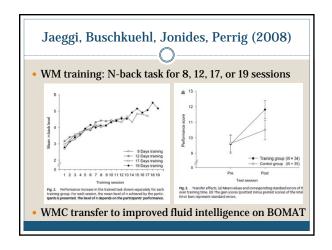
Examination of the effects of working memory training on working memory capacity and transfer to fluid intelligence

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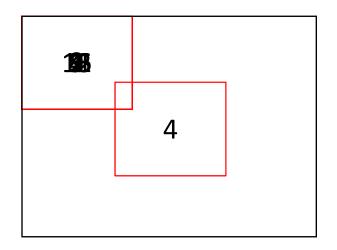
• Working Memory Training • Working Memory • WM training: improve working memory capacity (WMC) • Klingberg: application to ADHD • Neurological changes

• Correlation between performance on WM tasks and fluid intelligence tests Fluid intelligence task: Raven's progressive matrices **The state of the state of th



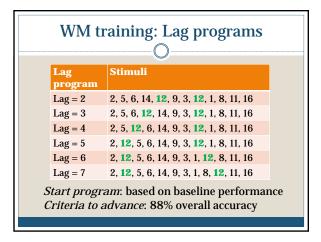
Research Questions Can working memory capacity (WMC) be improved with training? How long will training effects last? If WMC is improved, will it transfer to improvement on tests of fluid intelligence?

Methodology Training (N=15) Day 1: Pretest Day 2-11: 10 days training Day 12: Post-test1 Day 26: Post-test2 Pre-test: Baseline WM task; Digit Span; Raven's progressive matrices Training: WM training task Post-test1: Baseline WM task; Digit Span; Raven's progressive matrices Post-test2: Baseline WM task; Digit Span; Raven's progressive matrices Post-test2: Baseline WM task; Digit Span; Raven's progressive matrices Post-test2: Baseline WM task; Digit Span; Raven's progressive matrices



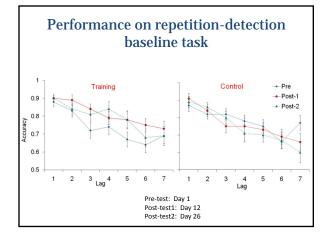
Repetition-Detection Baseline Task

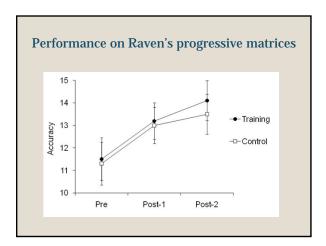
- · Task: "Find the repeat" in series of 12 stimuli
- o Press spacebar to see each stimulus
- o "Click" answer at end of trial
- Difficulty varied across trials:
- o Lag = distance between repeated stimuli
- o Random order of Lags 1 7
- 140 trials with feedback on performance
- o Participants given 5 breaks
- Measured accuracy and processing time
- o Only accuracy examined in analyses



Research Questions

- Can working memory capacity (WMC) be improved with training?
 - \circ Examine changes in baseline task performance from pre-test to post-test1
- How long will training effects last?
- \circ Examine changes in baseline task performance from posttest1 to post-test2
- If WMC is improved, will it transfer to improvement on tests of fluid intelligence?
- \circ Examine changes in Raven's test performance from pre-test to post-test1 to post-test2

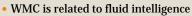




Summary of Results

- Training group's WMC (baseline task performance) improved from pre-test to 1st posttest
- \bullet Training group's improvement maintained from 1^{st} to 2^{nd} post-test (2 weeks)
- Control group's performance was unchanged from across all sessions
- Improvement of WMC did not transfer to improvement on Raven's Progressive Matrices

Importance of Research & Future Directions



- However, no transfer effect was found why?
- Effect may be task-specific
- Use of simplistic versus complex WM task for training
- Future studies
 - Use different WM tasks
- Use different fluid intelligence task
- Examine other populations: older adults

Implications of WM Training

- Potential to improve quality of life for individuals with Alzheimer's disease
- WM Training: use in nursing homes



We would like to thank our Advisor, Dr. Bopp and our participants!

