National Rehabilitation Information Center

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reSearch: Aphasia & Stroke Rehabilitation

A collection of research reviews on rehabilitation topics from NARIC and other information resources.

Information Specialists at the National Rehabilitation Information Center field requests on a wide range of disability rehabilitation issues. Information on stroke and rehabilitation is a common request. In this edition of *reSearch*, the topic of aphasia and stroke is explored.

While the main search terms were aphasia and stroke the combined total of the NARIC, ERIC, PubMed, CIRRIE and the Cochrane database descriptors was 143 terms. Approximately 90 terms were shared between all five databases. A sample of these terms is listed below:

- Aphasia
- Aphasia Diagnosis/Etiology/Pathology/ Physiopathlogy/Rehabilitation
- Assistive Technology
- Brain/Head Injuries
- Cerebrovascular Accident/ Complications/Diagnosis/Rehabilitation
- Clinical Management/Observation
- Communication/Devices/Skills
- Cost-Benefit Analysis
- Depression/Etiology
- Evaluation Techniques
- Functional Assessment/Evaluations/ Status
- Language Disorders/Disability
- Neurolinguistics
- Neurological Disorders/Impairments
- Recovery of Function
- Rehabilitation/Centers/Science/ Research/Services
- Research Methodology/Reviews
- Speech Impairments
- Speech Therapy/Instrumentation/ Methods
- Stroke
- Therapy/Computer-Assisted
- Treatment Outcomes

Research in the area of stroke rehabilitation is extensive. Based on information requests from our patrons the objective of this research brief is to provide a "snap-shot" of the most current and relevant research available on aphasia and stroke. The REHABDATA search resulted in 16 documents ranging from 2005-2003. Five documents ranging from 2006-2004 resulted from the ERIC database. The PubMed's database search resulted in 14 documents ranging from 2006-2004. Seven documents resulted from the CIRRIE database search ranging between 2004-2002. Finally, there were five systematic reviews from the Cochrane Library search ranging between 2004-2000. The complete citations are included at the end of this research brief.

In addition to document searches, NARIC searched its Program database of the National Institute on Disability and Rehabilitation Research (NIDRR) projects to locate grantees/projects related to the topics of aphasia and stroke. Eight projects fell into the research scope. These projects and their publications are offered as additional resources for our patrons:

RRTC on Technology Promoting Integration for Stroke Survivors: Overcoming Social Barriers.
Project Number: H133B031127
(Active)

RRTC on Enhancing Quality of Life of Stroke Survivors.
Project Number: H133B30024
(No longer funded)

RRTC on Stroke Rehabilitation.
Project Number: H133B980021
(No longer funded)

Measuring Functional Communication: Multicultural and International Applications.
Project Number: H133G70055
(No longer funded)

Acupuncture as an Adjunctive Treatment in Stroke Rehabilitation.
Project Number: H133G990082
(No longer funded)

RRTC on Head Trauma and Stroke.
Project Number: H133B80028
(No longer funded)

Dopaminergic Enhancement of Functional Communication in Nonfluent Aphasia.
Project Number: H133F50001
(No longer funded)

Quality Indicators for Comparative Analysis of Stroke Outcomes.
Project Number: H133F70014
(No longer funded)

For project information, you may visit www.naric.com/research/default.cfm, select Research Projects and type in the project number. Each project listing includes citations from NARIC holdings.

Documents from NARIC's REHABDATA search listed are listed below:

2005

Bakheit, A.M.O., & S. Carrington. (2005). **High scores on the western aphasia battery correlate with good functional communication skills (as measured with the communicative effectiveness index) in aphasic stroke patients.** *Disability and Rehabilitation, 27(6), 287-291.*
NARIC Accession Number: J48967
ABSTRACT:
Study examined the correlation between an impairment-level and a functional-level assessment scale of aphasia. Sixty-seven stroke patients with aphasia who were undergoing a conventional speech and language therapy program participated in the study. Language impairment was assessed with the Western Aphasia Battery and functional communication skills associated with aphasia were assessed with the Communicative Effectiveness Index at baseline and at 4, 8, 12, and 24 weeks later. Analysis revealed a statistically significant correlation between the two scales for all assessment periods. Furthermore, both assessment scales reflected the changes in impairment and functional limitation over time in a similar way. The findings suggest that the scores one scale can be predicted from the other in the acute and subacute phases of stroke.

