Creating Mealtime Routines for Infants and Toddlers with Visual Impairment Study Five Results Transcript

Slide 1:

Welcome to Creating Mealtime Routines for Infants and Toddlers with Visual Impairment. This brief review will share what we have learned through our research about strategies and resources during Study Five of the MRVI Intervention Project.

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An Intervention for Infants and Toddlers with Visual Impairment: Independence through the Mealtime Routines Model is a federal grant at the University of Northern Colorado to create a research-based intervention. We completed five studies over three years- from 2016-2019- including two disciplines: Special Education and Nutrition and Dietetics. The five studies began with Study 1 – where we created a survey to collect information on what Teacher of Students with Visual Impairment in Early Intervention (TSVI-EIs) knew about typical mealtime development skills and how they learned that information. Study 2 involved creating a 5-day intensive training on research-based knowledge to help families with mealtime routines. Study three focused on TSVI-EIs use of the content and Study four, or child and family outcomes, collected data on the initial implementation of the MRVI Intervention, and changes were made to coaching, content, strategies, training, and data collection. Study Five was a pilot study that compared the results of seven families who received the MRVI Intervention through their TSVI-EIs and seven families who received business as usual early intervention vision services as a control group.

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Study Five was a Randomized Controlled Trial or an RCT. Based on all of our assessment data, participants who received the MRVI Intervention made significantly more progress during mealtime routines than the control group. Because it is a small sample, we cannot generalize our results to everyone, but for THESE two groups, the MRVI Intervention could potentially make a difference and requires further testing.

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But what have we learned that will be helpful for you? As you know, the MRVI Intervention has created a website where you can access Resources created during the MRVI Intervention project that families and TSVI-EIs asked for to help during mealtimes. Feel free to download them – and TSVI-EIs should discuss specific ideas with families to match the child's needs.

Strategies will be discussed during this presentation and there are many more included in the MRVI Resources

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So why is Vision important at mealtimes?

Mealtime is when we learn about the colors and shapes of foods, how to make eye contact when we make requests, we share facial expressions about likes and dislikes as well as having conversations about the details of our day.

How do we teach mealtime skills? Let's find out.

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Mealtime is mostly taught through imitation. Our families shape how we eat, what we eat, and when and where we eat. What you learned about food as a child, will carry over to what you teach your child through our culture and preferred foods.

Some of the mealtime skills children learn through imitation are obvious like using utensils, chewing patterns and taste responses. Others are not as obvious like timing or pacing or reading the cues for hunger and fullness.

If a child has limited access to what is going on at the table because of a visual impairment, how can we teach these skills?

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Think about a typical mealtime and all the things that happen. What are children with visual impairment missing? For example, what do we learn from where we eat? Having a consistent place to eat in the home such as a highchair, family table, kitchen or dining room provides a cue for anticipation of the meal, location to show caregivers when they want to eat, and is a simple way to establish a routine.

If children eat in a place where they do other things, such as a car seat or in front of the television, it is not clear to them what is happening. Are we going out? Can I fall asleep?

What parts of the mealtime do we not usually teach? Placement of food can involve opportunities to help the child use their best functional vision and may involve specific food for the child or family style portions for everyone. Timing of the meal is not often something we think of –does everyone at the table get their food all at the same time or do they eat one kind of food at a time?

And finally, mealtime is a social experience, we learn many things at the family table, including the subtleties of interacting with one another. Young children like to watch their parents eat and often develop an interest in new foods this way. Conversational turn-taking and manners develop at the table over time and research has shown that future academic success is closely linked to family mealtimes.

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Your Child is unique and will have unique needs as they are learning to eat. The MRVI Intervention will not look the same for everyone.

Depending on your child's eye condition and developmental differences, your TSVI-EI and you can review and choose the resources and strategies that will best fit the needs of your family**.**

In order to be respectful of a families' cultural beliefs at mealtime, spending time with the family and asking questions will help to understand the expectations for each child. The use of the MRVI Intervention should support family strengths and provide helpful information about

developmental mealtime skills to encourage independence at the table for the young child with visual impairment.

