

# Modified Power-Mobility Indoor Driving Assessment (PIDA)

*This version of the PIDA was adapted, with permission, to evaluate the difference a LUCI system can make for a power wheelchair driver in typical indoor scenarios. Reference: Dawson, D., Chan, R., & Kaiserman, E. (1994). Development of the Power-Mobility Indoor Driving Assessment for residents of long-term care facilities: A preliminary report. Canadian Journal of Occupational Therapy, 61(5), 269-276.*

The purpose of the Power-Mobility Indoor Driving Assessment (PIDA) is to assess the indoor mobility of persons who use power wheelchairs (PWCs), originally for individuals residing in an institutional setting, such as a long term care facility. **The test was designed to describe an individual's mobility status at a single point in time, and to evaluate change over time, thus it should register improvement following an intervention.** The full PIDA is comprised of 30 items that a PWC driver completes with a clinician observing. The clinician then scores the PWC driver's performance at that point in time.

As a valid and reliable assessment of indoor power mobility, the LUCI team has taken a subset of the PIDA items, including those individual skills that are relevant to the LUCI system to **demonstrate how a PWC driver's score may improve by simply introducing the addition of the LUCI smart sensor system.** No changes have been made to the test structure or scoring in this modified version. Conducting this test as part of a LUCI evaluation **provides payer groups with objective, measurable differences that the LUCI system can make in a PWC driver's life.**

To review the full PIDA Manual, including additional background information and the full version, visit: <https://cognitionandeverydaylifelabs.com/pida-order-form/>. The LUCI team has provided the instructions and scoring criteria of each individual skill being evaluated as part of this modified PIDA version in the scoring rubric below.

# How to Use This Document

## Administering the PIDA:

- » Estimated administration time for this 16-item modified PIDA is ~20 - 30 minutes. Actual completion time may vary depending on client characteristics, testing environment, and the clinician's familiarity with the assessment. For efficiency, the clinician is encouraged to map a route for item completion prior to administering.
- » Use the instructions in the scoring rubric on p. 3 and 4 to guide the client through each functional mobility item.
- » Observe client performance of each item and use the scoring criteria to score the client on a scale of 1 to 4 for each item, once without LUCI, and once with LUCI.

## Scoring the PIDA:

- » Each item on the PIDA is scored as follows:
  - 4 Completely independent: optimal performance, able to perform task in one attempt smoothly and safely.
  - 3 Completes task hesitantly, requires several tries, requires speed restrictions, and/or bumps walls, objects, etc. lightly (without causing harm).
  - 2 Bumps objects or people in a way that causes or could cause harm to the client, other persons, or to objects.
  - 1 Unable to complete task - reason: \_\_\_\_\_. For example, may require verbal and/or visual cues or physical assistance.
- » Once all desired items are completed, refer to the scoring calculation below to obtain a final score, represented as a percentage between 0 - 100%. Complete the calculation for the client performance without LUCI, and then with LUCI to find the difference as a result of the LUCI intervention.

$$\begin{array}{l} \text{TOTAL} \\ \text{SCORE} \\ (\%) \end{array} = \frac{\text{SUM OF THE INDIVIDUAL ITEM SCORES}}{4 \times (\text{NUMBER OF ITEMS SCORED})} \times 100$$

- » The total score does not represent a percentage of normal. Rather, it provides a number which may facilitate comparing performance over time and/or after an intervention, such as the LUCI system.

## Using PIDA results for justification of the LUCI system, sample justification:

- » The Power-Mobility Indoor Driving Assessment (PIDA) is a valid and reliable assessment for measuring an individual's power mobility status at a single point in time. It may therefore be used to measure change in performance over time, or after an intervention. A modified version of the PIDA was completed to measure **[Client Name]**'s power mobility status without and then with the LUCI system. With a scoring scale of 0 to 100%, without LUCI, **[Client Name]** received a score of **[Score Percentage]**, and with the LUCI **[he/she]** received a score of **[Score Percentage]**, demonstrating an improvement in power mobility status of **[ %]** with the LUCI system. These results indicate a **[Significant, or other appropriate descriptor]** improvement in **[Client Name]**'s indoor power mobility skills, and therefore MRADL participation and performance.