Hatfield, Brooke, & Debor Millet. (2005). **Characterizing speech and language pathology outcomes in stroke rehabilitation.** *Archives of Physical Medicine and Rehabilitation, 86(12, Supplement 2), S61-S72.*
NARIC Accession Number: J50101
ABSTRACT: Study describes the outcomes associated with speech-language pathology (SLP) services provided during stroke rehabilitation among patients with aphasia, based on data from the Post-Stroke Rehabilitation Outcomes Project (PSROP), a multi-site study of stroke rehabilitation outcomes. Data were analyzed for 397 patients receiving post-stroke SLP services at 5 inpatient rehabilitation facilities participating in the PSROP. Changes in auditory comprehension and verbal expression Functional Independence Measure scores from admission to discharge were used to determine the relationship between SLP activities and outcomes. Results showed that cognitively and linguistically complex SLP activities were associated with greater likelihood of success in low- to mid-level functional communication.

Wee, Joy Y.M., & Wilma M. Hopman. (2005). **Stroke impairment predictors of discharge function, length of stay, and discharge destination in stroke rehabilitation.** *American Journal of Physical Medicine and Rehabilitation, 84(8), 604-612.*
NARIC Accession Number: J49434

ABSTRACT: Study examined the relationship between stroke-related impairments and rehabilitation outcomes. The relationship between number of stroke risk factors and recurrence of strokes during rehabilitation was also evaluated. Admission balance scores, presence or absence of stroke impairments, total number of impairments, and presence of support at home were examined as predictor variables. Outcome variables included rehabilitation length of stay (LOS) in days, discharge functioning as measured by the Functional Independence Measure instrument, and discharge destination. Analyses revealed the significant predictive effects of: (1) admission balance, aphasia, number of impairments, and family support on LOS; (2) admission balance and number of impairments on discharge function; and (3) the presence of family support on discharge destination.

2004

Diener, Bethany L., & Janet A. Bischof-Rosarioz. (2004). **Determining decision-making capacity in individuals with severe communication impairments after stroke: The role of augmentative-alternative communication (AAC).** *Topics in Stroke Rehabilitation, 11(1), 84-88.*
NARIC Accession Number: J47374
ABSTRACT: Case example demonstrates how the use of augmentative and alternative communication systems can be used to determine the decision-making capacity of individuals with severe communication impairments after stroke. Subject's family wanted to determine if he had an adequate quality of life and whether he could provide informed consent regarding continuing or withdrawing medical treatment to maintain his life. A means of communication was identified for this subject that allowed him to provide information related to his preferences. Issues discussed include determining competency for making decisions regarding quality of life in people who cannot speak, write, or type.

Doesborgh, Suzzanne J.C., & D. Van. (2004). **Effects of semantic treatment on verbal communication and linguistic processing in aphasia after stroke: A randomized controlled trial.** *Stroke, 35(1), 141-146.*
NARIC Accession Number: J47258
ABSTRACT: Fifty-eight patients with a combined semantic and phonological deficit were randomized to receive either semantic treatment, which focused on word meaning, or the control treatment focused on word sound (phonology). Participants completed the Amsterdam Nijmegen Everyday Language Test (ANELT), an assessment of verbal communication, before and after the treatment. Results indicated that improved verbal communication was achieved in a different way for each treatment group. Semantic treatment patients improved on semantic measures and phonological treatment patients improved on phonological measures. No difference in the overall ANELT score was noted between the two treatment groups.

Kagan, Aura, & Joanna Winckel. (2004). **A set of observational measures for rating support and participation in conversation between adult with aphasia and their conversation partners.** *Topics in Stroke Rehabilitation, 11(1), 67-83.*
NARIC Accession Number: J47373
ABSTRACT: Article describes the development and evaluation of two complementary measures designed to capture elements of conversation between adults with aphasia and their speaking conversation partners. The first measure provides an index of the conversation partner's skill in providing conversational support. The second provides an index of the level of participation in conversation by the person with aphasia.

Laures, Jacqueline S., & Rebecca J. Shisler. (2004). **Complementary and alternative medical approaches to treating adult neurogenic communication disorders: A review.** *Disability and Rehabilitation, 26(6), 315-325.*
NARIC Accession Number: J47533
ABSTRACT: Article reviews research investigating the effectiveness of complementary

and alternative medicines (CAM) in treating adults with communication disorders related to neurologic impairment. Review provides a description of various techniques including acupuncture, hypnosis, relaxation training, dream analysis, biofeedback, and homeopathy/herbal medicine. Studies involving the use of CAM to treat aphasia, motor speech disorders, and cognitive impairments are discussed.