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The TSVI-EI does have a role in helping families at mealtime. That role is not to replace that of the Occupational Therapist, Nutritionist or Speech Language Pathologist, but to work with these members of the Early Intervention Team and contribute their unique skills.

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So, what IS the specific role of the TSVI-EI at mealtime?

Initially, it is important to improve the awareness of everyone on the team, Including families, of the imitative, visual nature of mealtime. Eating is a visual task and children must have access to all parts of it.

TSVI-EIs should use what they know about the child's functional use of vision to create visual adaptations to enrich the mealtime environment. This may affect seating, lighting, or even the placement of food.

TSVI-EIs should support families to encourage early and ongoing tactual exploration of utensils and self-feeding skills. Developing tactual and fine-motor skills at mealtime is a pre-braille skill.

TSVI-EIs can set the foundation for families in the reading and reinforcement of their child's alternative mealtime cues. Close observations can help determine what hunger and choice cues look like, as well as knowing when their child is done.

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Some additional ways that TSVI-EI can assist the families is to always be aware of the challenge families may be having at mealtime, consult with other members of the Early Intervention team and to know when it is appropriate to refer families to their pediatrician. It is as important to know when help is needed as when referrals are appropriate.

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So, the rest of the slides include what we have learned from Study Five that can help you. The strategies and information from each of the five areas are based on the feedback from our study participants and the collected assessment data from monthly videos. The five areas include Mealtime Environments, Developmental Mealtime Skills, Parent and Child Interactions, Nutrition and Food Choices, and Utensil Use.

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The Study Five Child and Family outcomes that were desired for the MRVI Intervention group over the Control group were:

1. Increased parental confidence in meeting the developmental mealtime routine needs of the child with VI
2. Increased variety of healthy food choices
3. Increased use of age-expected utensil skills
4. Increased caregiver/family engagement at mealtime

A variety of assessments were scored by watching the monthly videos submitted by our study participants. Data did indicate that the MRVI Intervention shows promise for achieving these outcomes.

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Making adaptations in the mealtime environment should considered by the family and TSVI-EI after completing the Functional Vision assessment. Appropriate lighting can facilitate the mealtime experience whether it involves decreasing glare through turning the highchair so the back is against the window or having a directed light source on the presented food.

Visual acuity, visual fields, light tolerance and brain processing all have an effect at mealtime. If a child is nearsighted, he or she may not need to wear glasses at mealtime because the food is close by. If the child is farsighted, mealtime may be the perfect time to encourage wearing glasses because the visual experience will improve.

Family culture may guide the noise in the room during mealtime as some families like to play music or have many family members at the table. We recommended limited television viewing during mealtime as research confirms if interferes with adults reading their children's cues of hunger and attempts at communication, and young children may be confused by artificial speech in the room. They may confuse who is actually talking to them and eating is difficult work!

While young children with visual impairment should be encouraged to use their sense of smell at mealtime, caregivers should be aware that perfumes, candles, and cleansers can be distracting. Removing smells that are not related to foods at the table can help children connect food presentations to enjoyment.

New people can also increase a child's interest in what is going on at the table so everyone should be encouraged to participate at the meal. Sharing a cup of tea or some crackers while the child is eating is an easy way to make everything more social.

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Early caregiver and child interactions include touch to guide the mealtime process. Infants learn cues about getting their needs met through communication that includes gestures and subtle movements. In providing opportunities to use touch cues such as holding the infant, chewing cheek

to cheek, and moving in close caregivers allow for mealtime communication to begin.

The American Academy of Pediatrics recommends that supplemental feeding does not begin until the age of six months so that the infant is physically ready, including having head control and upright posture. In addition to the benefits of having a location where children eat at mealtimes discussed earlier, it is important that they are safely positioned and can use their hands as time goes on for self-feeding.

If your child needs assistance to be positioned at mealtime, it is critical that the Early Intervention team work together for the best outcome. Infants and toddlers should be safe and well-positioned so their attention can be on eating and interacting with others at the table.

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The MRVI Intervention recommends several adaptations to mealtime equipment that may or may not work for your child**.** It is important to work with your TSVI-EI to determine what adaptations will meet your child's visual needs.

