5.3. Example *Dashboard* page for patient EX2:

Dashboard for EX2

Select Metric Presets — **A**

[SESSION TIME] [JOYSTICK BOUTS] [DISTANCE] [JOYSTICK DISPLACEMENT] [BOUT DURATION]

B — (graph, Minutes axis: 30, 16, 8, 0)

S1 (sit) S2 (stand) S5 (stand) S8 (stand) S10 (stand) S11 (stand)

— Session Time — Moving Time

D — Total Sessions: **6**

Predicted ALP Stage: **Stage 3**   Confidence Score: **84.0%** — **F**

Stage Probabilities:
WHAT DO THESE MEAN?

Stage 1 2.0%
Stage 2 14.0%
Stage 3 84.0%

Disclaimer: This model is not entirely accurate and can make mistakes.

C — Session Time Legend

Session Time: Total time in the Explorer Mini.

Moving Time: Total driving time in the Explorer Mini.

GO BACK

E — ALP Stage chart:
1 Novice | 2 Curious Novice | 3 Beginner | 4 Advanced Beginner | 5 Sophisticated Beginner | 6 Competent | 7 Proficient | 8 Expert

Stage 1   Stage 2   Stage 3
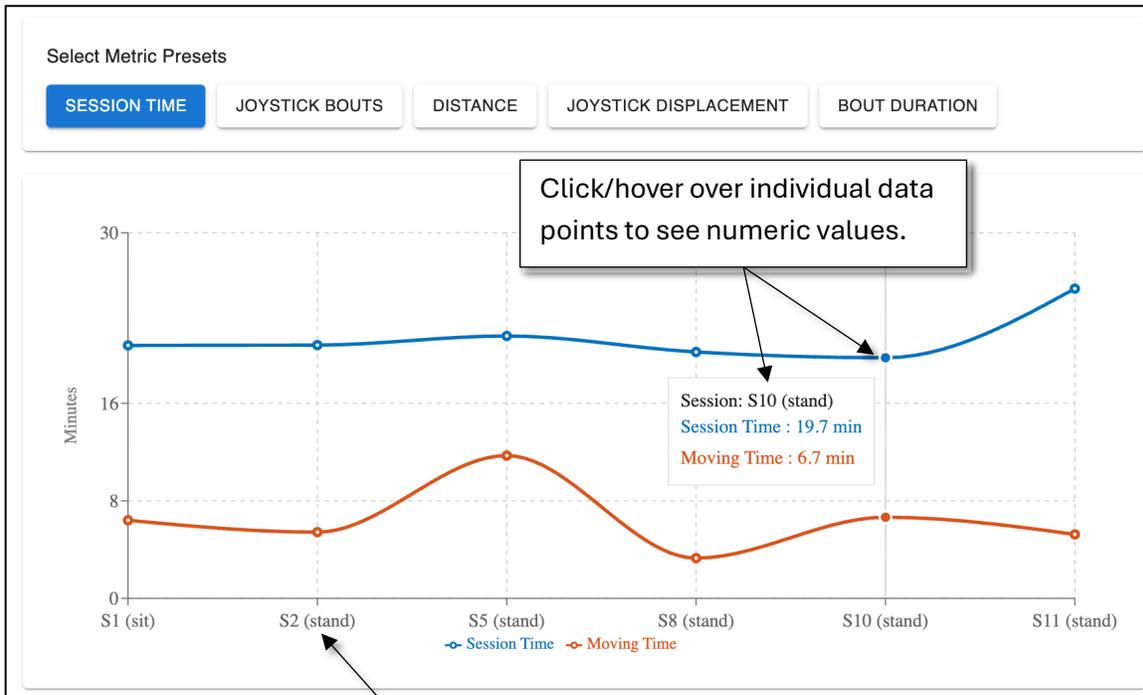
ALP Stage Overview

LEGEND

A – Buttons that populate the graph with preset quantitative metrics

B – Interactive graph of metrics over time

C – Legend for whichever quantitative metrics are displayed

D – Total number of sessions recorded for this patient

E – Visual representation of the Assessment for Learning Powered Mobility (ALP) tool (see Appendix I for more detail)

F – Prediction of patient's ALP stage based on quantitative data

5.4. Click on each of the buttons at the top of the screen to display different groups of quantitative metrics. When you click on a button, a legend will appear that describes each of the metrics in more detail. The following steps will describe each metric.

