

COGNITIVE EPISODIC GAME

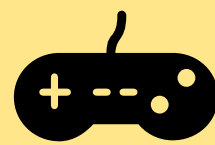
Early prediction of MCI and AD.
Design process and preliminary psychometric study.

PeerJ, 2017

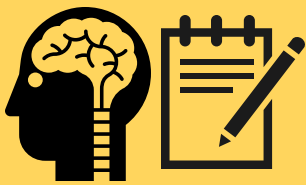
1. INTRODUCTION

- Episodic memory
- Early cognitive markers
- Classical tests limitations

Can we design a Digital Game to early diagnose MCI and AD?



MATERIALS & METHOD



2

- Gamification of CVLT
- More ecological tasks (i.e., virtual walk small city)
- User-centered design
- 2 Focus groups
- 1st Pilot study



3. RESULTS

- New word lists: A, B and C (i.e., furniture, shops, vehicles...)
- cognitive prediction using: Linear Regression, Random Forest & Support Vector Machine
- Precision=1 (LR, RF) and 0.90 (SVM)



Episodix game

DISCUSSION 4

- + New scenarios closer to real life
- + More engaging than CVLT
- + High acceptability by end users
- + Initial promising results detecting cognitive problems



- To improve accessibility
- To test with a larger sample



CONCLUSIONS

- Seniors accept using games for early detection
- Cognitive problems correctly detected: promising results
- More research is needed to provide clinical evidence

