

Teenage Driver Readiness

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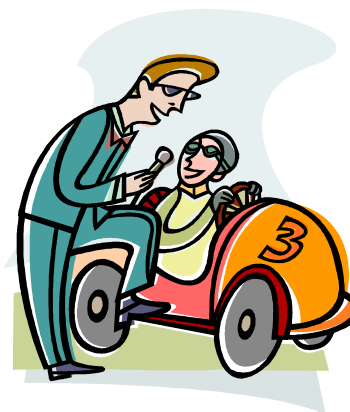
Objectives

- The learner will be able to identify what driver rehabilitation services are.
- The learner will be able to identify areas of independence for a teen to work on prior to pursuing driving.
- The learner will be able to identify potential roles for nursing in the driving process.



What is Driver Rehabilitation?

- Evaluates the ability to safely drive with a condition that affects:
 - Cognitive function
 - Vision
 - Physical abilities
- A driver rehabilitation specialist has specialized training to complete clinical, behind the wheel, and adaptive equipment assessments for individuals with disabilities



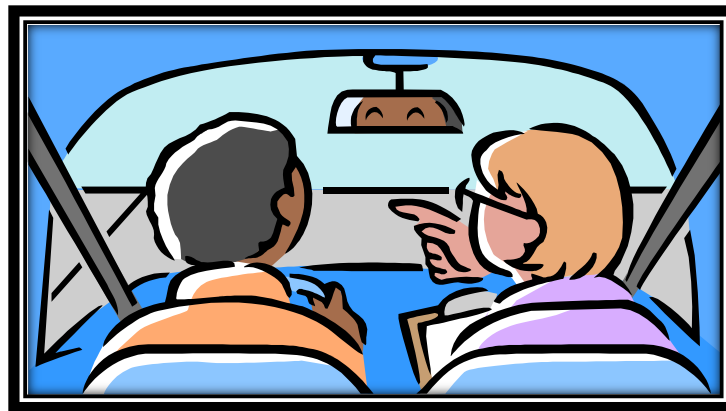
Diagnoses Evaluated by Driver Rehabilitation Services

- Traumatic Brain Injury
- Acquired Brain Injury – CVA, Brain Tumor, AVM, etc.
- Congenital and Developmental Disability – Spina Bifida, Cerebral Palsy, Autism Spectrum, ADD/ADHD, Learning Disabilities
- Limb Loss or Dysfunction
- Spinal Cord Injury
- Progressive Disabilities – MS, Parkinson’s Disease, ALS, MD, Dementia



Why Driver Rehabilitation?

“The abilities required to operate a motor vehicle and drive safely in an ever-changing traffic environment tap into almost every sphere of human function and render the analysis of the driving task an extremely complex undertaking.” (Benoit, 2011)



New Drivers with Functional Limitations

- Teens with physical impairments have limited exposure to traffic environments (bicycles, rollerblades, skateboards, etc.)
 - Do not develop the ability to judge speed of other vehicles
 - The ability analyze the driving environment while traveling with speed is not developed
 - FAST information processing has not been gradually developed



Teen Driving Facts

- Motor vehicle crashes are #1 cause of death for U.S. teens
- 2,163 teens age 16-19 were killed and 243,243 were treated in emergency departments in 2013 from motor vehicle crashes
- Death rate for male teenage drivers is almost 2 times higher than for females

(Centers for Disease Control and Prevention, 2015)



Pre-Driving Areas of Independence

Basic Activities of Daily Living

- Dressing skills
- Bathing
- Grooming
- Toileting
- Bowel and Bladder Management



Does the teen need cues and/or assistance to complete these tasks?



Home Management Responsibilities

- What Responsibilities does the teen have around the home?
 - Cleans and Maintains own room
 - Takes out the trash
 - Cleans up after self in bathroom/kitchen
 - Takes care of a pet
 - Yard work
 - Laundry



Simple Meal Preparation

- Uses the stove, oven, or microwave to prepare a simple meal including
 - Time management
 - Retrieval of items
 - Following written directions
 - Cleanup
 - Safety awareness and prevention



Simple Meal Preparation

- Activity Ideas:
 - Cooking a grilled cheese sandwich
 - Baking something using a boxed mix
 - Performing all of the planning to make a simple meal
 - Find a simple recipe
 - Make a grocery list
 - Go grocery shopping to buy ingredients
 - Cook
 - Cleanup



Shopping

- Able to independently go into a store and purchase an item
 - Can start with a gas station or smaller store and progress to larger stores
 - Can independently go into a store with a list and purchase multiple items



Medication Management

- Able to name medications
- Knows medication schedule
- Knows what medications are taken for
- Understands personal health status and diagnoses



