# Families Promoting Travel Skills for Their Children with Visual Impairment

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**From the Editors:** Keeping with our TNR tradition, we usually include a legacy article that was previously published in one of AER's earlier journals. For this issue of TNR, we have chosen an article that has been a foundational piece on how to engage a child when planning a trip. The original article has been screaming for an update, and the authors of this reprint have included an introduction that updates the article in relation to the use of technology for trip planning.

## Authors' Introduction to This Legacy Article

**Technology Has Impacted How We Travel—**The impetus for the 2003 article, *Families Promoting Travel Skills for Their Children with Visual Impairments,* came from a family weekend workshop held at the California School for the Blind. Dr. Rosenblum shared ideas with families on how they could support their child's travel skills development as a young person who was blind or had low vision. Both authors continue to meet with families and others to share ideas. However, the ideas we share today are infused with technology.

One idea that we suggest to families is to have younger children assist in planning a family outing. In the past, this would involve using a paper map, calling a business to get information, and/or using a braillewriter or black marker to write out directions.

Today, one brings up a map app on a device, looks in a search engine for the address and hours of operations, and jots directions on a device and/or takes a screenshot of the map. Having the ability to use technology when planning for and executing travel is essential. Children must build these skills beginning in elementary school.

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In the article we pointed out ways for children to take part in the driving experience. Today drivers can easily activate their GPS, but we believe children should still have responsibilities that are age-appropriate. They can still offer to pump gas, plan other aspects of travel such as finding a restaurant along the way, or reading the GPS to give the driver directions when the sound is muted.

Communication during travel has also changed. Gone are the days of carrying enough change to make a phone call from a payphone. Do today's youth know what a payphone is other than something they see in a movie? When traveling today, one can allow others to follow one's travel in real time, text others to share or obtain information, and employ visual interpreting services to get sighted assistance when one runs into an inevitable travel challenge such as a street barrier.

The arrival of rideshare services such as Uber and Lyft have revolutionized travel for many of us who are nondrivers. Dr. Rosenblum believes that the discomfort she felt taking taxis has been replaced with a feeling of normalcy when using rideshare services. Families can travel together using an Uber or Lyft so that their child becomes familiar with using the app, communicating with the driver to ensure they are getting in the correct vehicle, and following the route on their device, an important safety consideration. Now that GPS apps announce upcoming streets, Dr. Corn has reduced the number of tasks she must complete with her bioptic telescopic system when driving.

In our original article we presented our ideas in different sections. The first, which describes environments, is important. In addition to family members describing the environment, children can use apps to follow the travel route. Apps allow them to know what road they are on, what roads intersect with that road, and what businesses they are passing. Ways to involve the child in planning travel is the second section addressed in the article. We also want to point out that gas is no longer $1.15 a gallon! There are apps that allow one to check the cost of gas, so children can explore those and help the family decide where to go to fill the gas tank.

No matter how much technology is available, children must have the skills and confidence to speak with others during travel. Families need to encourage their child to interact with others and to provide realistic feedback to the child about those interactions.

The third section in the article focuses on introducing children to others who are nondrivers. Interactions do not have to occur in person. Professionals can use Zoom and other online meeting tools to introduce students to others. Families and professionals can connect young people with nondrivers and/or low vision drivers both in their local community and anywhere in the world.

The last two sections of the article address driving with low vision. Since we wrote this article in 2003, more US states have passed legislation allowing those with low vision to drive if they meet the visual requirements and can pass the road test. Children

can use their device to research driving laws and requirements in their state or province. The reality is that they will need the same pre-driver awareness training we discuss in the article. Time on their bicycles, in the front passenger seat using their vision to identify information in their environment, and learning to work with a bioptic telescopic system are just a few of the opportunities they need to have.

We thank the editors of *The New Re:View* for selecting our article as a legacy article. We are in awe of the changes in travel all of us have experienced in the last 20 years. Can you imagine what options there will be for us in 2043? Both Dr. Rosenblum and Dr. Corn are hoping they will be owners of autonomous vehicles!

**Original Article from *RE:view:*** As a child with low vision, living in suburban New Jersey, the first author and her father played games while traveling in the family car. One game involved telling her father as soon as she spotted a road sign; her father then read the signs. For her to have read the sign when she spotted it was too visually challenging for her acuity of 20/200. Another game involved naming the colors of the cars that pulled onto the road from driveways or side streets. These games allowed her father to gauge her distance vision, but he did not realize that for her they also promoted a beginning understanding of the visual information drivers receive as they drive.

Under the Individuals with Disabilities Education Act (IDEA), children with visual impairments may receive instruction in orientation and mobility as a related service. Orientation, the process of knowing where one is in space, and mobility, the process of traveling in a safe and efficient manner (Hill & Ponder, 1976) are essential skills for all children with visual impairments. Well-developed orientation and mobility skills such as being able to cross streets independently, to travel using public transportation, and to locate a specific address allow nondrivers to be as independent as possible.