5.5.　　Button #1: Session Time

Select Metric Presets

[SESSION TIME] [JOYSTICK BOUTS] [DISTANCE] [JOYSTICK DISPLACEMENT] [BOUT DURATION]

Click/hover over individual data points to see numeric values.

Session: S10 (stand)
Session Time : 19.7 min
Moving Time : 6.7 min

Minutes axis: 30, 16, 8, 0

X-axis: S1 (sit), S2 (stand), S5 (stand), S8 (stand), S10 (stand), S11 (stand)

Session Time   Moving Time

X-axis shows session numbers (S1, S2, etc.). Posture for that session (sit or stand) is shown in the parentheses.

- **Session Time:** Total time in the Explorer Mini (minutes). This is the total duration of time from when the Record button on the Explorer Mini is toggled ON to when it is toggled OFF.

- **Moving Time:** Total driving time in the Explorer Mini (minutes). This is the amount of time the device is in motion.
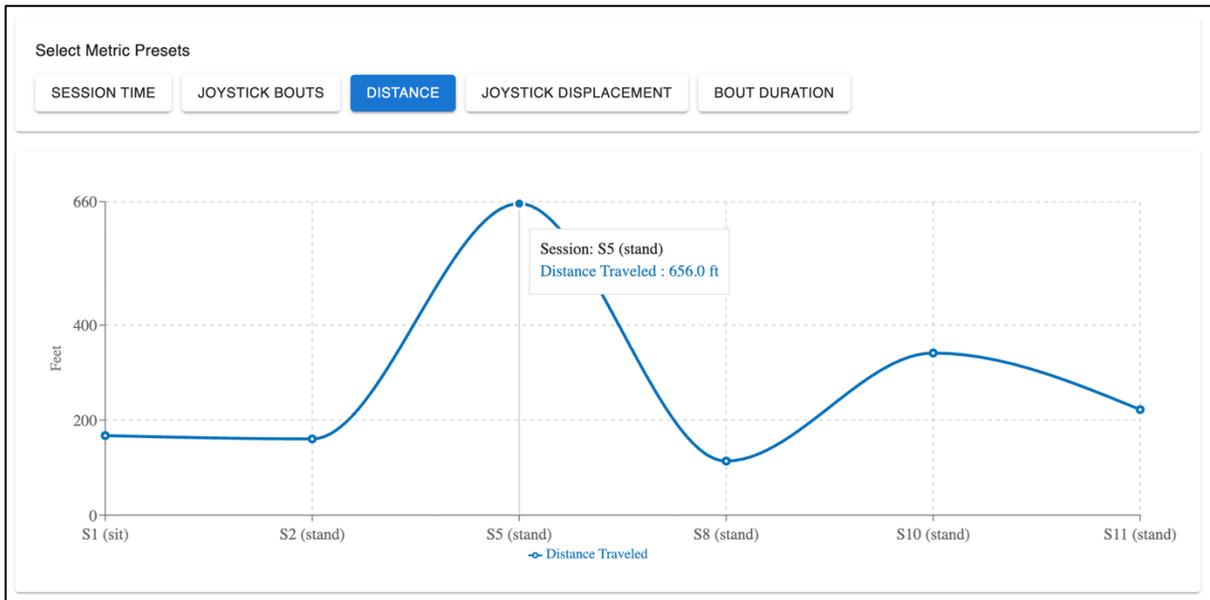
5.6.　　Button #2: Joystick Bouts

