. So if you think back, if you're still with me, if you think back to when we were doing the resistance exercise, the myofunctional exercise where we put the candy stick in the mouth and had the child hold it between the top of the tongue and the soft palate. That's the part of the tongue that needs to move to produce /r/. So I think retroflexing

and bunching is focusing on the tip of the tongue, but that's not the part of the tongue that needs to move to produce an /r/. It's the back of the tongue has to go up vertically and the sides of the tongue need to make contact above the back molars. So if you say an r right now, think about what your tongue is doing, r, and you'll notice that it's the back of the tongue that is engaging to make that r. The reason being, if you remember, when we had our tongue tip up to the alveolar ridge and we did a swallow. Which you can also do again, that's where the tongue tension needs to come in for that /r/, you have to have side tongue intention into the pharyngeal wall. Okay, so while retroflexing and bunching does occur, it occurs in context. Okay, so it's affected by co-articulation.

So I wouldn't worry about whether the tongues retroflexed or bunched. I would worry about the size of the tongue getting up to those back molars and also the tension in the tongue. Another thing I would like to note right now is that there's no lip movement needed to make an accurate /r/. So if you go, r, you don't need to move your lips to make an /r/, so we don't want to tell children to round their lips to make an /r/. So the goal for /r/ production is to stabilize the sides of the tongue on the upper back molar. So it's really the same as for /s/ production. It's to move the top of the tongue up to the soft palate and also further, we have to produce an accurate vowel before that post vocalic /r/.

So far, you have to have the ah sound, four, you have to have the o sound. Fire, you have to have the I sound and so forth, fair and fear. You don't want to hear an extra vowel before stressed and unstressed er. Which sometimes they put an extra vowel in there and we don't really want to hear that. Okay, so that's the basis for producing an /r/. Now I'm gonna get into a familial case study for /r/, three siblings from the same family that I had seen. Two at the same time and one later. So the first sibling was a male age nine in fourth grade. He had one year of speech therapy in school. So I would say that he got picked up a year too late and that's why he ended up having to come

for more therapy. I would say he should have been picked up in second grade. That's my first observation. He was evaluated with the Fisher Logemann Test of Articulation Competence Sentences and his evaluation results were /w/ for prevocalic /r/. In initial position and initial consonant clusters. Well, if he was using /w/ for prevocalic /r/ he should have been picked up when he was six years old, but he hadn't been picked up until let's say, so he hadn't been picked up until he was eight. So that /w/ for /r/ he should have been picked up in first grade and started working on that. He was unable to produce /ar/ and stressed or an unstressed er. But he did have some correct productions of initial /or/, and medial /air/ and /ire/. And no correct productions of /r/ in final position.

So this is the way that I target therapy. I addressed the prevocalic /r/ and initial /r/ clusters first. The main focus is to reduce lip rounding. We need to focus on tongue movement. Subsequent targets I addressed were initial and medial /air/, /ire/, /ear/, /ar/ and /or/. And that's because he was stimulable for a few of these. So that would be the next way I would go, one next is he's stimulable for. But always, always I would address prevocalic /r/ and initial /r/ clusters first. And I definitely would address reduction of lip rounding first. We focused on accurate vowel production and tongue placement, then for vocalic /r/ and word final position, I addressed last. So how do we reduce lip rounding?

And it can be tough if that's a big habit for them. It's a big problem and it's tough to get rid of because alerting them to tongue movement can be complex. So what I use is a straw, and this is the type of straw I use. It's rigid, see it does not bend. It's gonna go this way. And I'm not using my lips, I'm reducing my lip rounding by getting them out of the way. I begin production with prevocalic /r/ and the other way that we do reduce lip rounding is to pair it with front vowels. So, if we have to get rid of lip rounding, we don't want to use rounded vowels. Initially we're gonna avoid rounded vowels. So we're not gonna work on a road or rule. We're gonna work on read, rid, red, raid, ride.

So if you'd all say those, you'll see, you do not need to round your lips on those. Read, you can smile, which is another cue that I give. Read, rid, red, raid, ride. Sure your lips move a little bit, but they don't round like for a /w/. Then I address initial /r/ clusters and I start with trs and drs. And krs and grs, so as you can guess, I don't add prs and brs until after the lip rounding has been reduced because that's asking too much of the child. So I'm gonna do like train and drive and cry and grow. So then I can smile and really build in tongue awareness while we're retraining the brain to think about /r/ in a different way. So here are some strategies for production for /r/. I shaped vocalic /r/ by co-articulating to a prevocalic /r/. So an example of that would be carry, berry, fairy. So do you see how you have a vocalic /r/ as in care and then you just put the re on it. Carry, berry, fairy, for our final position /r/.

You can co-articulate that to a prevocalic /r/, once prevocalic /r/ is established. So we could say, I want four rings. Now, if I asked a child to say this sentence, they might be able to do it. If I ask them to leave rings off, I might get, I want four. They just don't get that tongue up there. I want four rings. So that helps to complete it to start off with, I will say for this client final position was the most difficult. So what I did was I went back to using that candy airhead piece of taffy. So I put that in thinking back again to when we were putting that on the top of the tongue and asking a child to say the sound. So it might be the word car and I would get car. So when I would take the candy stick out, it was still flat.

And I told him, you have to bend the stick of candy to get your R sound. So when I put it back into his mouth and he was able to bend it. So you have to put it pretty far in the mouth. So here's my hand, this is the tip of your tongue. This is the blade, the knuckles are the top of your tongue. That's the part that has to go up to produce the /r/. Your sides of your tongue are here by your hands and then the root of your tongue is back by your wrist or the base of your thumb. So this part is a good visual that's what goes up to produce an /r/ when he could bend the candy stick, then he was able to produce

/r/ in final word position. I don't want to say this works for every child, but it did work for several clients that I've worked with. So I offer that as one of the strategies that I've used. So the second sibling, he was age seven and had just completed second grade. So his brother had been with me for half of this school year and was remaining with me during the summer. And I had gone out to walk him out to the car and I heard two children in the backseat and one was not producing a correct /r/. If you're a speech therapist, which you all are, you hear articulation errors everywhere. People walking in stories everywhere. It's just ingrained in us that we hear it.

So I mentioned it to the mom and we had the two brothers in the backseat, both say some /r/ words, picked out the one who couldn't do it and he started to come into therapy with his older brother. It's interesting that his twin brother was perfectly fine. The initial evaluation results were pretty similar in that he had the /w/ for /r/ substitution for prevocalic /r/ and initial consonant clusters, but he had a few more correct /r/ than his brother who was in the fourth grade hand. So he had some correct productions of our /ar/, /air/, /ire/, /or/ and stressed /ɝ/ in initial position is in the word earth. For is in the word fork, ire like iron air, like airplane. He also had some correct productions of /ear/, /ire. Unstressed /ɝ/ in medial position.

