

# The science

## behind Constant Therapy

### FEATURED RESEARCH

## Computer-mediated cognitive-communication intervention for residents with dementia in a special care unit

Postman, W. (2016, October)

### HIGHLIGHTS

#### METHODS

- Constant Therapy tasks were incorporated into a 6 week course of skilled SLP treatment with a resident with moderate dementia residing in a special care unit (SCU).
- The resident demonstrated improvements in task performance and required less clinician cues over the course of treatment (Table 1).
- There was functional improvement in the resident's independence during ADLs, safety, adaptation to surroundings and reduction of negative behaviors. The resident was successfully transferred from the SCU to a long-term care wing that provided more freedom.
- Findings suggest that using the customized Constant Therapy program as a part of speech language therapy "achieved a higher degree of functional recovery and superior quality of life than would have been possible with more traditional therapeutic approaches."

**TABLE 1**

**Results from Constant Therapy tasks administered to the resident (all at level 1)**

Tx Session #, Week #	Constant Therapy Task	Accuracy	Latency	Cue Level*
Tx 1, Wk 1	Symbol Matching	87.5	17.56	MAX
Tx 2, Wk 1	Symbol Matching	90	30.51	MIN
Tx 2, Wk 1	Playing Card Slapjack	76.6	26.69	MAX
Tx 3, Wk 2	Playing Card Slapjack	62.2	25.78	MIN
Tx 3, Wk 2	Flanker	83.3	10.58	MAX
Tx 4, Wk 2	Flanker	100	10.46	MOD
Tx 5, Wk 3	Flanker	80	8.7	MIN
Tx 5, Wk 3	Picture Matching	91.1	33.32	MOD
Tx 6, Wk 4	Picture Matching	97.2	19.11	MIN
Tx 5, Wk 3	Word Matching	95.5	23.51	MOD
Tx 6, Wk 4	Word Matching	94.4	14.29	MIN
Tx 7, Wk 4	Pattern Recreation	88.1	18.96	MOD
Tx 8, Wk 5	Pattern Recreation	73.3	25.78	MOD

\*MIN= Minimum cueing of one type (visual) required on <25% of occasions. MOD= Moderate cueing of one or two types (visual and verbal) required on 26-50% of occasions. MAX= Maximum cueing of two or three types (visual, verbal and tactile) required on 51-75% of occasions. Total assistance, that is, multi-modal cues on >75% of occasions, was never required for this resident.

## Research published using Constant Therapy

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Des Roches, C., Mitko, A., Kiran, S. **Relationship between self-administered cues and rehabilitation outcomes in individuals with aphasia: understanding individual responsiveness to a technology-based rehabilitation program.** *Frontiers in Human Neuroscience*. 11(17). doi:10.3389/fnhum.2017.00007.

Mallet, K., Shamloul, R., Corbett, D., et al. **Recover Now: Feasibility of a mobile tablet-based rehabilitation intervention to treat post-stroke communication deficits in the acute care setting.** *PLOS ONE*. doi:10.1371/journal.pone.0167950.

Glynn, P., Eom, S., Zelko, F., Koh, S. **Feasibility of a mobile cognitive intervention in childhood absence epilepsy.** *Frontiers in Human Neuroscience*. 10(575). doi:10.3389/fnhum.2016.00575.

Postman, W. **Computer-mediated cognitive-communicative intervention for residents with dementia in a special care unit: an exploratory investigation.** *Perspectives of the ASHA Special Interest Groups*, 1 (SIG 15) 68-78. doi:10.1044/persp1.SIG15.68.

Mark, J., Onaral, B., Ayaz, H. **Evaluating neural correlates of constant therapy neurorehabilitation task battery: an fNIRS pilot study.** *Foundations of Augmented Cognition: Neuroergonomics and Operational Neuroscience*, 9743, 231-241.

Kiran, S. **How does severity of aphasia influence individual responsiveness to rehabilitation? Using big data to understand theories of aphasia rehabilitation.** *Seminars in Speech & Language* (pp. 48-59) doi:10.1055/s-0036-1571358.

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Kiran, S. **Detecting small and large scale fluctuations in language and cognitive performance: a longitudinal rehabilitation case study.** *International Journal of Physical Medicine and Rehabilitation*, 1-12. doi:10.4172/2329-9096.1000203.