# Scoring Rubric

Item #	Item Description	Instructions to Client	Scoring Criteria	Comments	PWC Only	PWC w/ LUCI
Bedroom						
1	Accessing Bed from Client's Right Side	"Please park on the right side of the bed so that you can move from the chair to the bed directly."	Ability to maneuver wheelchair to access bed for transfer. Depending on type of transfer used, client may need to touch bed.			
2	Accessing Bed from Client's Left Side	"Please park on the left side of the bed so that you can move from the chair to the bed directly."	Ability to maneuver wheelchair to access bed for transfer. Depending on type of transfer used, client may need to touch bed.			
3	Approaching the Dresser	"Please approach your dresser as if to open your top drawer or reach something from its surface."	Ability to position oneself effectively to access the dresser drawers or reach something from the surface.			
Bathroom						
5	Through Bathroom Doorway	Does the client normally open the bathroom door themselves? If yes, "Please open the door and drive into the bathroom." If no, "Please drive into the bathroom."	Ability to open door, and drive into the bathroom navigating around the door if this is part of the normal routine.			
6	Approaching the Sink	"Please approach the sink as if to use it."	Ability to access the sink.			
7	Approaching the Toilet	"Please position the chair as if you were going to use or move to the toilet."	Ability to maneuver the vehicle in the bathroom for bowel and bladder management.			
8	Exiting the Bathroom	Does the client normally close the bathroom door themselves? If yes, "Please leave the bathroom and close the door." If no, "Please leave the bathroom."	Ability to exit the bathroom and close the door if this is part of the normal routine.			
Elevator						
13	Entering Door	"Please enter the elevator."	Ability to enter elevator. Therapist may hold the door if asked.			
14	Spacing in Elevator	No instructions to the client. If there are no people in the elevator, therapist enters first. Observe client in the elevator.	Ability to space self safely in the elevator.			
15	Exiting the Elevator	"Please exit the elevator."	Ability to exit the elevator. If exiting in reverse, client is expected to look around to ensure nothing is in the way. Therapist may hold the door if asked.			
	<b>Page 3 Totals</b>		<i>Transfer to pg. 4 to calculate overall score</i>			

# Scoring Rubric, Cont.

Item #	Item Description	Instructions to Client	Scoring Criteria	Comments	PWC Only	PWC w/ LUCI
Ramps						
20	Up the Ramp	"Please drive up the ramp."	Ability to drive up a ramp changing speed if necessary.			
21	Down the Ramp	"Please drive down the ramp."	Ability to drive down a ramp changing speed if necessary.			
Skilled Driving						
25	Driving Straight Backward	"Drive backwards between the chairs and wall."	Ability to drive 2 meters (6 feet) straight backwards in a controlled environment, that is through a 1 meter wide corridor created by chairs and a wall.			
26	Manipulating in Congested Area	"Please drive through the _____."	Therapist indicates the congested area through which the client is to navigate, e.g., facility cafeteria or lounge at a busy time. The test drive should be a minimum of 20 meters (65 feet). Therapist observes client's ability to drive through a congested area which includes people moving about and stationary obstacles.			
27	Maneuverability	"Drive in and out between the chairs." (refer to Figure 1 in full PIDA Manual, circles on Figure represent chairs)	Ability to drive through a designated obstacle course without bumping any of the chairs.			
28	Unexpected Obstacles	No instructions given to the client. <i>Forewarning the client will negate the value of this test. Persons driving mobility devices need to be able to respond to unexpected situations. Without warning, the therapist quickly throws an empty cardboard box less than 1 meter (3 feet) in front of the client. This is done twice at any point during the assessment, while the client is driving forward.</i>	Ability to stop the mobility device quickly without hitting the box.			
	<b>Page 4 Totals</b>					
	<b>Page 3 Totals</b>					
	<b>Total</b>		Add page 3 and page 4 totals and utilize overall total to calculate final score (%) as per pg. 2			