White noodles on a white plate on a white tray may work for most people, but if we can make foods more appealing and visible for your child, the more likely they are to self-feed independently. In using various colors of plates or outlining areas where foods are placed, children will not have to work as hard to find different foods. Placemats can help young children understand the boundaries of their eating area and increase tactile interest in surfaces.

Using a variety of spoons can help with texture acceptance and build independence for utensil use. Having several spoons or "dippers" available at every mealtime for your child to explore will support their understanding of these tools while you can assist with the volume of food they need to eat.

Cups and straws should encourage early independence. You can experiment with small "shot-glass" sized open cups to limit spills, and lidded sipper cups should be considered transitional options. There are one -way valves to assist children in using straws who cannot see their progress.

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Competent parenting is protective, mindful, and an integrated blend of warmth and developmentally appropriate control. Sounds easy, right? Rarely!

Supporting caregivers to assist their young children with visual impairments during mealtimes is important work. The relationship with food that is established while young will last children all of their lives.

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Responsive parenting refers to family interactions in which parents are aware of their children's emotional and physical needs and respond appropriately and consistently. Responsive parents at mealtime are able to read their child’s hunger and “fullness” cues, show affection, and use strategies to teach their child “next steps” in development. Using several different assessments while watching videos of mealtime, the use of the MRVI Intervention did appear to be helpful to caregivers in providing encouragement to their children at mealtime and reading the children’s cues and teaching about mealtime skills.

TSVI-EIs can be most helpful to caregivers by sharing their understanding of mealtime development and providing specific adaptations for each child.

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Let’s talk about the importance of knowing typical mealtime development skills. Why is this necessary? Everyone knows how learning to eat happens!

> This is not true. Educational resources to address typical mealtime development are limited and it is only briefly touched on in professional preparations programs. In general, understanding child development helps us to have reasonable expectations. Learning to use a spoon is a

skill that must be practiced. We do not expect any nine-month-old child to use a spoon on his or her own!

Children experience success when they have positive interactions. If we have unrealistic expectations of what a child can do, success is not likely.

Caregivers should always have high expectations for their children. The presence of a visual impairment should not mean a child cannot acquire age – expected skills. However, if a child does not have opportunities to use a spoon, it is unlikely she or he will learn to use it.

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Here we have an example of why knowing typical development is important. Many children with and without visual impairment drop or throw spoons on the floor during mealtime.

Numerous developmental checklists indicate that this is typical behavior between the ages of eighteen months to three years.

What is important is the “why”. When children drop their spoons, they may be learning about gravity, sound, or a variety of concepts, and communication. “If I drop my spoon, Mommy will know that I am done, or it helps to get her attention.”

Another alternative is that the child is using the dropping or throwing as a behavior. This is not always the case. But when this is what is happening, it is an opportunity to teach patience -yours or theirs! or boundaries of spoon use. For instance, “I know when I drop my spoon it will be taken away.”

More strategies to address this common mealtime occurrence can be found in our “Dropping and Throwing” resource, but the strategy to choose is the one that meets the child’s needs- is it development or behavior?

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The Eating Checklist is an observational checklist developed for this study based on existing research on children with and without visual impairment.

In order to know if children are demonstrating age expected behaviors with mealtime tasks, we needed to understand what is age-expected behavior!

Two MRVI research team members used the Eating Checklist while watching the monthly mealtimes to monitor the development of these behaviors. The fact that we only had one video a month meant that it was rather “hit or miss” if we observed a skill. While children in both groups made progress, the intervention group appeared to make more progress.

Our recommendation is that in future research, the Eating Checklist should be used by TSVI-EIs and caregivers to guide and document intervention.

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Family mealtimes provide opportunities for caregivers and children to communicate in a rich contextual environment. Mealtime should be a time of positive interactions between children and the adults they know best. In addition to the actual time when children and adults are eating, we included the communication that occurs before the meal during the preparation, and when the meal is ending.

Were the children part of the preparation? Do they know where the food is kept such as the refrigerator or the cupboards? Smells, sounds, and textures change as we prepare what eventually appears on the child’s plate.