Peck, Kyung K., & Anna B. Moore. (2004). **Functional magnetic resonance imaging before and after aphasia therapy: Shifts in hemodynamic time to peak during an overt language task.** *Stroke, 35(2), 554-559.*
NARIC Accession Number: J47262
ABSTRACT: Study investigated differences in the time to peak (TTP) of hemodynamic responses in activated cortical regions of patients with aphasia before and after language therapy, and related them to changes in language task performance. Three patients with aphasia and three control subjects overtly generated a single word in response to a category. The timing differences between auditory cues and verbal responses were compared with TTP differences between auditory and motor cortices. The selected regions were significantly activated in both patients with aphasia and controls during overt word generation. In patients with aphasia, both the timing difference from auditory cues to verbal responses and the TTP difference between auditory and motor cortices decreased after rehabilitation, becoming similar to the values found in controls.

Sarno, Martha T., & Joan Peters. (2004). **The aphasia handbook: A guide for stroke and brain injury survivors and their families.**
NARIC Accession Number: R08661
ABSTRACT: Handbook provides information and advice for people with aphasia, a communication disability usually caused by stroke or brain injury. The contents are presented in an easy-to-read format on a wide range of topics, including: being in the hospital, rehabilitation and speech therapy, getting support at home, money and benefits, vocational opportunities, relationships, communicating with others, transportation and travel, education, patient rights, and legal issues. A listing of useful organizations and resources is included.

2003

Bhogal, Sanjit K., & Robert W. Teasell. (2003). **Intensity of aphasia therapy, impact on recovery.** *Stroke, 34(4), 987-993.*
NARIC Accession Number: J45499
ABSTRACT: Reviews research that examined the relationship between intensity of aphasia therapy and aphasia recovery after stroke. Studies investigating the efficacy of speech and language therapy for aphasia after stroke were reviewed. Intensity of therapy was recorded in terms of length of therapy, hours of therapy provided per week, and total hours of therapy provided. Pearson correlation was used to assess the relationship between outcome of the study and the intensity of therapy. Results indicated that of the positive trials analyzed, significantly more hours of therapy per week were provided over a short period of time. In the negative studies, less intense therapy was provided for a longer period of time. Overall, the positive studies provided a total of 98.4 hours of therapy and the negative studies provided 43.6 hours of therapy. The total number of hours of therapy provided correlated significantly with greater the improvement in outcome measures.

Bhogal, Sanjit K., & Robert W. Teasell. (2003). **Rehabilitation of aphasia.** *Topics in Stroke Rehabilitation, 10(2), 66-76.*
NARIC Accession Number: J46093
ABSTRACT: Literature review examined aspects of aphasia therapy that have been most effective in facilitating recovery following stroke. Eight studies were included in the review. Major findings included: (1) the more intense the aphasia therapy, the better the outcome; (2) constraint induced therapy is a promising treatment for aphasia; (3) volunteers can provide therapy that is as effective as speech-language therapy; and (4) group therapy may improve outcomes if there are not other alternatives.

Cardebat, Dominique, & Jean-François Démonet. (2003). **Behavioral and neurofunctional changes over time in healthy and aphasic subjects: A PET language activation study.** *Stroke, 34(12), 2900-2907.*
NARIC Accession Number: J46690
ABSTRACT: Six healthy subjects and eight patients with aphasia were scanned twice with positron emission tomography (PET) at a 1-year interval (PET 1 and PET 2) during a word generation task. The language-rest main effect was compared at the first and second PET sessions in each group, whereas the group effect was assessed at each session. Correlations were analyzed in each group between performance indexes and changes in regional cerebral blood flow between the two sessions. Language performances were improved in both groups. Regional cerebral blood flow decreased from PET1 to PET 2 in the healthy group and increased in the aphasic group in perisylvian regions bilaterally. Correlations between performance and region cerebral blood flow changes across sessions were similar in the two groups.

Hilari, Katerina, & Sally L. Byng. (2003). **Stroke and aphasia quality of life scale-39 (SAQOL-39): Evaluation of acceptability, reliability, and validity.** *Stroke, 34(8), 1944-1950.*
NARIC Accession Number: J46101
ABSTRACT: Study evaluates the psychometric properties of the 53-item Stroke and Aphasia Quality of Life (SAQOL) and the item reduced SAQOL-39. The SAQOL is a measure of health-related QOL, developed to be communicatively accessible to people with aphasia. Analysis showed that the SAQOL had good internal consistency and excellent test-retest reliability. Results supported the overall validity of the SAQOL, but there was little support for the hypothesized subdomains. Using factor analysis, the shorter SAQOL-39 was derived that identified four subdomains: physical, psychosocial, communication, and energy. The SAQOL-39 demonstrated good acceptability, internal consistency, test-retest reliability, and construct validity.

