



AOTA Evidence Briefs

Brain Injury

**A product of the American Occupational Therapy Association's Evidence-Based Literature Review Project*

BI #11

Perceptual training may be no more effective than conventional therapy in improving perceptual functioning or ADL

Lincoln, N. B., Whiting, S. E., Cockburn, J., & Bhavnani, G. (1985). An evaluation of perceptual pretraining. *International Rehabilitation Medicine*, 7, 99–101.

Level: IIB1a

Nonrandomized controlled trial, fewer than 20 participants per condition, high internal validity, high external validity

Why research this topic?

Many occupational therapy departments in Great Britain have stroke clients practice perceptual tasks (e.g., visual scanning) to improve their perceptual skills and their independence in activities of daily living (ADL). However, research has not established the effectiveness of these techniques.

What did the researchers do?

The researchers, of Rivermead Rehabilitation Centre (Oxford, England), recruited 33 persons who had been admitted to this facility between June 1981 and November 1982. The participants ranged in age from 17 to 69 years, averaging 50.1. Seventeen were men and 16 were women. Six had head injuries, and 27 had had a stroke. All showed perceptual deficits on the Rivermead Perceptual Assessment Battery (RPAB).

Following an assessment of their ADL skills, the participants were randomly assigned to one of two groups: perceptual training or conventional therapy. They then received 1-hour interventions 4 times a week for 4 weeks.

The perceptual training group practiced activities of the kind typically used by staff in occupational therapy departments, grouped by level of difficulty. For example, a simple activity was to sort sticks according to length, a moderately difficult activity was to sequence cylinders according to size, and a difficult activity was to play perceptual association Lotto (not explained). Therapists selected the tasks for each participant according to content and level of difficulty, using the participant's initial score on the RPAB as a reference. Each participant attempted three tasks during a 1-hour session, spending about 20 minutes per task.

The conventional therapy group engaged in activities not specifically designed to improve perceptual functioning—physical activities, craft work, games, and gardening. These activities also were grouped by level of difficulty and selected for participants according to their initial scores on the RPAB.

The outcome areas of interest were *perceptual abilities* (as measured by the RPAB) and ADL (as measured by the Rivermead Activities of Daily Living Scale).

What did the researchers find?

There were no **significant** (*see Glossary*) differences between the groups before or after treatment on either measure.

What do the findings mean?

- For *therapists and other providers*, the findings are inconclusive about the effectiveness of perceptual training. However, they do suggest that perceptual training does not lead to specific gains during an intensive rehabilitation program and that therapists can obtain equivalent improvements by other means. The popularity of perceptual training may be due more to clinical impressions of improvement than scientific evidence of the same.
- The findings suggest a direction for research: more rigorous investigation of the effects of perceptual training, using single-case experimental designs or comparative trials.

What are the study's limitations?

The researchers' method of selecting study participants was systematic; that is, they selected the participants randomly. This feature raises confidence that the results of the study can be attributed to the intervention.

The study provides useful information. However, it has limited generalizability for the population of persons with traumatic brain injury across settings because the participants did not represent all types of facilities and all types of head injuries.

Glossary

significance (or significant)—A statistical term, this refers to the probability that the results obtained in the study are not due to chance, but to some other factor (such as the treatment of interest). A significant result is one that is likely to be generalizable to populations outside the study.

Significance should not be confused with clinical effect. A study can be statistically significant without having a very large clinical effect on the sample. For example, a study that examines the effect of a treatment on a client's ability to walk, may report that the participants in the treatment group were able to walk significantly longer distances than the control. However, if you read the study you may find that the treatment group was able to walk, on average, six feet, while the control group was able to walk, on average, five feet. While the outcome may be statistically significant, a clinician may not feel that a one foot increase will make his or her client functional.

- Terminology used in this document is based on two systems of classification current at the time the evidence-based literature reviews were completed: *Uniform Terminology for Occupational Therapy Practice—Third Edition* (AOTA, 1994) and *International Classification of Functioning, Disability and Health (ICIDH-2)* (World Health Organization [WHO], 1999). More recently, the *Uniform Terminology* document was replaced by *Occupational Therapy Practice Framework: Domain and Process* (AOTA, 2002), and modifications to *ICIDH-2* were finalized in the *International Classification of Functioning, Disability and Health* (WHO, 2001).

This work is based on the evidence-based literature review completed by Beatriz C. Abreu, PhD, OTR, FAOTA, and colleagues.

For more information about the Evidence-Based Literature Review Project, contact the Practice Department at the American Occupational Therapy Association, 301-652-6611, x 2040.