What is a joystick bout? A joystick bout is the period of time during which the joystick is moved away from a neutral position and then returned to a neutral position.
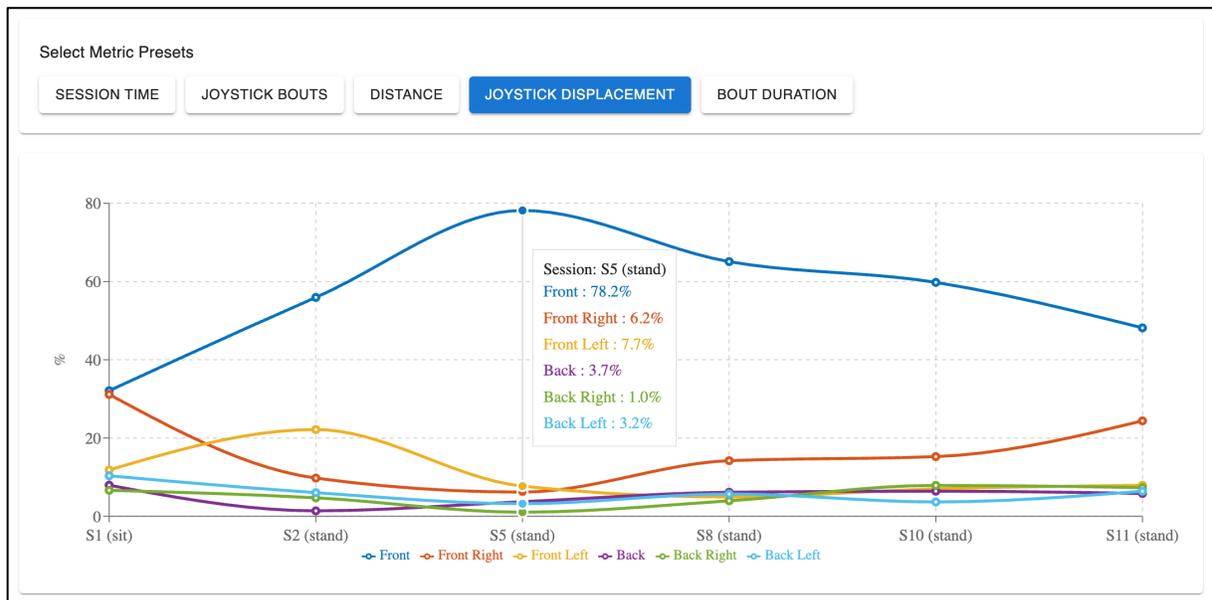
- **Joystick Bouts:** The total number of joystick activations and attempts. This is the total number of times the child interacted with the joystick.

- **Joystick Activations:** The number of joystick bouts that resulted in device movement.

- **Joystick Attempts:** The number of joystick bouts that did not result in device movement.

5.7.   Button #3: Distance

- **Distance:** Total distance traveled by the Explorer Mini during the session (feet). Forward, backward, and turning movements all count towards distance traveled.

5.8. Button #4: Joystick Displacement

Select Metric Presets

[SESSION TIME] [JOYSTICK BOUTS] [DISTANCE] [**JOYSTICK DISPLACEMENT**] [BOUT DURATION]

Session: S5 (stand)
Front : 78.2%
Front Right : 6.2%
Front Left : 7.7%
Back : 3.7%
Back Right : 1.0%
Back Left : 3.2%

X-axis: S1 (sit), S2 (stand), S5 (stand), S8 (stand), S10 (stand), S11 (stand)

-o- Front -o- Front Right -o- Front Left -o- Back -o- Back Right -o- Back Left

- The joystick has been broken up into 6 pie slices corresponding to different directions (front, front left, front right, back, back left, and back right).

- Each line on the graph corresponds to the percent of time the joystick was used in each of these directions (%).

Forward movement
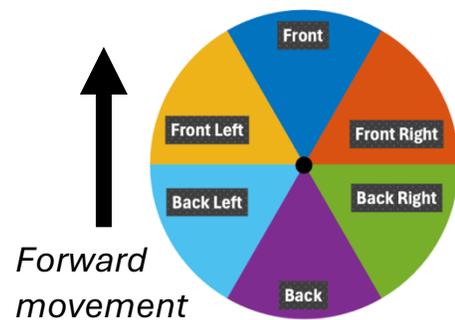
5.9.   Button #5: Bout Duration

What is a joystick bout? A joystick bout is the period of time during which the joystick is moved away from a neutral position and then returned to a neutral position.

- **Mean Bout Duration:** Average length of all joystick bouts in the recorded session (seconds).

- **Maximum Bout Duration:** Longest joystick bout in the recorded session (seconds).

5.10. ALP Stage Prediction

Predicted ALP Stage: **Stage 3**   Confidence Score: **84.0%**

Stage Probabilities:

WHAT DO THESE MEAN?

Stage 1	**2.0%**
Stage 2	**14.0%**
Stage 3	**84.0%**

Disclaimer: This model is not entirely accurate and can make mistakes.
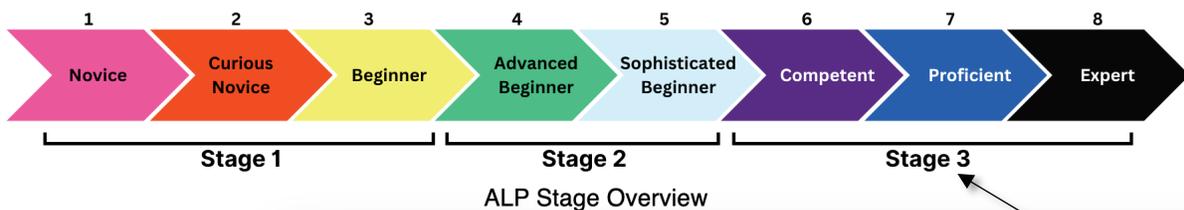
Click WHAT DO THESE MEAN? to expand.