Teasell, Robert W., & Nori Foley. (2003). **An evidence-based review of stroke rehabilitation.** *Topics in Stroke Rehabilitation, 10(1), 29-58.*
NARIC Accession Number: J45818
ABSTRACT: Article reviews the evidence provided by the Stroke Rehabilitation Evidence-Based Review (SREBR), created to provide an up-to-date review of current evidence in stroke rehabilitation and to provide specific conclusions based on evidence that could be used to help direct stroke care practices. Chart highlights the information provided in the SREBR and provides conclusions regarding the levels of evidence for treatments involved. Key treatment areas discussed include: (1) interdisciplinary inpatient stroke rehabilitation, (2) outpatient stroke rehabilitation, (3) medical-nursing complications, (4) mobility/lower extremity, (5) upper extremity interventions, (6) painful hemiplegic shoulder, (7) cognitive-perceptual disorders, (8) aphasia, (9) dysphagia and aspiration, (10) nutritional interventions, (11) depression, (12) community reintegration, and (13) miscellaneous treatments for motor recovery.

Teasell, Robert W. (2003). **Stroke rehabilitation evidence-based review: Part 2.** *Topics in Stroke Rehabilitation, 10(2).*
NARIC Accession Number: R08368
ABSTRACT: Journal issue features the results of six specific areas of research in stroke rehabilitation. Topics include: (1) the efficacy of inpatient rehabilitation, (2) early supported discharge, (3) treatments designed to improve mobility, (4) perceptual deficits and left neglect, (5) aphasia, and (6) family interventions. Articles are included separately in the NARIC collection under accession numbers J46090 through J46097.

Steele, Richard D., & Lefkos B. Aftonomos. (2003). **Evaluation and treatment of aphasia among the elderly with stroke.** *Topics in Geriatric Rehabilitation, 19(2), 98-108.*
NARIC Accession Number: J45828
ABSTRACT: Presents an overview of the evaluation, treatment, and outcomes of elderly patients with aphasia following stroke. Article describes assessment tools and ways to use them, discusses various treatment approaches, and provides qualitative and quantitative analysis of outcomes data.

Document from the Education Resource Information Center (ERIC) search at www.eric.ed.gov/ are listed below:

2006

Jensen, Angela M., Chenery, Helen J., & David A. Copland. (2006). **A Comparison of Picture Description Abilities in Individuals with Vascular Subcortical Lesions and Huntington's Disease.** *Journal of Communication Disorders, 29(1), 62-77.*
ERIC #: EJ724435
ABSTRACT: The lexical-semantic and syntactic abilities of a group of individuals with chronic nonthalamic subcortical (NS) lesions following stroke (n=6) were investigated using the Western Aphasia Battery (WAB) picture description task [Kertesz, A. (1982). "The Western aphasia battery." New York: Grune and Stratton] and compared with those of a group of subjects with Huntington's Disease (HD) (n=6) and a nonneurologically impaired control group (n=6) matched for age, sex, and educational level. The performance of the NS and HD subjects did not differ significantly from the well controls on measures of lexical-semantic abilities. NS and HD subjects provided as much information about the target picture as control subjects, but produced fewer action information units. Analysis of syntactic abilities revealed that the HD subjects produced significantly more grammatical errors than both the NS and control subjects and that the NS group performed in a similar manner to control subjects. These findings are considered in terms of current theories of subcortical language function. Learning outcomes: As a result of this activity, the reader will obtain information about the debate surrounding the role of subcortical language mechanisms and be provided with new information on the comparative picture description abilities of individuals with known vascular and degenerative subcortical pathologies and healthy control participants.

De Witte, Lieve, Wilssens, Ineke, Engelborghs, Sebastian, De Deyn, Peter P., & Peter Marien. (2006). **Impairment of Syntax and Lexical Semantics in a Patient with Bilateral Paramedian Thalamic Infarction.** *Brain and Language, 96(1), 69-77.*
ERIC #: EJ724331
ABSTRACT: Bilateral vascular thalamic lesions are rare. Although a variety of neurobehavioral manifestations have been described, the literature is less documented with regard to accompanying linguistic disturbances. This article presents an in-depth neurolinguistic analysis of the language symptoms of a patient who incurred bilateral paramedian ischemic damage of the thalamus. In the post-acute phase of the stroke, a unique combination of transcortical sensory aphasia with syntactic impairment was found. Because of this atypical semiological association, additional analyses of spontaneous speech were performed. In spite of the typological affinity with the grammatic characteristic of marked simplification of syntax observed in Broca's aphasia, only a wordclass specific, lexical-semantic deficit for verbs was objectified. The hypothesis that lexical-semantic disturbances in our patient might result from a functional deafferentiation of both thalami with the frontal lobe is supported by: (1) associated neuropsychological deficits of frontal origin and (2) frontal-like behavioral disturbances.