Families of children who are blind or who have low vision may not recognize the many skills they can teach their children during family travel. They also may not have considered ways in which they can promote their child's development of travel skills, long before he or she would be expected to travel independently as an upper elementary aged student or teenager. In this article we offer recommendations by which families can promote their child's independent travel. For children with low vision, many of these recommendations may also lead to increases in visual efficiency. We believe that families can start in the preschool years to help their children lay the foundation for independent travel. We close the article with a section that discusses ways to prepare children with high levels of low vision to explore their potential for becoming low vision drivers.

## Share Information During Travel

Because 90% of what children learn in the first 5 years of life comes through vision (Barraga & Erin, 2001), children with visual impairments are at a distinct

disadvantage for learning about their world through incidental visual information. Families quickly learn the importance of verbalizing information that their child cannot see but may need for immediate movements: "There's a step down at the end of the patio." However, many children with visual impairments are not aware of the activities in which their parents and others engage when traveling about.

We believe that the freedom of traveling independently or with friends that most adolescents enjoy should be available to adolescents with visual impairments. Therefore, initiating travel information and experiences should begin in the early childhood years and not be delayed until adolescence.

We have organized the information that follows into categories and offer examples for each category. We encourage parents to think of the age- and ability-appropriate information that each child should receive. For example, a 3-year-old needs to know the difference between trucks, cars, buses, and trains, whereas a 6-year-old may learn that some roads have one or more lanes, that there are traffic signs, and that cars and pedestrians have rules they follow for safe travel.

### *Describe Environments*

Adults are familiar with the environments through which they travel and can grasp new information about unfamiliar environments, but children with visual impairments need to learn how the physical world and movements through it are organized. Children need to learn the following information:

- Traffic, turns, and intersections. "Our car is at a four-way stop sign, and we must wait for the car on our right to go first." "The driver in the car in the lane on the right just signaled that he wants to move in front of our car."
- Other vehicles on the road. "There is a tow truck in front of us that is towing a car to the garage." "There is a motorcycle in front of us. It is smaller than cars, so I need to know where it is at all times."
- Signage. "Some signs tell me how fast I am allowed to drive on this road. "I see the mileage post for mile 32. That means that our exit, number 35, will come soon, in 3 miles."
- Businesses. "I see a new shopping area is opening on the right-hand side of this road. It will have a toy store, a shoe store, and an ice cream shop. "The car dealership has put up signs announcing a big sale."

### *Involve Children in Travel*

Children who are blind or have low vision can be included in activities during travel. Having travel responsibilities beginning in the preschool years increases

their grasp of orientation and mobility skills and prepares them to take on more complex travel responsibilities. Children can be involved in travel in the following ways:

- Looking for a landmark. "Tell me when you see the sign for MacDonald's so I know where to turn into the parking lot." "John told me that before we reach his street, we should look for a wooden fence on the right."
- Taking responsibility for leading. "Today, why don't you show me the route to the grocery store." "We will need to stop at a red light. When we stop, please point in the direction we should go next."
- Planning routes. "On Sunday, Uncle Joe is going to take you to Grandma's house. Let's write down the directions for him." "Today there's construction on Main Street. Can you think of another way to get to Paula's house?"
- Using maps and other resources. "We need a map to show us how to get to the park. Can you get on the Internet and print one out for us?" "A map can tell us which roads to take. It tells us the name of the road we need to turn on and what road to look for just before we turn."
- Determining the order of travel destination. "We need to go to the grocery store for milk, to the shoe repair store, and to the post office. Where shall we go first, second, and third?" "We need to find a store that sells travel alarm clocks. How can we find one?"
- Traveling on public transit or by taxi to familiar locations. "Here's how we pay for a ride on the bus." "When we call a taxi, we need to tell the driver where we want to go and be ready when we arrive to give him money for taking us."
- Being encouraged to interact with cab drivers, bus drivers, and train conductors. "Here's the money to give to the bus driver." "Would you call the bus company and find out what time the bus leaves for Springfield?"
- Learning the costs of transportation. "Gas is $1.50 a gallon this week. I need at least $15 for gas for the week." "Mom is writing the check for $480 for car insurance for half a year."

### *Involve Children with Nondrivers*

Long before they reach an age when their peers will be driving, children wonder how they will travel and whether they will need to rely on others for rides. Meeting independent travelers who do not drive gives children confidence that they, too, can achieve certain levels of independence. The following are suggestions to facilitate children's understanding of nondriving.