Predicted ALP Stage: **Stage 3**   Confidence Score: **84.0%**

Stage Probabilities: HIDE INFO

- **Stage 1**: Exploring Function, focus on body and device (Phases 1–3)
- **Stage 2**: Exploring Sequence, focus on body, device, and environment (Phases 4–5)
- **Stage 3**: Exploring Performance, focus on body, device, environment, and activity (Phases 6–8)

Stage 1	**2.0%**
Stage 2	**14.0%**
Stage 3	**84.0%**

Disclaimer: This model is not entirely accurate and can make mistakes.

1	2	3	4	5	6	7	8
Novice	Curious Novice	Beginner	Advanced Beginner	Sophisticated Beginner	Competent	Proficient	Expert

Stage 1   Stage 2   Stage 3

ALP Stage Overview

ALP Stages (1-3) are depicted graphically with nested Phases (1-8) for context.

- The Assessment of Learning Powered Mobility (ALP) tool (described in detail in Appendix I) can help guide appropriate facilitating strategies for children based on their learning stage.

- The app generates a personalized prediction of a child's current ALP learning stage using all the quantitative data recorded for that child to date.

- The confidence score can help you understand when a child is between learning phases.

5.11. Click **GO BACK** on the *Dashboard* page to return to *Home* page.
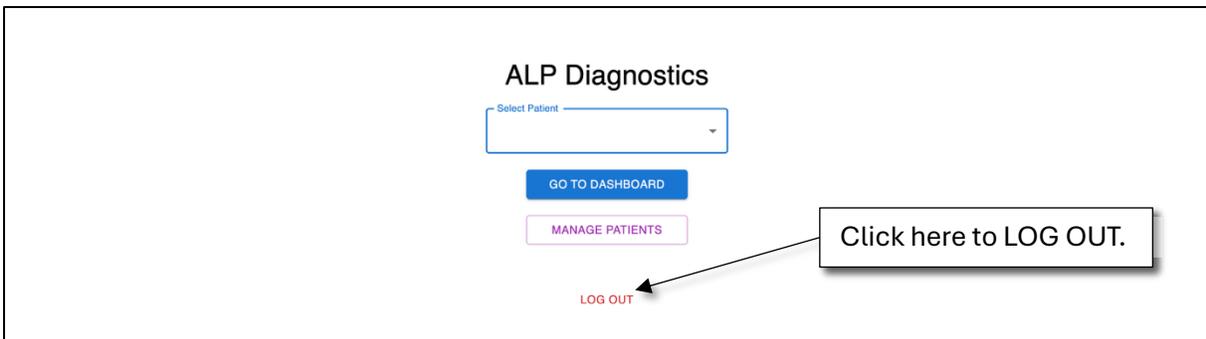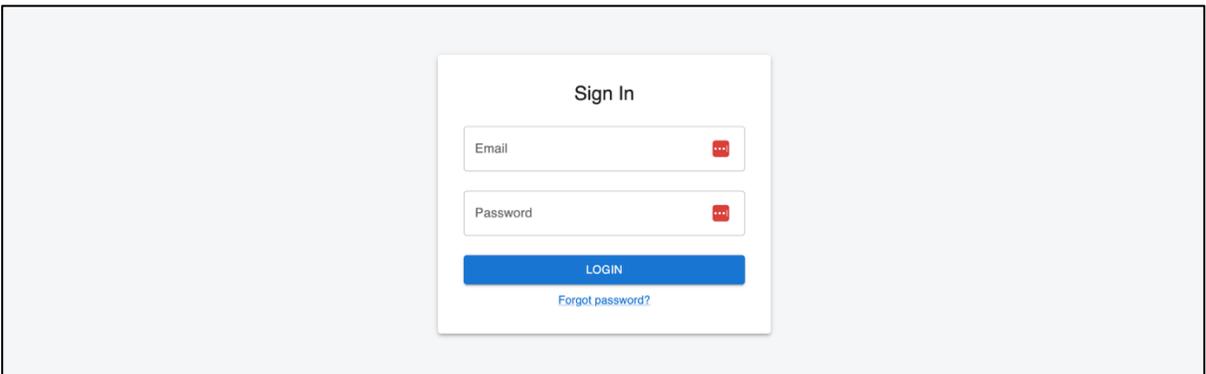

Click here to return to *Home* page.