2005

Lynne Mortensen. (2005). **Written Discourse and Acquired Brain Impairment: Evaluation of Structural and Semantic Features of Personal Letters from a Systemic Functional Linguistic Perspective.** *Clinical Linguistics and Phonetics, 19(3), 227-247.*
ERIC #: EJ691723
ABSTRACT: This qualitative study investigated written discourse in the form of personal letters written by ten people with aphasia following stroke and ten people with cognitive-language disorder as a consequence of traumatic brain injury, and compared their performance with 15 non brain-damaged writers. Personal letters perform the dual function of providing information and maintaining social relationships. Using the Systemic Functional Linguistics framework for investigation, letters

were examined in terms of their dual functions, and at two different strata of language generic structure and semantic organisation. A small quantum of research suggests that the dissociation between different strata of language (i.e., macro and micro linguistic abilities), identified in the spoken discourse of people with aphasia and people with cognitive-language disorder is mirrored in written discourse. Aphasic writers largely maintain coherent text structure while writers with cognitive-language impairment demonstrate problems with global text coherence and the episodic structure of texts. Results of the generic structure analysis did not support the hypothesis. However, the semantic Move analysis revealed how diminished linguistic resources, most evident in the letters written by the subjects with aphasia, impacted upon the semantic diversity of the text, as well as the interpersonal function of the personal letter. Variable performance as a feature pathology and normality is highlighted and clinical implications discussed.

2004

Heilman, Kenneth M., Leon, Susan A., & John C. Rosenbek. (2004). **Affective Aprosodia from a Medial Frontal Stroke.** *Brain and Language, 89(3), 411-416.*
ERIC #: EJ730888
ABSTRACT: Background and objectives: Whereas injury to the left hemisphere induces aphasia, injury to the right hemisphere's perisylvian region induces an impairment of emotional speech prosody (affective aprosodia). Left-sided medial frontal lesions are associated with reduced verbal fluency with relatively intact comprehension and repetition (transcortical motor aphasia), but persistent affective prosodic defects associated with right medial frontal lesions have not been described. Methods: We assessed the prosody of a man who sustained a right medial frontal cerebral infarction seven years prior. Results: While propositional speech expression was normal including syntactic prosody, the patient was impaired at expressing emotions using prosody. His comprehension and repetition of prosody were also impaired but less so than expression. Conclusions: Right medial frontal lesions can induce an affective aprosodia that primarily impairs expression.

Hillis, Argye E., Barker, Peter B., Wityk, Robert J., Aldrich, Eric M., Restrepo, Lucas, Breese, Elisabeth L., & Melissa Work. (2004). **Variability in Subcortical Aphasia Is Due to Variable Sites of Cortical Hypoperfusion.** *Brain and Language, 89(3), 524-530.*
ERIC #: EJ730889
ABSTRACT: A variety of fluent and nonfluent aphasias have been reported after left basal ganglia stroke. It has been speculated that this heterogeneity may reflect variations in cortical hypoperfusion resulting from large vessel stenosis. To test this hypothesis, a consecutive series of 24 patients with left caudate infarct identified with diffusion-weighted imaging underwent language testing and perfusion-weighted imaging <24h from onset of symptoms. Specific regions in perisylvian cortex were rated for the percentage of the region that was hypoperfused. Aphasia type was determined on the basis of speech fluency, comprehension, and repetition performance on the language tests. Association between aphasia type/language impairment and regions of hypoperfusion were identified with Fisher's exact tests. Results demonstrated that in patients with acute left caudate infarct, the presence and type of aphasia reflected regions of hypoperfusion, and generally followed predictions based on chronic lesion studies, regarding anatomical lesions associated with classic aphasia types.

Document from the National Library of Medicine PubMed search at http://www.pubmed.com/ are listed below:

2006

Cruice, M., Worrall, L., & L. Hickson. (2006). **Perspectives of quality of life by people with aphasia and their family: suggestions for successful living.** Topics in Stroke Rehabilitation, 13(1), 14-24.
PMID#: 16581626

ABSTRACT: Understanding the client's perspective is essential for good practitioner care in rehabilitation after stroke, and nothing is more relevant than enquiring directly about our clients' quality of life to inform our management. Relatively little is known about how older people with aphasia consider the quality of their current lives, and this article seeks to explore this issue. Four women's accounts of their life quality are presented, as well as their husbands' or daughter's accounts of their lives. Their stories share some common elements. Who you love or share your life with; where you live; feeling independent and/or in control; and engaging in satisfying activities mattered to these women's life quality. The impact of aphasia varies across the cases, and the need to accept change for successful living is illustrated in all accounts.