And clear endings are important as well. Is there a song, a clean-up routine or physical cues to let the child know the meal is over and it is time to do other things?

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The results of the MRVI Intervention Study Five made evident that caregivers were more likely to use gestures and language during mealtime than the Control Group. Fostering independence at mealtime requires that infants and toddlers with visual impairment know what is happening at the table and how they can be a part of the family experience.

Some strategies to consider during mealtime with infants and toddlers with visual impairment include using touch to share new foods and textures. Consider the Hand under Hand method when children are hesitant to touch. Move in close to allow them to brace their feet on your knees or feel your cheek when you are chewing.

Narration means you talk the child through the experience. An example might be “I am taking your sweet potatoes out of the refrigerator, Ooh, it’s cold!” or “You are hungry today, I see you reaching for the spoon!”

Description and labeling is slightly different and might include using single words such as sharing what foods are on the tray or explaining textures.

Inviting children into the conversation can be as simple as repeating their vocalizations or asking a question and waiting for them to respond. It is okay to talk about other parts of the day that may have already happened or will happen later. Having these simple interactions with children show them you are “present” and you care about their contributions.

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Safety First! Whenever interventions are used that might affect food intake, we must ensure that nutrition and growth in children is not negatively affected. We did not find that the MRVI intervention negatively impacted dietary intake. We also followed the children’s growth as an indicator of nutritional intake. We did not see that the intervention negatively affected growth. We did not have adequate data to determine whether the intervention could prevent growth problems.

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We asked parents to record what their child was offered and what they consumed for three days per month. They reported the information using the BEET IT questionnaire. We wanted to see if children were accepting foods appropriate for age in terms of variety and texture because food

selectivity in children with visual impairment has been reported. Sometimes we call this “picky eating”. We also know that a greater variety of foods accepted is associated with better nutrient intake and health.

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Here is what we found…..the children who received the intervention scored higher than the children who did not receive the intervention for food textures across all ages measured. This means that the intervention was associated with the children eating textures appropriate for their age more often. It should be noted that some children were not developmentally ready to consume recommended textures by chronological age.

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Six to 12 months of age is when infants are being introduced to solid foods. The children who received the intervention were ready to accept solid foods more often than the children who did not receive the intervention. Accepting a greater variety of foods early on often relates to greater food variety in diets later on, thus reducing food selectivity.

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The children who consumed a greater variety of foods tended to consume healthier foods during the 13 to 24-month age range. This was not affected by texture. Thus, those children who consumed a greater variety of foods even if pureed, had healthier food intake.

We did notice that the intervention group consumed more grains and the control group consumed more snacks, however we do not know if this was related to the intervention and it does not seem to be correlated with overall healthy food choices.

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Learning to use utensils such as a spoon or a fork is one of the most important skills toward independence at mealtime. In order to develop the necessary fine motor skills to manage utensils children need to spend time with them discovering weight, textures, and movement. Our recommendation is that spoon should be presented at every mealtime for the child to explore, whether they are able to use them or not.

The MRVI Intervention research demonstrated that all the children had some delay of fine motor skills for utensil use. The intervention group had more participants who acquired more fine motor skills over the year and were more likely to use a spoon independently at the end of the study.

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The MRVI Intervention Project was all about helping families create Mealtime Routines that would support young children with visual Impairment become independent eaters.

So, what is a Mealtime Routine?

First, it is important to keep all the routines simple. They should be easily integrated into family life.

Mealtime routines should be consistent for the child. That’s what routine means! Infants and toddlers should be able to anticipate what comes next when you take them to the kitchen and wash hands or sing songs!

Mealtime routines should have a clear beginning, middle, and ending so children know what to expect.

Instead of giving children toys at the table while they are waiting for food, encourage them to play with mealtime related items such as spoons, bowls and cups. This will increase their familiarity with these items and there will not be any power struggles when it is time to eat.

And finally, mealtime routines should include caregivers! Learning to eat is a social experience and children will enjoy it so much more if their caregiver is enjoying this messy, joyful time with them!

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We are grateful to all of the families and TSVI-EIs who participated in the MRVI Intervention Project. In addition, thank you to all of the members of the Research Team and the Institute of Education Sciences.

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