But he had no correct productions of final vocalic /r/. So this is another red flag. I think when children can't produce final vocalic /r/. They're probably not growing into final vocalic /r/. Even if they can produce /r/ in some other positions. So I think that's something else to watch out for as well. He had not been in speech therapy yet at all, the seven year old. So he had just completed second grade and as I mentioned before, I think he probably should have been in therapy that year. But he was able to produce vocalic /r/ in some positions. So we address prevocalic /r/ and initial /r/ clusters. First to reduce the lip rounding. So again, lip rounding is a really big problem too. So lip rounding means they don't have attention to the tongue to make the sounds. So that's also a bit of a red flag as to when to pick kids up. So, you know, if they're six years old

and their lip rounding and producing /w/ for /r/. I would provide therapy, with this kid, we were able to move from initial vocalic /r/, orange, to a medial vocalic /r/, born really quickly because he had some. And I think sometimes maybe they have them and they might start to lose them. Sometimes if they have a distortion, I'm not completely sure about that as they get older. But it's just something that I'm kind of hypothesizing right now. His final vocalic /r/ was established using that airhead candy stick as well. So it worked for both of them and he worked through much quicker than his brother. Now the youngest sibling from this family. She was age eight and she didn't come to me until three years later.

She had completed third grade and had one year of therapy. So, that was the same as for her older brother. So apparently in the school district they were in, they were picking them up in grade three. Her evaluation showed a /w/ for prevocalic /r/ and initial consonant clusters due to lip rounding. So something's starting to sound familiar here. Some correct productions of /ar/, /or/ and /ire/, in initial position and that's pretty common. Initial position usually comes in before a medial and final. She has some correct productions of /ear/ and unstressed /ɝ/ in medial positions. And remember she had been in therapy for one year.

An interesting thing here was that she had a substitution of /f/ for medial and final /th/ and that was not addressed in therapy at all. So I think I would have addressed that at the same time as doing /r/ 'cause it's pretty easy to correct and that's what I did. I addressed /w/ for prevocalic /r/ and /f/ for /th/ concurrently. We worked on them together. Then we moved to initial /r/ clusters. Then we addressed the initial vocalic /ar/, /or/, /ire/ and /ear/ and I use this word kangaroo. That's another strategy that I'll give you and again, I won't say it works for everyone. But we try and if it works, that's great and we used it to shape the /ar/ and /or/ targets in particular. And the reason is because if you look at the word kangaroo, /ka/ and the /g/ are activating the back of the tongue, and we had already worked on prevocalic /r/. So we have three instances

in this word where the back of the tongue is activated, which is what we're looking for. So I'm going to pair it with the words I want to target and tell her not to allow her tongue to drop down. So again, thinking back, sides of the tongue up, touching the molars, and we would say kangaroo court, and you can say these with me, kangaroo fork, kangaroo cart, kangaroo heart. She tended to not be stimulable for /air/. So I addressed medial /air/ using that word fairy, which I had mentioned I had done with her brother as a keyword because we're co-articulating to a prevocalic /r/. So basically we just have to cue them to not let that tongue drop down fairy, fairy, fair, right? The tongue has to stay up there.

Oftentimes I tell students for final /r/, you need to stick the /r/ just like a gymnast sticks a landing. When they go over the pommel horse, fair, fair. You can't drop it down, you have to stick that landing. Okay, so establishment of final and medial /r/ was more difficult for sibling number three. And I will say now at this point, the candy stick was ineffective for her. However, she did have a palatal expander, so that could have been the reason. She couldn't really feel pushing up the top of the tongue to the soft palate because there was a palatal expander.

So it actually didn't work that well. I would like to mention too that any physical manipulation was ineffective and I've often found that that's just kind of ineffective. I don't usually try to physically manipulate the tongue for them. And the reason would be, I mean, I have tried it, I don't anymore and the reason is even if I could push that tongue into the right position. If I get proper place, I can't push it into the right manner. The tension and the side of the tongue and the pharyngeal wall that we need for /r/. No matter how far back I push a tongue, I'm not going to build that in. So what worked best for her was coarticulation methods. And that's using the "R and L Stories Galore", which I wrote and it's available on Amazon and through lulu.com. So I'm just gonna give you a little background for it. Stories for clients who lack carry over of /r/ and /l/ and they need more extensive practice for these sounds in combination with low

formant vowels and diphthongs. So that's the way it's structured. It appears to me most of the clients that I have. Can produce /r/ with front vowels more easily than back vowels. And I think that's because when you have a back vowel, your tongue is very low in the mouth and your tongue has to be very high. The back of your tongue and the mouth to get the er. So there's more movement needed. These stories are intended for use with clients age eight or older. Who need concentrated and intense practice to improve their intelligibility in conversation and carry over. So here's an example, and this story is on my website.

At Lynnberk.wordpress.com, so you can just have this one for free. So what you'll see here is we have the words that we're targeting. Okay, and then we have the story. So here's the words we're targeting over here and then we start reading the story. What I did was I highlighted in yellow, the target words for this story and then in blue, I highlighted the words that would be words that either have an /r/ context that we haven't used yet, or that we might target in the future. So, here we have in blue, we have spring here, her sharpen her.

So we say spring was almost over and summer was on its way. Heather was happy that school would soon be over and summer vacation was here. She wouldn't have to see that joker Dexter at school. Heather had never liked Dexter. He plays off pranks on her. Once he hit her chair when she got up to sharpen her pencil. So you can see how we go on. So we're listening for the /rs/ that were starting. Oh, and I did forget to mention, but here's the oral cavity up in the right hand corner and that's what you saw earlier on the posterior tongue awareness exercise that I did. So we start here, we go raw, row, rule, rook, run, robber. And when I put this on, it's generally following the vowels that we're targeting and then here's our spring, here, her sharpen. So those might be contexts we hadn't addressed yet and then the yellow are the ones we have addressed. So I put that on here. But it's not highlighted when you get the story. So I just did it for the PowerPoint. So as we go through, you see on this one, I would expect

that client would already be able to say rang and ran and children. So children has a cluster, rest, rang are prevocalic. I would have already addressed those, writing is another one. Those I would have addressed. So I'm listening for carry over while I'm working this particular story is for unstressed final /ɝ/. While I'm working on teacher, tanner, summer, never. Heather, father, tractor. Okay, and I'm also listening for other contexts, like farm or chores. So there's the /ar/ and the /or/. So I can gather data while I'm going through this story. And again, on this slide, bedroom, that would be a cluster. The client should already have that.