Michel Rijntjes. (2006). **Mechanisms of recovery in stroke patients with hemiparesis or aphasia: new insights, old questions and the meaning of therapies.** *Current Opinion in Neurology, 19(1), 76-83.*
PMID#: 16415681
ABSTRACT: PURPOSE OF REVIEW: The mechanisms responsible for recovery after stroke in patients with hemiparesis or aphasia are under intense study, since knowledge of these mechanisms is a prerequisite for choosing which therapy a patient receives and when to apply it. RECENT FINDINGS: Most of the recent insights are obtained with longitudinal studies using functional imaging and direct cortical stimulation during the process of recovery. They reveal that reorganization is a highly dynamic process, involving the establishment of new communications in the remaining system and showing similarities to learning processes in healthy individuals. Lesion localization is a major determinant for recovery and the pattern of reorganization. Neurobiological hypotheses lead to clinical studies, which in turn are now used to confirm or reject these hypotheses. SUMMARY: Although our understanding of the mechanisms responsible for recovery is increasing, the application of this knowledge in daily praxis is still limited. A better understanding of the underlying mechanisms, however, can lead to appropriate therapies for individual patients.

Salter, K., Jutai, J., Foley, N., Hellings, C., & R. Teasell. (2006). **Identification of aphasia post stroke: A review of screening assessment tools.** *Brain Injury, 20(6), 559-68.*
PMID#: 167542781
ABSTRACT: Aphasia is one of the most common consequences of stroke. Early identification, diagnosis and treatment of language deficits are important steps in maximizing rehabilitation gains. A routine screening test is an invaluable tool in the identification and appropriate referral of patients with potential communication problems. The present study presents an evaluation of the measurement properties of screening tools for aphasia found within the stroke research literature.Methods: Screening tools were identified following searches of the published research literature in stroke. Instruments were reviewed on the basis of reliability, validity, classification sensitivity and practical utility. Results: Six aphasia screening tools were identified. For most tools, information pertaining to measurement properties and clinical utility was limited.Conclusions: The Frenchay Aphasia Screening Test (FAST) appears to be the most widely used and thoroughly evaluated tool found within the stroke research literature. Further evaluation of the measurement properties and clinical utility of screening tools is recommended.

2005

Carod-Artal, F.J., Medeiros, M.S., Horan, T.A., & L.W. Braga. (2005). Predictive factors of functional gain in long-term stroke survivors admitted to a rehabilitation programme. *Brain Injury, 19(9), 667-73.*
PMID#: 16195179
ABSTRACT: PRIMARY OBJECTIVE: To assess factors that may influence functional gain of patients with chronic sequelae of stroke. RESEARCH DESIGN: Prospective study of 290 stroke patients consecutively admitted to a

rehabilitation setting. METHODS AND PROCEDURES: Functional Independence Measure Scale (FIM) was used to assess functional capacity. Functional improvement registered during hospitalization (FIM-gain score) was compared to demographic data, stroke sub-type, vascular risk factors, motor deficit, visual hemineglect, aphasia, level of response and sphincter control. FIM-gain score was classified as high-gain (=22) and low-gain (<22). MAIN OUTCOMES AND RESULTS: Two hundred and fifty-two patients who had no prior rehabilitation and were capable of completing the rehabilitation programme were studied (average age 58.4+/-13.9 years; 42.9% women). The mean time from stroke onset to admission was 271.5 days. Average FIM score at admission was 58.8 and at discharge was 81.6. Average FIM Gain was 23.6. The 38% patients admitted later than 6 months after stroke had an average FIM Gain of 19 vs 26 for patients admitted prior to 6 months. Significant predictors of functional improvement were time from stroke onset, age, sitting balance and level of responsiveness. CONCLUSION: The functional improvement scores in persons with stroke beginning a rehabilitation programme at a later stage are 73% of the scores obtained by patients beginning treatment in the first 6 months. FIM score improvement can be predicted by time since stroke onset, age, sitting balance and level of responsiveness.

Jordan, L.C., & A.E. Hillis. (2005). **Aphasia and right hemisphere syndromes in stroke.** *Current Neurology and Neuroscience Reports, 5(6), 458-64.*
PMID#: 16263057
ABSTRACT: This article highlights the latest findings regarding the effect of acute and chronic stroke on behavior, specifically left hemispheric injury causing aphasia and right hemispheric injury causing neglect, visual-spatial problems, and other cognitive syndromes. We review papers published in the past two years pertaining to localization, assessment, recovery, treatment, and outcomes of aphasia and right hemisphere cognitive syndromes following stroke.

