

Persons with Moderate Dementia Improving Gameplay

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BACKGROUND

Computer games:

- Are gaining popularity for health assessment.
- Cause less stress than paper tests.¹
- Provide daily/weekly monitoring versus bi-annual/annual clinical assessments.²

OBJECTIVES

- Enhance game to monitor people with moderate dementia.
- Collect data and monitor how game play changes over time.
- Correlation between pre-cognitive testing and game play.

METHODS

WHO

- 10-12 participants from WOCRC dementia day program in Kanata.
- Exclusions: vision/hearing problems, attention deficits, arthritis.

WHAT

- Whack-a-mole game to assess processing speed and inhibition.
- Pre-Game testing: MMSE, Trails A and Ramparts.
- 12-month period; weekly for 15 minutes.

WHEN

- June 2016-Present.

HOW

- University of Alberta designed; Ottawa adapted.
- Carleton developed algorithms to analyze data.
- Game play results compared to cognitive scores.

RESULTS

Preliminary results are based on the first 7 (2 female) participants' data over the first 10 game sessions.

First 10 sessions

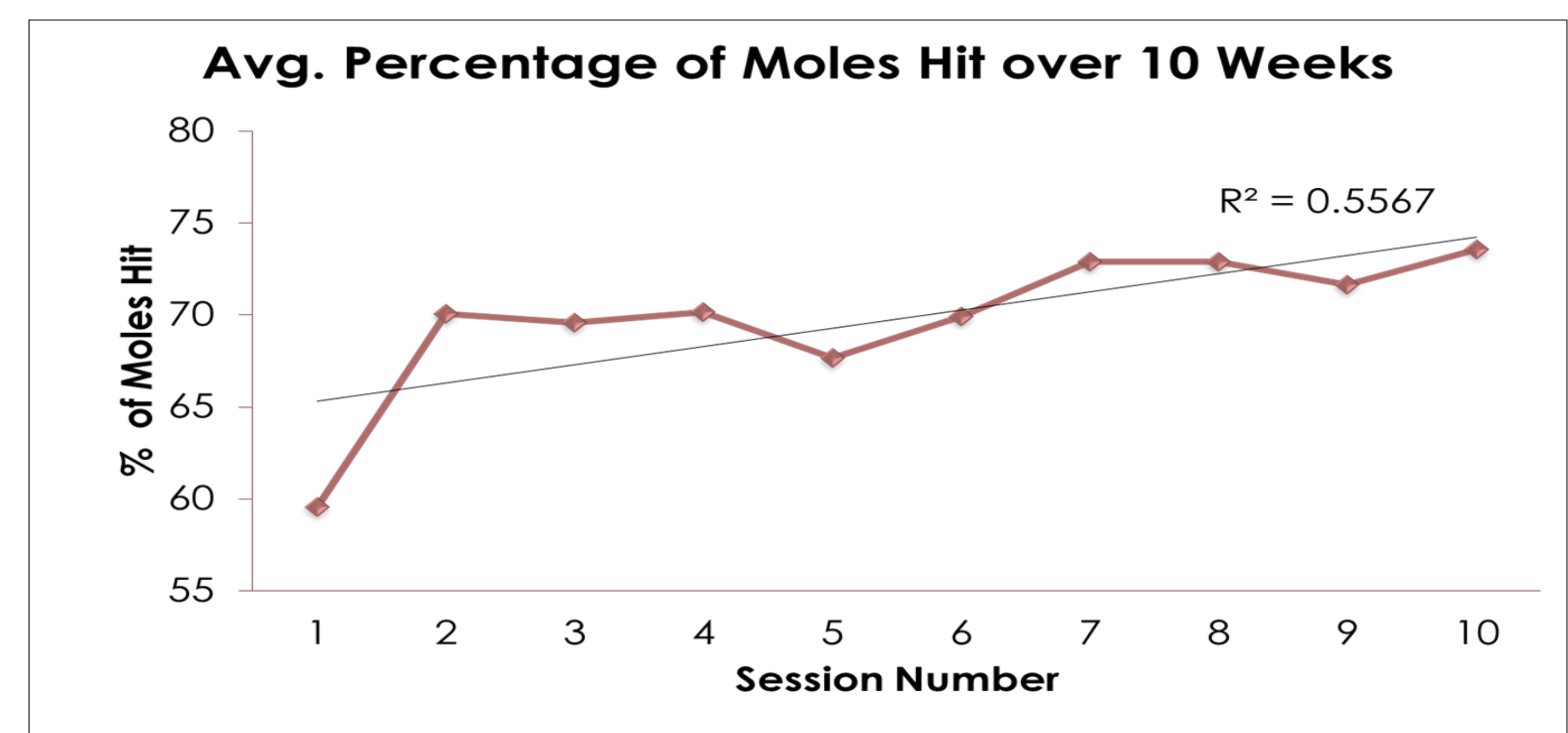
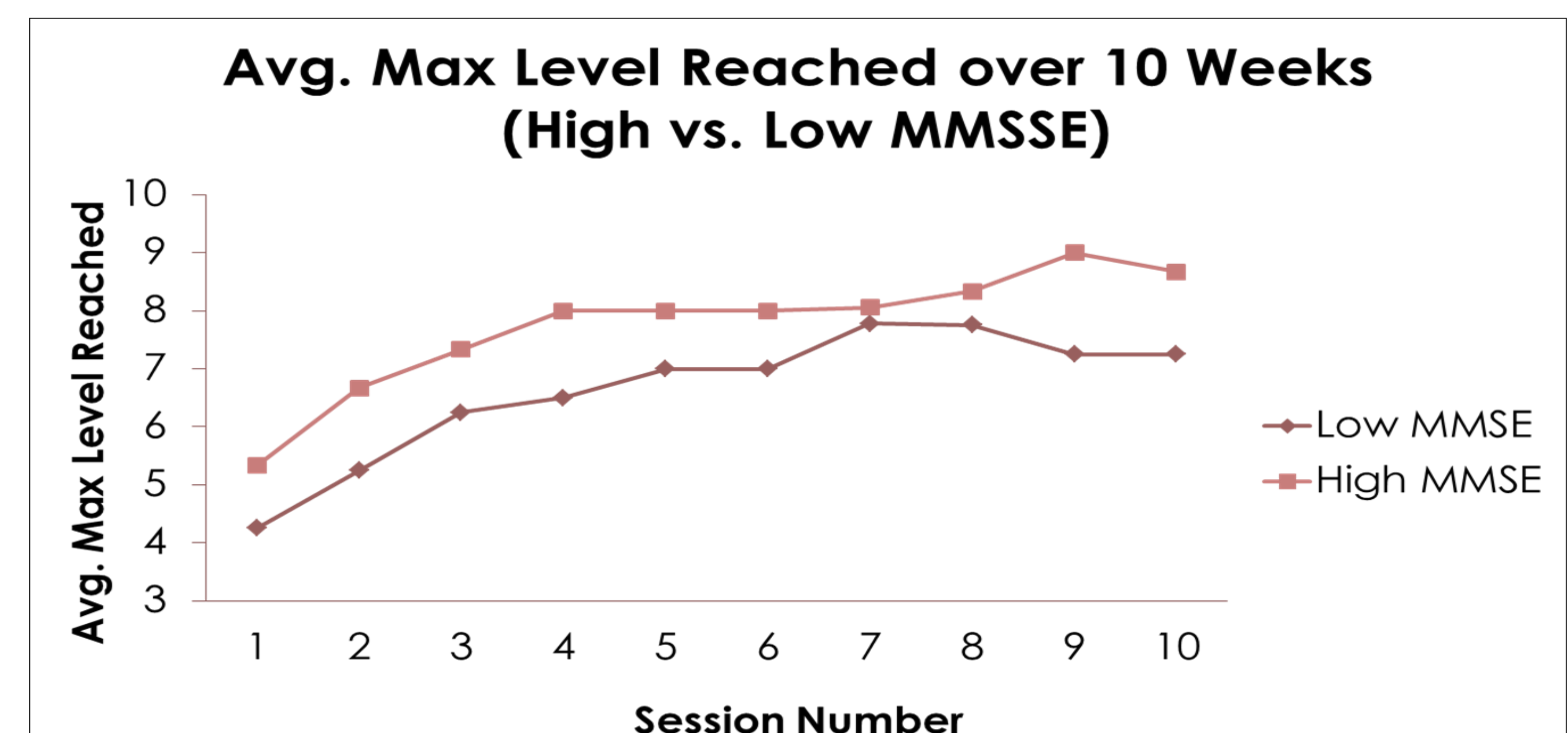
- Avg. 11.2 (10-13 weeks).



Figure 1. Ex. of mole and bunny during game play.

	Mean (Low-High)
Age	74.00 (69-80)
Education	11.57 (7-15)
Years since DX.	4.17 (0-10)
MMSE Score	20.00 (12-24)

First 10 Weeks	Low MMSE Score (12-19)		High MMSE Score (22-24)	
	Mean (St. Dev.)		Mean (St. Dev.)	
# of People	4		3	
	1 st Session	10 th Session	1 st Session	10 th Session
Avg. Max Level	4.2	7.3	5.3	8.7
Avg. Reaction Time	0.74	0.61	0.66	0.57
Avg. # Moles Hit	55.4	71.0	65.1	77.0



DISCUSSION

- Game play may be an alternative to formal cognitive testing.
 - PWD improved over 10 weeks : learning?
- Next step:
- Analyze year of data.
 - Determine if game scores are proportional to cognitive test scores.

REFERENCES

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