Great would be a cluster. Breakfast would be a cluster. Strange would be a cluster. So those they shouldn't be slipping up on, if they are, then I know I need to do more therapy on that. And then again, my yellow, those are highlighted as we're targeting them for the story. I will say in the stories that the target words are italicized. So you know which ones they are in the story and then more of the story. Heather, under, after, another, those are the final ers. And then I can be listening for tired, the ire sound. Hard, the ar sound, work and before.

And then at the end of each story, there is a homework words. So for this story, it says we're targeting unstressed er, there will be homework for medial and final ers. So, waterslide, mystery, robbery, understand, and then water, flower, Mr, Shower. Another thing included in each story is comprehension questions. What season had finally arrived? We're gonna ask questions and they have them respond to us. This is useful if you have artic kids and language kids in the same session. Your language kids could be working on comprehension questions. So you may or may not use it for your artic kids, but then we also have conversational questions. That we're going to use for both language and artic kids. And we're gonna have different questions we can ask, why was Heather happy summer had arrived? Discuss what happened when she arrived. So they're gonna do sequencing and then the last one for each story is we tell the story in your own words for more sequencing. And also maybe you don't have time to

address all these questions so you can pick and choose. Okay, so as observations from this case study, the nine-year-old sibling received therapy from me for 11 months. The attendance was a little sporadic. That could be part of it, the seven year old only needed to see me for four months. It was really only over the summer and he was done. So I say that because I want to point out to you that when we grab them early, we can get them out quicker. I think that's really important. The eight year old required 18 months of therapy and at that point attendance was even more sporadic for her and no homework was ever done.

So, you know, I do want to point out that when we have parent involvement that really goes a long way and helps a lot with sound correction. They had similarities in that all substituted /w/ for prevocalic /r/ and initial /r/ clusters. But the seven year old, he could produce all of the vocalic /r/ in at least one context. Also he had not had any previous therapy, so he didn't have anything to unlearn. Where the other two did and his motivation was also the highest. All right, I'm gonna get into my second case study and this is also another family. So I've been lucky to have two families of three children each.

So I've been able to observe a lot. The first client was aged 12 female. She was referred to our clinic, where we have a Palatometry clinic. So if you're not familiar with that, palatometry uses a pseudo pallet connected to a computer to provide visual feedback for sound production. This requires going to an orthodontist, having an impression made. Sending that off to the company that makes the palette for you. And then that comes back and you hook it up to a computer. So she was evaluated using the Fisher Logemann Sentences and she had no correct /r/. She had a family history of an older brother, aunt and grandmother with /r/ problems. She had been in speech therapy for four years in school and she still had no correct productions of /r/. So family history is really important for me. This would be a red flag much earlier. So she was picked up again. Third grade, age eight, since her brother had had problems and

her grandmother had had problems. I would have picked her up earlier. So always look at the case history, as far as palatometry, she received therapy twice a week, 16 sessions. She achieved accurate production of both prevocalic and vocalic /r/ however her prevocalic /r/ and /or/ remained inconsistent due to lip rounding. So I had her come back to work on carry over for 12 sessions to address /r/ clusters, which were not done through the palatometry program. And I wanted to note here that lip rounding often occurs on /r/ clusters and that's gonna impede carry over progress. So a little background on our clinic at Kent, we do have a palatometry clinic. It was run by a professor who has since retired as of last year and this was her preferred treatment for /r/ clients, but she did not work on /r/ clusters. Because she felt if you got prevocalic /r/, it would carry over to /r/ clusters.

But I have not noticed that happening and as of present, I'm going to show you another visual feedback program in a few minutes related to this family that I think is really preferable to the palatometry. But this is how this referral came through and how we started off with the eldest sibling. And when she was there, we noted that both her younger siblings who were coming with her did not produce any accurate /r/ either. So she had a sibling age 10 who had been in therapy in school for one year and actually was scheduled to be dismissed.

But she wasn't producing any /r/, she still had /w/ for /r/. The second sibling was age seven. She couldn't produce any accurate /r/ either. She did produce a little /r/ quality on /or/ as in the word orange. And /ar/ is in the word large, but had not been in therapy. So if you look at the word orange and large, that /g/ sound. If you pair that when you're trying to teach /r/, can be effective as well, because it's at the same tongue height as you need. Large, orange and the sides of the tongue are up where they need to be too. So, while our retired professor was working with the oldest child. I worked with the two younger ones for a trial period during that summer of six sessions and established prevocalic /r/. However it was inconsistent and of course I knew that he had to come

back. So they were both enrolled for 16 sessions, the 10 year old, they both had 45 minute sessions and the 10 year-old used the Real Time Speech Spectrogram Display and verbal feedback for placement. We targeted prevocalic /r/ and /r/ clusters first, because what do we know about /r/? /R/ is produced with the tongue, first we must get rid of lip rounding. One thing that I do when I work on /r/, is I do separate out the targets that I work on. And I always start with prevocalic /r/ and initial /r/ clusters, if they can't produce them, because it doesn't require as much tension as a vocalic /r/. And I have to alert the client to their tongue, that they need to use their tongue to make an r. So we have to get rid of lip rounding.

Next, I generally target initial and medial /ire/, /air/ and /ear/. Because they don't require as much tension as some of the others. Then I will go to /r/ and /or/ which are those low formant back vowels. And then lastly, I'll generally target stressed and unstressed /ɝ/. But it's gonna depend on what their stimulabel for. So there have been times where I'll address the /ɝ/ first, if a client is more stimulable for that and I will explain more about that later. The seven year old also did 45 minute sessions on the RT Gram program.

Again, we targeted the /r/ and initial /r/ clusters to reduce that lip rounding. And then we targeted /ire/, /air/ and /ɝ/, but then for her I went and started working on unstressed /ɝ/ because her lip rounding was more consistent than her sister. So she was lip rounding on the /ɝ/ and we know we can produce /ɝ/. If you say it with me /ɝ/, I can smile and say /ɝ/. I was trying to make sure she wasn't rounding her lips. So in this instance, I did do that first, before I went to /ar/ and /or/. In the initial and medial position and then targeted all those vocalics and final position. So when I switched that up, the stressed /ɝ/ we did not formally address, but she could produce it when she was prompted to do so. Okay, so what is Real Time Speech Spectrograph, what is this? It's a free program, so you can all download it. It displays a real time scrolling spectrographic display of an audio signal and then you can monitor the spectra

temporal characteristics of the sounds being played into the computer's microphone. So we don't have to send them off to have an impression made and then wait for that to come back and then hook that up to a computer. And I will say when you have the impressions made it's pretty expensive to do. So here we have a free program, it's copyrighted. It can be used without charge, as long as the program remains unmodified and also continues to carry its copyright notice. And they say that it carries no warranty of any kind and you use at your own risk, but you're not putting anything in anyone's mouth. So there's no danger of anyone being hurt and here at the bottom of the slide is where you can go to download this program. Okay, so I'm gonna show you now what it looks like.