Nakase-Thompson, R., Manning, E., Sherer, M, Yablon, S.A., Gontkovsky, S.L., & C. Vickery. (2005). **Brief assessment of severe language impairments: initial validation of the Mississippi aphasia screening test.** *Brain Injury, 19(9), 685-91.*
PMID#: 16195182
ABSTRACT: PRIMARY OBJECTIVE: To validate the Mississippi Aphasia Screening Test (MAST) which includes nine sub-scales measuring expressive and receptive language abilities. RESEARCH DESIGN: Evaluation of inpatients admitted to neurology, neurosurgery or rehabilitation units at two local hospitals and who were within 60 days of onset of a unilateral ischemic or haemorrhagic stroke (left hemisphere (LH; n=38); right hemisphere (RH; n=20)). Additional participants were recruited from the community to comprise a non-patient control sample (NP; n=36). METHODS: Data collection included administration of the MAST and chart review. RESULTS: The LH group showed more impairment than the RH and NP groups on summary scores. The LH group performed worse than the NP group on all sub-scales. The object recognition and verbal fluency sub-scales did not discriminate the stroke groups. CONCLUSION: Analyses suggest good criterion validity for the MAST in differentiating communication impairments among clinical and control samples.

Van Der Gaag, A., Smith, L., Davis, S., Moss, B., Cornelius, V., Laing, S., & C. Mowles. (2005). **Therapy and support services for people with long-term stroke and aphasia and their relatives: a six-month follow-up study.** *Clinical Rehabilitation, 19(4), 372-80.*
PMID#: 15929505
ABSTRACT: OBJECTIVE: To evaluate the impact of attending an aphasia therapy centre on quality of life and communication skills in people with stroke and aphasia and their relatives. DESIGN: Before and after study, six months duration. SETTING: Community-based aphasia therapy centre in the United Kingdom. PARTICIPANTS: Thirty-eight men and women with aphasia following a stroke, and 22 of their

relatives. Mean time since stroke was 33 months (SD 24.1). INTERVENTIONS: A range of group therapies for people with aphasia and their relatives and counselling for individuals and couples. OUTCOME MEASURES: Quantitative outcome measures were ratings of quality of life and communication for people with aphasia, and relatives' independent ratings of communication and coping with caring. Qualitative outcomes were perceptions of quality of life and communication skills using semi-structured interviews. RESULTS: Improvement was detected on all outcomes at six months. There were significant changes from baseline on the quality of life measure, mean difference 0.14 (95% confidence interval 0.02, 0.26); and the communication measure assessed by people with aphasia and their relatives, mean difference 12.8 (4.0, 21.5) and 9.7 (3.6, 15.7) respectively. The changes on the coping with caring measure were not significant, though the direction of change was positive. Qualitative interviews revealed a similar pattern of benefit in terms of increased levels of self-confidence and changes in lifestyle and levels of independence. CONCLUSIONS: The results suggest that this therapeutic approach has an impact on quality of life and communication for people with aphasia and their relatives.

Wee, J.Y., & W.M. Hopman. (2005). **Stroke impairment predictors of discharge function, length of stay, and discharge destination in stroke rehabilitation.** *American Journal of Physical Medicine & Rehabilitation, 84(8), 604-12.*
PMID#: 16034230
ABSTRACT: OBJECTIVES: This article presents analytic results from a prospective study of 313 stroke rehabilitation patients, looking at the relative contributions of different stroke impairments toward prediction of discharge function, rehabilitation length of stay, and discharge destination after inpatient rehabilitation. The relationship between number of stroke risk factors and recurrence of strokes during rehabilitation was also evaluated. METHODS: A total of 313 subjects were enrolled consecutively. Information on type of stroke and individual stroke-related impairment was collected prospectively. Recurrent stroke, rehabilitation length of stay, discharge destination, discharge function, and available family support at discharge were documented. RESULTS: Rates of impairment occurrence and coexistence are presented. Analysis using linear (length of stay, discharge function) and logistic (discharge destination) regression revealed significant contributory predictive effects of admission balance, aphasia, number of impairments, and family support on length of stay; admission balance and number of impairments on discharge function; and admission balance, body neglect, and presence of family support on discharge destination. CONCLUSION: In addition to admission function and balance, other factors to consider in predicting length of stay for patients should include the number of stroke-related impairments and family support. For discharge destination prediction, the presence of body neglect should be considered in addition to balance and family support. Evaluation of patients for right-sided neglect and left-sided neglect is important.