- Provide opportunities for children to talk with young adult and adult nondrivers. "This is Cara. She doesn't drive a car. Ask her how she does her grocery shopping." "George doesn't drive a car because he doesn't see well. He uses a bicycle What do you think he does when it is snowing?"
- Learn the address of a nondriver that the child has met and how that person travels to different locations. Allow the child to shadow this individual as he or she travels to experience what life is like for him or as a nondriver.
- Pretend the child is going to get his or her own apartment. Use want ads and city maps to locate an apartment that would promote maximum access to public transportation and businesses by walking or riding a bike.

### *When Children Reach Dating Age*

The reality that classmates are obtaining driver's licenses and that their visual impairment prevents them from taking part in this rite of passage is stressful for both children with visual impairments and their parents. Remaining a nondriver while others of one's age are gaining independence by passing their driver's test can cause children with visual impairments to feel left out of this important time in the life of teenagers. Families can plan for this time and provide their children with opportunities to demonstrate their increased independence.

Some children with low vision may not believe their parents' statements that they cannot drive. These parents may want to take their children to the Department of Motor Vehicles for an eye exam. Some children need to hear from "the professional" (i.e., the person behind the counter who is not their parent, teacher, or eye doctor) that they cannot drive. This is not appropriate for every child; if it is done, it must be done in a sensitive manner. Hearing in a roomful of strangers that one cannot drive can be upsetting, but some children need to be told by an impartial person, such as the employee administering the eye exam at the Department of Motor Vehicles.

Parents may want to consider how much financial support they would provide the child if he or she were a driver. Make a down payment on a car? Pay for insurance? Fund routine maintenance on the vehicle? If older children in the family are drivers, parents can determine the amount of financial support they provided for these siblings. Once parents have determined how much financial assistance they would have offered the teenager as a driver, they can open a bank account specifically for transportation of the teenager who is visually impaired. Designating that money for transportation expenses only provides the teenager with capital to use for taxis, buy a bus pass, pay gas money to a friend, or hire a driver. In this way, the nondriver gains skills in budgeting for various transportation needs under parental supervision.

For many teenagers, the end of high school means moving out of the family home to either attend college or get a job. As they begin to think about their life

after high school, both they and their families need to consider transportation. A freshman in college cannot rely on her roommate to take her to the store each time she needs to make a purchase. It is imperative that she have good orientation and mobility skills and that she select a place to live that is accessible to the places she needs to go, either by walking, biking, taking the bus, or using paratransit.

### *Driving with Low Vision*

Thirty-two states allow individuals with low vision for taking a road test for receiving a driver's license (Peli & Peli, 2002). Each state sets its own visual requirements, the visual acuities and visual fields that they deem acceptable for being a licensed driver. Most states require that the driver use a bioptic telescopic system (BTS) to meet the state's visual requirements. Children with acuities of 20/200 or better and with good visual fields may have the potential to drive with a BTS. A clinical low vision specialist who is an ophthalmologist or optometrist with a low vision specialty prescribes a BTS. The BTS is placed in the carrier lens (normal glasses with distance prescription) and is situated above or below the line of vision. The low vision driver primarily uses his or her regular prescription and BTS for brief periods of time and for specific purposes. A child who meets the visual measures specified in his or her state's regulations should be exposed to a variety of activities to develop the skills needed to become a low vision driver. These activities include the following:

- Contacting the Department of Motor Vehicles to obtain a copy of the regulations to explore whether he or she meets the state's requirements for being a potential low vision driver.
- Being encouraged to ride bicycles and to learn appropriate bike safety (e.g., how to signal a turn, what side of the road to ride on). Being encouraged to play games that require quick visual decisions (e.g., games with balls).
- Working with an orientation and mobility instructor to gain prerequisite skills (e.g., to determine quickly when cars are accelerating and decelerating).
- Using monocular telescopes for classroom and community activities.
- Navigating as passengers in cars, including reading signs with telescopic devices.
- Speaking with licensed low-vision drivers.

## Conclusion

We suggested ways in which families can promote their children's development as a nondriver or a potential low-vision driver. It is important for children to have a

wide variety of experiences beginning in the preschool years so that they have a foundation for gaining control over their transportation needs.

As the 1997 regulations of the IDEA require, we encourage all families to consider orientation and mobility needs at each meeting for their child's Individualized Education Program. Parents may ask other team members to suggest the information and experiences a child should have at each age to ensure that before leaving school he or she can travel independently in various environments. Only after identifying the needed skills, can goals and objectives be established for developing independent travel skills that coincide with the student's capabilities.

Children with visual impairments can become independent travelers, either as nondrivers or low-vision drivers. Families and professionals working together beginning during the preschool years can facilitate the development of independent travel skills. We both worked diligently, well into adulthood, to develop our independence as travelers. We hope that families and professionals work together to promote travel independence for tomorrow's adults who are blind or have low vision.

## Note

An earlier version of this article appeared in *Awareness,* the Newsletter of the National Association for Parents of Children with Visual Impairments.

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