So I just have some screenshots here. Okay, so the first one here is /r/. So, do you see here where the pointer is /r/, and the dark part is getting the tension on the tongue. So that's what we're focusing and so I said, three in a row and we want to try to match those and get the spectrograph as dark as we can. That's how we can cue the tongue tension that you need for producing the /r/ sound. So you can set up the spectrograph and you can run it at whatever pace you want. You can slow it down. Okay, and then this ones /er.

So you see how /ɝ/ is its own vowel. So it just stays pretty flat er, er, er, er. Okay, so we need to get it up to the third dotted-line. So they're talking into a microphone and they're getting visual feedback. This one is /or/, okay, so you're starting low or, and then it just slightly goes up or, or, right. Okay, the next one is /air. So this is a front vowel, grab my little. So we're starting higher, we've got that a sound, /air/ and it's a diphthong. So it's gliding down into that /r/. Air and then it gets down to here, air. So they're getting that visual feedback. You can model it for them. You can talk into the microphone first, which is generally what we do and have them try to match us. This is what an /ire/ looks like on the spectrogram. Ire, it almost closes off like a little circle. Ire, ire, ire, I think this one's really cute and this one is your /ear/. Okay, so this has high

front vowel, ear, and then it goes down, ear, and then you got to get that /ɝ/ sound in there. So given that this is a free program, I think it's you know, well worth looking at, and it worked very, very well for these two sisters. It worked just as well as the more invasive palatometry program. Okay, so observations from this case study. So lip rounding was really quite a large factor for all three of these siblings. And I think it's really important to keep mentioning that just because I have observed therapists where they tell the child to round their lips to say /r/. So they'll say, "Say road". Well, of course you would round your lips to say road, right? Because there's an O but we don't want to focus on lip rounding.

So we remove the lip rounding component and we say, "Say read". But we wouldn't tell them, say read because it's not necessary to round your lips to do that. Okay, so if you take nothing else away for /r/, from this presentation. I hope that you remember not to cue children to round their lips for /r/ because /r/ needs to be produced with the back of the tongue. Moving up to the soft palate. Palatometry while it was effective for the 12 year old, she wasn't able to achieve carry over.

So I did have to have her come back for another semester and we worked during that semester on "R and L Stories Galore", and other reading material that she liked to bring. And that's where it became really evident in the "R and L Stories Galore", that having not worked on those initial clusters was holding her back. So when we think about myofunctional therapy and how if there are myofunctional concerns that can hold back a child's ability to produce sounds accurately. So we need to look at underlying conditions. We also need to look at if a child is producing, if she's able to produce some /r/ correctly, but did not address say the clusters. Which the palatometry program did not do, then that's holding her back from carry over. So we want to make sure that we address everything. Not only effectively, but efficiently. So following a certain structure, as to the type of /r/ you want to address. So when I say that, I don't mean necessarily initial, final, medial. But I'm looking more at the vowels in

a vocalic /r/ and contrast that with medial, or medial and final, stressed and unstressed /ɜ˞/. Where they stand as their own vowel. So, the 10 and seven-year-old they received traditional targeted therapy. The 10 year-old achieved carry over in 14 sessions. The seven year old could produce /r/ in all contexts, but carry over wasn't reached, she wasn't as motivated. So, you can find that, but guess what, even though the 10 year-old was motivated, she didn't want to go back to speech at school. The 12 year old, when she came to us was motivated. She'd been in speech for three years. So there was a lot of motivation in the two older ones. The seven year old is a seven year old. She really wasn't that motivated.

But what did I say? We have to look at case history. We have two older siblings, actually three, because the brother also had a problem, but he was never referred to us and a grandmother. So I can assume that that seven year old is probably not gonna develop into her sounds. So if I pick her up early and play a few games with her and start to plant the seeds for the /r/. She did very well with most of her /r/, didn't necessarily achieve carry over and we were gonna wait one semester. Which was last semester and mom was going bring her back in this summer.

If she needed to and she did not contact me, so she did not need to. So all the seven year old needed was that little bit of stimulation to get rid of that lip rounding and she was able to actually develop the rest of the /r/ herself. But I will say that this mother was very, very engaged. She did all the homework, she corrected them, and that is why these kids made such great progress. You know, having parent involvement is really, really important. And I think the way to get parent involvement just is through education. But, you know, surely there are some parents who really aren't going to be as involved as others. And so it might take a little longer for those students and the 10 year-old in particular was like super motivated and did really well. So I just want to talk for a minute about targeted therapy. What I mean by targeted therapy for /r/. So my first target is to eliminate lip rounding. My next target is to work on prevocalic /r/ and

initial /r/ clusters first. So we kind of do those two targets together. I'm not gonna be doing final and medial at this point. I'm just gonna be working prevocalic /r/, initial /r/ clusters. Get rid of the lip rounding. Next target would be to evaluate facilitating contexts. So bear with me while I say this, because it's a little confusing. I will target stressed /ɜ˞/ first if the error in production is an added vowel. So I have an example there. The distortion is a distortion and it sounds like bird instead of bird. So do you see how in bird, the child's put an extra vowel in their, bird. And they may not even get the /ɜ˞/, more than likely they're gonna go beard. So they're gonna drop off the er and they're just gonna elongate this vowel.

Okay, so in that instance, I'm going to target that /ɜ˞/ sound first because I need to work on /ɜ˞/ because the vowel is wrong. However, if /ɜ˞/ is produced more like a /w/ sound. Okay, so if it's more like bird and there's lip rounding, bird. Without a vowel distortion, in that instance, I'm going to address the vowel combinations first and buy that I'm gonna address ire, ear and air first. Okay, because I just want to teach the accurate vowel production before that /r/ and still make sure they're saying the /r/ correctly.