Community Mobility

- Able to cross a busy street at a crosswalk without supervision
- Able to navigate/explore a residential neighborhood or mall without supervision
- Activity Ideas:
 - Do a mall scavenger hunt to find certain stores/items
 - Have the student give a caregiver navigation directions to/from home to familiar places



Public Transportation

- Able to use public transportation independently to get to a destination
- Able to call and take a taxi to a specific destination independently



Passenger Commentary Driving

- The student tells the parent all observations, interpretations, and intentions that are **related to/important to** the traffic situation.
- <https://vimeo.com/97856029>



Passenger Commentary Driving

<p>Phase 1 Lane Position</p>	<p>Able to Identify the Five Vehicle Positions</p> <ol style="list-style-type: none">1. Center of the lane2. Along the double yellow line3. Along the white line4. Over (straddling the double yellow line)5. Over (straddling the white line) <p>As the driver safely move into these lane positions and have student identify the positions.</p>
<p>Phase 2 Visual Search</p>	<p>Visual Search: Add one stimulus at a time (start with one and then work up to multiple items)</p> <ol style="list-style-type: none">1. Traffic lights and color of light2. Brake lights – directly in front of the vehicle3. Speed limit signs4. Stop signs5. Other important road signs6. Streets on the right or left7. Turn signals – on vehicles directly in front of the vehicle8. Turn lanes if you are making a turn at an intersection
<p>Phase 3 Rearview Mirror Use</p>	<p>Teach student to make quick glances into the rearview mirror and then back at the road.</p> <ol style="list-style-type: none">1. Have student check the rear of the vehicle when brakes are being applied. (example - say brakes and then color of car directly behind you)2. Check the rear when the vehicle directly in front applies their brakes.



Passenger Commentary Driving

Phase 4 Gap Judgment	Gap Judgment – analysis of intersections including non-protected left turns, scan and use mirrors for lane changes <ol style="list-style-type: none">1. Identify when it is safe to make right and left turns using simple language (waiting, waiting, waiting ...Go!)2. Task of 5 consecutive lane changes Teach SMOG – Signal, Mirror, Over the Shoulder (blind spot check), Go
Phase 5 Hazard Detection/Anticipation Task	Verbal identification of potential dangers and real dangers that could influence a driver's behavior (make you need to slow down or speed up, change lanes, etc.)
Phase 6 Full Commentary Driving	The student describes all of the important information in the driving environment that the driver has to be aware of and react to.
Bonus Phase Problem Solving	<ol style="list-style-type: none">1. What to do if the car breaks down? Tell them when you are driving that you are going to pretend that the car is going to break down. Can the student tell you exactly what to do in an appropriate sequence? Where to pull over? Etc.2. Planning where the best/safest place to enter an exit parking lots



Drive Focus iPad App

- Features interactive videos to train the user to identify important information in the driving environment.
- Increases the ability to identify, prioritize and react to real driving situations.
- <http://www.drivefocus.com/>



Nursing Role

Nursing Role to Assist with Driving Process

- Foster increased independence with basic activities of daily living
- Foster increased independence with medication management
 - Having students verbalize what their medications are and why they take them



Nursing Role to Assist with Driving Process

- Begin the driving discussion with students and their caregivers
 - Discuss areas for independence before pursuing driving
 - Educate students with special needs and their caregivers on driver rehabilitation services



Driver Rehabilitation Program at CHOA

- Evaluation Includes
 - Intake interview
 - Physical assessment
 - Visual assessment
 - Cognitive assessment
 - Knowledge of road signs and basic rules of the road
 - In-car assessment
 - Adaptive equipment assessment



Driver Rehabilitation Program at CHOA

- Requirements for participating
 - Be between the ages of 15-21
 - Have a valid driver's license or instructional permit
 - Have a physician's prescription to receive a driving evaluation
 - Meet state vision and seizure-free requirements



Adaptive Equipment



Driving Simulator



Case Study

- 16 year old female with a complex medical history
 - Caudal Regression Syndrome
 - Bilateral below-the-knee amputations
 - Chronic kidney disease – goes to dialysis 3 days a week
 - Neurogenic bladder – has a MACE and she self-caths
- Is independent with self-care skills
- Is independent for familiar meal preparation
- No visual or cognitive deficits
- Able to perform passenger commentary driving verbalizing multiple requested items
- Driver history has performed steering in a vehicle and is independent with propelling wheelchair



Case Study

- Learning to drive with left push-pull hand controls
- Uses a spinner knob in the upper right quadrant of steering wheel
- Uses a turn signal cross over to access turn signal with right hand
- Uses a booster seat and cushion behind back
- Participates in weekly behind the wheel training sessions



QUESTIONS

Contact the Day Rehabilitation Program at
Children's Healthcare of Atlanta with Referrals and
Questions 404-785-3300

<https://www.choa.org/medical-services/rehabilitation/driver-rehabilitation>