SECTION 6: Logging out of the app

6.1.   If you wish to log out of the app (optional), click **LOG OUT** from the
       Home screen.

6.2.   You will be returned to the *Login* page.

ALP Overview

The following information is taken from "A Guideline for Introducing Powered Mobility to Infants and Toddlers" by Feldner, Plummer, and Hendry (2022). It is provided to give you more context for each of the Assessment of Learning Powered Mobility (ALP) Phases (1-9) and Stages (1-3).

Stage 1 (Phases 1-3): Exploring Function

Stages

Exploring Function, focus on body and device

Phases of Attention, Activity, Understanding of Tool Use, Expressions/Emotions, and Interaction/Communication

Novice	Curious Novice	Beginner
• May be distractable, anxious, or have no response to interaction or guided mobility	• May be alert or more passive at times, focused, single point of attention	• Alert, focused on a single point of attention but able to shift attention
• May explore the joystick or device, may have accidental activation but no intentional movement, may want to get out of device	• May touch or bang various parts of the device in between quiet sitting, may touch or hit switch or joystick to experiment	• Targeted joystick movement to attain movement, applying adequate force and able to press switch or joystick
• Limited understanding of cause and effect relationship of the joystick to movement	• Basic connection established between touching the joystick and causing movement	• Basic understanding that joystick movement causes device movement, may drive in circles or try to use body to move device
• May be happy, neutral, or may be upset/crying. May be aware of attention from others or have no response	• May be curious, anxious, upset or content. Will respond to interaction and may mirror behavior or jointly focus on activity	• May be serious or concentrating, contented or smiling, interacts using eye contact and facial expressions

Stage 2 (Phases 4-5): Exploring Sequence

Exploring Sequence, focus on body, device, and environment

Phases of Attention, Activity, Understanding of Tool Use,
Expressions/Emotions, and Interaction/Communication

Advanced Beginner

- Attentive but can shift attentionspontaneously
- Intentional exploration of joystick and its functions for movement, movements may be cautious or careful
- Aware of movement in different directions, exploring cause and effect of joystick activation or multiple switches in different ways
- Shows desire to explore environment, may smile and laugh or be serious, engages peer or adult in exploration

Sophisticated Beginner

- Attention focused on two different points, focused and active
- Exploring and experiementing with device and directional movements, may be more eager or a ressive with joystick
- Understands different effects of joystick moving in different directions, understands add-on guidance systems if applied
- May show frustration or eagerness and smiling given developing abilities. May show reciprocal interaction with people and environment

30

Stage 3 (Phases 6-9): Exploring Performance

Stages

Exploring Performance, focus on body, device, environment, and activity

Phases of Attention, Activity, Understanding of Tool Use, Expressions/Emotions, and Interaction/Communication

Competent	Proficient	Expert
• Focused on goal-directed driving, may have attention focused on multiple points but easily distracted	• May divide attention between multiple points and improved focus	• Can maintain attention to multiple points and shows relaxed and active engagement
• Driving/steering skills emerging, thus concentrating on point to point mobility and may ignore people or environment	• Refining control and timing of joystick control, drives for pleasure and learning to navigate within environments	• Demonstrates fluid and automatic movements, driving is no longer the task but rather the means to participate in other tasks or activities
• Conscious understanding of steps needed to reach goal, controlled but not refined joystick use, may try to use body to move device	• Conscious understanding of joystick control, refining navigation skills toward fluency and can manage themselves within device	• Driving is mostly subconscious and precise, uncertain spaces are navigated independently and intuitively, can attend to others while driving
• May be serious, content, or smiling and laughing, will interact with device or others but not both at the same time	• Signs of happiness and satisfaction prevalent, and displays capability of interacting with people and environment simultaneously in social play	• Expression contingent on the outside activities being conducted, not on driving itself, able to interact on multiple levels without interruption

Official ALP Instrument

Nilsson & Durkin's official ALP instrument by and corresponding facilitating strategies may be found at:

https://www.lisbethnilsson.se/wp-content/uploads/2015/08/ALP_tool.pdf