Okay, so I'm gonna teach vocalic /ar/ and /or/ last. Unless the client is stimulabel for these and I do have an instance in a minute. Where I'll show you another case history where a child was stimulable. So what I'm saying is I'm gonna do targeted therapy, but I'm gonna be flexible because I'm gonna look at what they're doing. So when I'm taking my data, I'm always looking to see what are they stimulabel for, what are for what sounds, what context, what are they not stimulable for? And that's the way I'm going to plan my therapy around that. And when I do that, I will say that, there's probably only one program that I can think of that actually has materials that divide the sounds up this way. So I usually create my own, I usually create my own materials. Okay, I hope that you're all still with me. All right, so we had two family case history stories. Each family had three children who mispronounced /r/, so always look at the

case history and see what's going on. So if you know that you had a student in therapy for /r/ and other students are following up. You know, younger students are coming in, into the school system. You want to get in there and you want to evaluate them because if you're seeing the exact same thing you saw with the student that you picked up, you want to get in there sooner than later. I don't think I can say that often enough. You want to get in there sooner than later, because it's going to make your life easier. So you do want to get in there sooner than later, here is an instance. Most difficult client I've ever had is this last case study I'm gonna talk about. He was 15 years old, an /r/ client. Entering ninth grade had never had therapy. So you all know there's something wrong with that, right?

A 15 year old should not be in ninth grade and never had therapy and it's not that mom didn't ask. So mom had contacted the speech therapist at school when he was in sixth grade. Again, that's too late, but you know, I'm assuming mom probably assumed he would outgrow it. So when she contacted the school, when he was in sixth grade, the school therapist said, he's going to outgrow it. Now, you all know that's wrong, right? Everything that we've talked about, /r/ develops between the ages of three and six, right.

Okay, even if you push it to eight, when you're in sixth grade, you're 11. He's not going to outgrow it. So what I would like to say here is I'm not sure what happened in that instance. Maybe the therapist had no room on her caseload, but I think ethically. We need to make a referral then to an outside source. So have some, you know, have some outside referrals that you can refer to if you can't serve all these kids because I know that you're all very, very busy. Your case loads are full, the schools are difficult. Difficult to work in given the size of case loads you have and the paperwork that you have, but let's not let kids like this suffer the consequences of not having had therapy that he should have had. Make sure that if you can't serve them, you refer them to someone who can. So here he is age 15, entering ninth grade, no previous therapy,

and now people are making fun of him because he lives in Aurora and he's saying Aurora in ninth grade. That was the first word he wanted to learn. Fisher Logemann Test of Articulation Competence. There were some other things he was doing. He was unable to produce /el/ in final position, as in little and wheel. He produced it as a /w/ adjacent to back vowels in initial and medial position. In my book that I wrote also addresses this final /l/, which sometimes happens in kids who have /r/ problems and they slip through the cracks with it, because it doesn't sound that bad all the time. But he was saying, for Lucy, he was saying Lucy with rounded lips. So as I've been talking, you know, we need to get rid of lip rounding.

We definitely need to get rid of lip rounding and you all know that he probably should have been picked up even way earlier for the /l/ sound than for the /r/. He was unable to make correct /r/ in any context, his prevocalic /r/ and initial /r/ clusters were pronounced as /w/. And this is where it gets really difficult the post vocalic /r/ was produced as a /ʊ/. So what do we know about /ʊ/. Well /ʊ/ isn't even a sound in English. So we've got an /ʊ/ and no correct /r/.

So I did a tongue thrust evaluation, and it showed that his tongue moved forward on the swallow. He had all these outward signs as a ninth grader. He had lip licking, he had an inward rotation of his lips after the swallow. He had leakage on the swallow when the lips were parted, he had a case history of being a messy eater when he was younger. The oral mech exam revealed difficulty separating his tongue and jaw movements. He was using the jaw to support his tongue. He was super highly motivated to correct his speech. Okay, so as I said, /ʊ/ is not a speech sound in English. But it's often used by children as a substitution for /r/. Given states that most typically developing children will pass through a stage where /w/ gets replaced by /ʊ/. However children with /r/ problems may continue to use /ʊ/ longer and then even into adulthood. Which we're seeing with this boy. So what is /ʊ/? /ʊ/ is produced by creating a wide opening between the lower lip and the upper incisor and you get /ʊ/.

And here's the strange thing if you do it, /ʊ/. The back of your tongue is going up, but you're getting an /ʊ/ because what you don't have is the tension for /r/. The body of the tongue, however is convex and your tongue tip is down. Okay, so where do I begin with a student who has no correct /r/? What do you think? Of course, we're gonna start with resting tongue position and swallow. I had to address it twice for 12 weeks, rather than the standard six week program, because he was not getting it. Think about how long he had a myofunctional disorder, you know, up until ninth grade. I will say that generally, what's often referred to as a tongue thrust. The tongue moving forward on the swallow. Kids outgrow grow that by the age of five, is the type of a swallow that infants have and they outgrow it by the age of five.

So he's maintained that through the age of 15 in ninth grade. And I've seen adults with it too, which is really, really difficult to work with. So he required moving through the lessons twice. Our initial goals targeted were, as you can probably guess. Did initial and final /l/ production first because /l/ is easier to work on and he was substituting /w/ for /l/ and /r/. So I'm gonna work on /l/ first. Then I went to prevocalic /r/ and then I went to /gr/ and /kr/, initial consonant clusters to reduce lip rounding. And we used that ridged straw, it was very, very, very difficult for him. He was stimulable for /ar/ using the RT Gram spectrogram program and so that's why I'm saying that we need to be flexible.

He was stimulable for that, so that's the one we addressed first. I don't usually do that, but for him, that was the best way to go. The tricky thing is teaching tongue tension and resonance. How do you teach tongue tension and resonance? Well, for him I had him hold the tip of his tongue between his front teeth and then swallow. So if you all want to try that with me, put the tip of your tongue between your front teeth and swallow. Okay, so it's similar to holding the cheerio or mint up there and the alveolar ridge. But he wasn't able to do that as well, but he's older. So I can ask him to put the tip of his tongue between his front teeth and swallow. When you do that, you're gonna

note the tension in the sides of your tongue and into the back of your throat. This is the tension that's needed for /r/ production and the rhotacization quality that we need to produce /r/ is achieved due to the constriction in the pharynx, by retraction of the portion of the tongue below the epiglottitis. You can never demonstrate that to anyone. So we have to find some type of tactile cues to replicate what we need them to do. And this is one way of doing that. The tongue tip between the teeth and the swallow, and to feel that tension and to get that tongue up there. The other way for younger kids is that cheerio on the alveolar ridge and a swallow and then we can get in that tongue tension that we need.

Now I will say you pick kids up early. You'll never need to teach tongue tension and resonance. It's just gonna come automatically. Okay, tongue movement for stressed /ɜ˞/. So once he had the tactile sensation for tongue pharyngeal and wall tension and side tongue tension, we targeted more side tension by using a straw over the body of the tongue. And this is when I'm gonna go to a flexible straw. Okay, and I'm gonna put it in that far over the body of my tongue and then I'm gonna lift that straw with the body of my tongue, not my tongue tip, up to the roof of my mouth.

And it should make the flexible straw go down /ɜ˞/ and further I had him then point that tongue tip towards his alveolar ridge, because we didn't quite have the sound I wanted. So over the body of the tongue, /ɜ˞/, /ɜ˞/, /ɜ˞/. And that's how we got to him to produce that stressed /ɜ˞/. The stressed /ɜ˞/ requires the most tongue tension and I began with initial position in words like earth and early and then moved to medial position and then to final position Okay, then vocalic /r/ combinations. I'm gonna talk a little bit about vocalic /r/ combinations. You may notice that a client may elongate the vowel as we talked before or add a vowel before /r/ causing a distortion. So they might go dear, dear. Fear, so do you hear me putting that extra vowel in there? Fear, so I'm putting an extra vowel where it doesn't need to be. I should be saying the /e/ sound, fee and then the /ɜ˞/ sound, fear. And going fear, so that /ɜ˞/ sound needs to come out

of there. Oftentimes I've seen students do this when they're reading the word, because they're trying to produce all the vowels in the word. So what I will do, is I will then use a phonetic spelling. And the phonetic spelling gets rid of the extra vowels. So I'm gonna say this sound makes the /ɝ/ sound. So if we look here, when I have /ɝ/. My phonetic spelling, bird, heard, learn, turn. Phonetic spelling, water, mother, other, butter. For the air sound, mayor, bear, fair, care. So if I remove the spelling for one of my clients this worked, ear, fear, dear, here, tier. Ire, wire, tire, higher, fire. So this is another strategy you can use if you're getting that extra vowel sound and then for vocalic /ar/ and /or/. Again, the client must use the correct vowel.

So it can't be car, I'm adding a vowel. Fork, I'm adding a vowel. He must produce the /r/ after that vowel. So we'll do, Don, darn, tot, tart. To show him if you don't put the /r/ sound in, then you're only elongating the vowel. You have to say the /r/ sound, Don, darn. Okay, barn, born, and then I'll go back and forth between /ar/ and /or/. Now, sometimes /or/ is the most difficult. I will tell you, this is when the lips come in. This is the only time the lips really have to come in. Other than that in coarticulation across sentences, you need to square your lips for /or/. Born, if I say with a rounded lips born, I'm rounding my lips, I don't have my /r/.

So it's born, and I also want to note that spelling does not always reflect the correct /r/. So when the word world and word and work, that is actually a medial stressed /ɝ/ and not an /or/. So sometimes that trip's kids up. Okay, we're coming into the home stretch. We're almost finished here. I want to mention that conversational carry over. Dialogue is important, "R and L Stories Galore". Contains those dialogue questions for spontaneous speech. Other ideas would be take a pretend road trip. What would you like to visit, play the would you rather be game. Would you rather be a doctor or a dentist? For older students, you can do a mock job interview, practice ordering from a menu. Just make sure you're choosing open-ended activities that require conversing. Okay, so in summary, I think I've covered a lot of information. I hope that it's been clear

and not confusing. We want to provide intervention early to decrease the time spent in therapy. We want to do an oral mech examine and a myofunctional screening to assess resting tongue position. We want to provide tactal and visual feedback before auditory feedback. In general, we work in the order of initial, final, medial word position for an interdental lisp. And for a lateral lisp in general, we're gonna target syllables, nonsense words, then final word position, then initial and medial. We always want to address prevocalic /r/, initial /r/ clusters first for our clients. Then in general, I would target front vowels. Ire, ear, air, producing the accurate vowel before that /r/, and then I would work on /ar/, /or/ and then stressed and stressed /ɝ/. Whichever is most stimulable. Okay, and then I just have a list of references here for you. And I think we're good on time and I'm happy to answer any questions now. I hope that this was informative and that hopefully you'll have some good strategies when you get back working with your clients.

- [Amy]Thank you so much Lynn. Wow, this was an information loaded webinar and I loved the summary at the end was very helpful for sort of wrapping it all up. We do have lots of questions in the Q&A pod. So I'm gonna try to start running through those and we'll see how many we can get through. Carolina is asking how you help clients distinguish where the top of the tongue is as opposed to their tongue tip. And she was hoping for a little clarification about how you explain that or cue that tongue resistance exercise to show them how to move the top of the tongue up to the soft palate?

- Okay, so I have a model that I can show them and then I also do show them with my hand like this, right? So tip, blade, top, would be the knuckles. What I generally do is I hold the tip of the tongue down and then ask them to move their tongue. So if they can't move the tip of the tongue and I'm telling them to move their tongue, they have to move another part of their tongue. Okay, another strategy that I use sometimes is I ask them to tickle the back of their throat with their tongue. If you have ever had allergies and the back of your throat itches, so you kind of scratch it with the back of your

tongue. So I'll move that around and you can all try that too. When you move the back of your tongue around to try to scratch your throat, you're gonna touch your soft palate. But oftentimes you do have to hold the tip of the tongue down in order to get them to activate the back of the tongue. That is one time when you might need to use a tongue depressor.

- [Amy] Very good, excuse me, frog in my throat. All right, here's another question. I'm curious as to why certain clients can produce /r/ in initial position, but not in final position? What is it exactly about that vocalic /r/ in particular that seems to be so challenging for so many?

- Okay, so if we say a prevocalic /r/ like read and then we say car, if you all say it with me right now. Read, car, you need more tongue tension for the post vocalic /r/, and that's what makes it more difficult. And that's generally why I start with prevocalic /r/ first because they can do that. But we need more tongue tension. So that's when we have to start using some of those exercises where we alert them to that tension, which is the most difficult part of teaching in /r/ is that tongue tension and that's why I include some of those myofunctional exercises to alert them for the tongue awareness. And like I've said, a lot of times kids maybe don't have any myofunctional problem. But I'll use those exercises to build in that tongue awareness. So read, car, read, car, and if they really can't produce the final, then I will go ahead and do the coarticulation like I mentioned, where I might do carry. So care requires more tension and that's final position and then I'll attach it to a prevocalic carry. And then I'm trying to cue them to keep their tongue up the whole time and not drop it down on the care. So eventually we fade out the re part and instead of doing carry, we just get care. But that's what makes it more difficult. You need more tension and that's why I usually work on ire, ear and air first. 'Cause you need actually less tension for those than for /r/, /or/ and /ɝ/. And so that's why I target my therapy a little differently. Working towards that tension in the back of the throat. And sometimes it helps to put your finger below your tongue

back here /r/. And feel the tension into your tongue. It doesn't work for every student, but sometimes it does. So, /r/, you can feel that tension, but you have to get it right at the base of the tongue.

- [Amy]Very good, thank you. I am going through the questions here. There are a few questions kind of related to age and norms that you might work on things and someone is asking, would you work on lateralized /s/ as early as three years? Or how early would you go to start working on that?

- Well in our clinic, we have worked on it at that age. But generally more if the child had had a phonological disorder we'd work on it. So we probably worked on other speech sounds with them first and then we just progress right into the /s/. I probably would start working on a lateralized /s/ about somewhere between four and a half and five. But I will say this, if the child's stimulable and you can play games with them and you can get the accurate /s/. I would go ahead and try it.

- [Amy]Got it, and then this is a little bit broader question. But having to do with what is the earliest age for which myofunctional therapy might be appropriate? I mean, would you give the same answer there, or just broadly this person is saying that she has some EI and preschool aged kids who present with low tone and that open mouth posture and the interdental resting tongue posture.

- Okay, well, generally, as far as establishing accurate swallow. If it's inaccurate, they have up until about the age of five to outgrow that. So actually, you know, formal myofunctional therapy for a swallow, you might want to wait until after the age of five. However, if there's a lot of low tone, I don't see why you wouldn't be able to do a lot of the myofunctional exercises, separate from working on a swallow where they may not necessarily understand that. But building in that tongue awareness, I think there's so many exercises we can do where if there's low tone working with just basic tongue

exercises, tongue in and out, circle your lips, side to side, building in symmetry. And there was another, I was gonna mention. I think I lost my train of thought there, but just building in that symmetry and maybe kind of doing exercises related to some of the sounds. I'm going to assume that this person with the low tone might have some other sounds. They have to work on first that you could be working on and then building that in there too.

- [Amy] And then I think that's a good Segway into a question from Carrie here. Who's asking about the first case study, which I believe was the dental lisp. Carrie, let me know if I'm wrong about that. She's asking if you did oral facial myology therapy for six weeks and then start another eight weeks for more specific articulation therapy?

- No, I did them together because like I said, myofunctional therapy is within our scope of practice, but we should be doing it along with artic therapy. So I'm glad she asked that question and I'm sorry, I didn't explain it as well during the presentation. But when we're doing the myofunctional therapy, we're doing it along with artic therapy at the same time.

- [Amy] Okay, and so that Segway's into a couple of people have questions about someone was mentioning that she doesn't really have any experience with myofunctional therapy. And do you have any recommendations for courses in oral facial myology that you might recommend?

- I have seen a lot of them offer, you know, online, through presentations like this. But the way that I started when I would receive the referrals from the orthodontists is I just bought that Richardson book and the exercises are laid out. So plainly and clearly there, I think that's really the best way to start because generally I don't think we need to do too much more than what he's presenting there in building in the tongue awareness and it's pretty easy.

- [Amy] Great, thank you and there's a couple of pretty timely questions here related to telepractice since so many people have been doing teletherapy for awhile now, and may continue to be doing that for a bit. Do you have any work arounds, especially for the /r/ since you can't use tactile cues and then someone else asked a somewhat related question about could you have the parents be involved on the other side and do some of the resistance with the child or any recommendations there about how to integrate some of this with teleservice.

- Yes, so I'm doing teletherapy now too, because we're off-campus and so I'm starting with that first. I think it was my second case study, the lateral lisp. We've worked through his /s/ and /sh/ and so we're gonna be starting /r/. We just actually saw him today for the first time, I'm going to use the RT Gram Spectrograph. I'm going to have the family download it and we're going to try it. So it'll be my first time doing that. I've used that with students face to face. Now we're gonna try it through telepractice. I'm glad that question was asked too cause I meant to mention that, that you can use that, you just do the screen share and so they can be talking into it and we can monitor what's going on. As far as some of the other things that gets a little tricky or some of them a parent can probably help with. I don't think there's any problem with, you know like using the rigid straw and having the kid put it in their mouth and the mom monitors that. Any of the straws, but as far as getting like maybe doing the candy sticks probably not gonna work because they're not gonna know exactly where the top of the tongue is. But to reduce lip rounding, I think it'd be fine with telepractice. If you're familiar with it, there's usually a helper on the other side. So for our kiddos that we're working with, the moms are sitting there. And so we did do, last semester we had to finish up on telepractice because the university closed down. So we were doing the myofunctional swallowing and we just had the steps listed on a PowerPoint. And mom had a glass of water there and he was taking the sip and actually he was working with a student and the student was cuing him as to what his tongue should be doing. So

yeah, we were able to do that. I'm waiting to see how effective our therapy is gonna be in telepractice. From scratch with the kiddo who just worked through the /s/ and the /sh/ because the other boy did really well. And we saw him yesterday, but we were able to start with him in person working on /r/, and we're finishing him up online and he's doing great. He was able to, you know, hang in there with us during spring, and I think he'll be finished at the end of summer. But those are the two things that I would try. I would say yeah, use mom as a helper, nothing super invasive, since they're not a professional, they don't really know where something goes. I wouldn't have them putting a tongue depressor in the mouth or pushing anything like that. But the mom can maybe demonstrate if they're not really getting what you're saying. If you ask them to put the cheerio up and swallow I know that's what the one mom was doing, she was doing it with him and she was just great. Like I said, if you get parents involved and they help you, that just goes so far.

- [Amy] That's wonderful, related to the RT Gram program, is there a specific type of microphone that's needed or can people typically use the internal microphone for the computer--

- It'll pick up the internal microphone. In our clinic, this headset that I have on, we have the mic and so that's what we usually put this around. Drop this down around the headset around their neck and they talk through this mic 'cause it picks up a little better. But I have also, you can plug in any external mic and it'll also pick it up right on the computer because our one student was doing it just with the mic. And that was after she got really pretty good at it and she really liked using that program to monitor herself. And it will pick it up that way as well. Now there's a couple of questions here related to /sh/ and /ch/. Manga is asking for lateral /s/ with /sh/ and /ch/ in error. You suggest working on /sh/ and /ch/ first is that right? And what if the child's age is closer to four, four and a half, does that still apply?

- For me generally, yes, I'll do the /sh/ and /ch/ first, but like I said, you can be flexible. So if the child is more stimulable for an /s/ you could do the /s/ first. I just do the /sh/ and /ch/ first because it seems like you can cue the /sh/ with the tongue further back and the /sh/ requires like a wider central apertures. So we can really get them to drop the tongue a little bit lower, whereas the /s/ is a little more fine tuned. So I think it's a little easier to work with the /sh/. But I'll actually do /ch/ before /sh/ because they still can hit their tongue tip up there and then they gotta drop it down. So I would probably do the /ch/ first, then the /sh/. With a continuous sound and then the /s/ is what I would do for a younger student. And I've had a success doing that with children at that age. = [Amy] Great, thank you. Someone is asking what speech norms that you're using and noted that she is mandated by the state to use Iowa Nebraska in which /r/ is considered developmentally appropriate at age eight for both girls and boys.

- Oh, so that's tricky. So the norms I was using, I had the reference on there. It was the Schriberg and the Goldstein norms and then I also use Sanders norms. I didn't have his chart up there, but those are the ones I'm using. I mean, I guess I would say you know, maybe. Go ahead and pull those up and maybe share that with whoever you know, is in charge there. The other way that I go around this. If you were told that is I do phonemic awareness program. So I'll go in and work with kids on phonemic awareness and I make sure I get my artic kiddos into the phonemic awareness. Even if, you know, they don't seem to have phonemic awareness problems and I can address it that way too. So I can really start working on it earlier. And when I was in the schools, I always did phonemic awareness groups for kindergartners. And then I would just follow up you know, as I could with artic for them when they got into maybe first or second grade. But just the phonemic awareness is a big help as well.

- [Amy] Okay, there's a couple of short ones. Carrie was asking if you could repeat the finger cue that you use for the second case study for production of the /sh/.

- Okay, sure, so we have put our finger in front of our mouse and we go sh. And we drop it down as we complete the word. So, shoe, so we're actually elongating that /s/. Shoe, show, shy, and it's just directing that airflow. Not every child needs to use it, but this particular child, because I said, you know, his lips were darting off to one side that was meant to help him actually more with his symmetry than the sound. It was to cue him, to keep both sides of his lips the same.

- [Amy] Got it and Anne was asking if you ever postpone therapy when kids don't have their front teeth?

- I'm assuming maybe she means for /s/ or.

- [Amy] I am assuming so too.

- Yeah, I would say yes. So when I would screen children, if they were missing their front teeth. I think I said I would postpone it if they had an interdental, because it's obvious there's no teeth there. And it's possible the tongue is going there. I wouldn't necessarily postpone it for a lateral /s/ because I don't consider that more along the developmental lines. However, I might, it's gonna be on a case by case basis. Depending on the age of the child too. So in that instance, I'm gonna see if there's stimulable, so I'll postpone it if they're not. You know, if I not gonna get anywhere of course, I'm gonna postpone it. But if they're still stimulable, by putting that tongue by the alveolar ridge, then maybe I won't postpone it. Maybe I'll put them on because obviously I would put them on because they're you know, stimulable so we can get some work done.

- [Amy] Got it, I did just want to mention to our audience that I know we're at the top of the hour. Certainly if you need to go feel free to go, you'll be counted for full attendance, but we are gonna try to go maybe another five minutes or so to see if we

can get some more of these questions answered. I know there's tons, we're gonna run out of time, but I'll get to how many that we can. There were a couple of people asking. I know you mentioned that you use the Fisher Logemann, but one person noted that she doesn't have access to that where she works and there were a couple people asking if you have. Other recommendations for screenings to look at /r/ and all the different contexts. Excuse me and word positions.

- Yes, I actually created my own /r/ screening and basically I addressed all the different /r/ in my initial, medial and final position. So I just, you know, found some pictures, three for each. And so like my top row, I think is airplane, fairy and fair. So I just do the air sound and then the ear sound, I would do the same thing. And I go right down through all of them and I actually give that along with the Fisher Logemann, but that's words. So the Fisher Logemann, lets me hear it in sentences and I'm pretty sure it's still available, if a district wanted to order it. The other thing you could do is, I mean. You could probably create your own sentences if you want to, but there is also, I think the Goldman, Fristoe has sounds and sentences. Another test I've used is the Arizona. I like the Arizona too, as far as standardized tests, the Goldman Fristoe and the Arizona. But I do also have my own little /r/ screening that I created on my own. So I can hear every single /or/, you know, like orange, corn, door. That's what I would use for the ors.

- [Amy] Got it, okay, thank you. And Lisa is asking about, I think she's talking about the story, the robber story. Yes, exactly, do you use that just with students who can read and if they're not readers yet, how do you use those stories? Do you give them a model? Do you ask for a retell?

- Yeah, I just use that for students who can read that was created for upper element, like fourth grade and up. If you have good third grade readers, you could probably use it with them. I guess you could use it with second graders too, some of the words

might get a little more complex. So if I used it with a little younger student, then I'll read it with them. So they'll read part of it and then I'll read part of it 'cause the stories are pretty long actually. But I felt I needed something for older students because that's who's referred to me mostly now and so I generally use it with fourth grade and up.

- [Amy] Okay, got it. We have a few questions related to the candy, the airheads. So, you're talking about the taffy kind of sticks, right? That are sort of longish and flattish and someone was asking if you placed that flat in the mouth, are you turning it so that it's a little more vertical?

- No, you place a flat and they have to put the bend in it by moving their tongue. So you have to put it straight into the mouth on the back part of the tongue. So that's a tricky one, I probably wouldn't ask a mom to try that sort of thing at home. That's one of the instances, it's not like they would hurt the child, but they're not gonna achieve what it is I need them to achieve. So that's the one where the therapist has to be present to do that and it goes in flat and if it comes back out flat, they didn't make the /r/. But if it has a bend in it, when it comes out, they made the /r/ and then they get really excited. Or I get excited as well.

- [Amy] And I know those are kind of sour, right? So someone was asking, do you notice like an increase in saliva production with use of that candy?

- I don't notice an increase in saliva production, but I will say that you can only maybe use them. You can put it in and out maybe three times, and then it goes back in the wrapper and they get to take it home and eat it because it gets a little flabby after two or three times.

- [Amy] You get a little warmed up and softer.

- And you do have to use a full size one because sometimes they're hard to find. But they have some mini ones, they're not gonna work, they're too small.

- [Amy] Got it, well I feel like, we need to wrap up here. We've gone a few minutes over and I know that people have clients to get back to and so forth. So, we will go ahead and wrap it up here, but I did want to point out to our audience if you have questions that didn't get answered. Lynn was kind enough to provide her email address. It's on the title slide in your handout. So, Lynn, this was really fantastic, so much good information here. I loved all the practical therapy, examples, and /r/ and /s/ are always a challenge. And I think you've presented us with a whole bunch of new ideas for how to tackle those. So thank you so much.

- I hope so, you're welcome, I enjoyed this. All right, thank you so much.

- [Amy] Thank you to our audience. Huge audience today, fantastic questions. Thank you for your attention, I hope that everybody continues to stay safe and healthy out there. And we hope to see you at another webinar before too long. Everybody take care, thank you so much.

- All right, thank you, thanks everybody, bye.