2004

Breitenstein, C., Kamping, S., Jansen, A., Schomacher, M., & S. Knecht. (2004). **Word learning can be achieved without feedback: implications for aphasia therapy.** *Restorative Neurology and Neuroscience, 22(6), 445-58.*
PMID#: 15798363
ABSTRACT: PURPOSE: Children acquire new words through exposure, without the necessity for explicit feedback by caregivers. In aphasia therapy, feedback to the patient is considered an important asset even though the empirical base demonstrating superior learning with online feedback is lacking. The present study examined if healthy adults and patients with chronic aphasia can acquire a new lexicon by intense frequency of exposure alone. METHODS: We compared learning rates with "frequency of exposure alone" (no-feedback condition: n=19 healthy adults; two patients with chronic Broca's and Wernicke's aphasia, respectively) with a condition where subjects

additionally received online feedback (feedback condition; n=19). The learning principle was higher statistical co-occurrences of "correct" picture-pseudoword pairings as compared to "incorrect" pairings. In the feedback condition, immediate online feedback on the correctness of respective choices was additionally provided. RESULTS: Both healthy groups successfully acquired the vocabulary. Feedback led to a slight initial acceleration of learning but did not improve latency to peak performance or long-term retention of lexical knowledge. These findings show that high frequency interactive exposure is a potent word learning mechanism in adults and that feedback is not crucial. This is further corroborated by our successful training of two patients with chronic aphasia without online feedback. CONCLUSIONS: Our findings demonstrate that word re-learning in aphasia could benefit from maximizing on the frequency of exposure and exploiting the therapeutic principle of "massed practice", which has been successful in physical rehabilitation after stroke. Additionally, economizing on feedback may prevent patients becoming discouraged by continuous confrontation with their deficits.

Leeds, L., Meara, R.J., & J.P. Hobson. (2004). **The utility of the Stroke Aphasia Depression Questionaire (SADQ) in a stroke rehabilitation unit.** *Clinical Rehabilitation, 18(2), 228-31.*
PMID#: 15053133
ABSTRACT: OBJECTIVE: To determine the utility of an observer-based rating scale to detect depression in patients without aphasia. DESIGN: Correlation analysis between the Stroke Aphasia Depression Questionnaire, shortened version (SADQ-10) and a validated self-rating measure of depression, the Geriatric Depression Scale (GDS). The sensitivity and specificity of the SADQ-10 were also calculated. SETTING: Stroke rehabilitation unit. SUBJECTS: Sixty-five stroke patients without significant aphasia undergoing rehabilitation. INTERVENTIONS: All patients were assessed with the GDS-15 and the SADQ-10. RESULTS: The SADQ-10 at a cut-point of 14 out of 30 had a sensitivity of 70% and a specificity of 77% to detect depression. This measure demonstrated good internal consistency but showed only a modest correlation with the GDS-15 ($r = 0.40$, $p < 0.001$). CONCLUSION: In the population under study the SADQ-10 did not appear to be a valid measure of depression compared with the GDS and, therefore, may not be suitable for use in patients without significant aphasia.

Meinzer, M.; Elbert, T., Wienbruch, C., Djundja, D., Barthel, G., & B. Rockstroh. (2004). **Intensive language training enhances brain plasticity in chronic aphasia.** *BMC Biology, 2, 20.* [No abstract available.]

Mortley, J., Wade, J., Enderby, P., & A. Hughes. (2004). **Effectiveness of computerised rehabilitation for long-term aphasia: a case series study.** *The British Journal of General Practice, 54(508), 856-7.*
PMID#: 15527613
ABSTRACT: Seven participants with long-standing aphasia following cerebrovascular accident were serially recruited to a case series study where language therapy was delivered at home and monitored via the Internet. All participants improved in word finding, and four improved in general communication.

Zwinkels, A., Geusgens, C., Van De Sande, P., & C. Van Heugten. (2004). **Assessment of apraxia: inter-rater reliability of a new apraxia test, association between apraxia and other cognitive deficits and prevalence of apraxia in a rehabilitation setting.** *Clinical Rehabilitation, 18(7), 819-27.*
PMID#: 15573839
ABSTRACT: OBJECTIVE: To investigate the inter-rater reliability of a new apraxia test. Furthermore to examine the association of apraxia with other neuropsychological impairments and the prevalence of apraxia in a rehabilitation setting on the basis of the new test. DESIGN: Cross-sectional cohort study, involving 100 patients with a first stroke admitted to a rehabilitation centre in the Netherlands. MEASURES: General patient characteristics and stroke-related aspects. Cognitive screening involving apraxia, visuospatial scanning,

abstract thinking and reasoning, memory, attention, planning and aphasia. RESULTS: The indices for inter-rater agreement range from excellent to poor. Significant correlations are found between apraxia and visuospatial scanning, memory, attention, planning and aphasia. The patients with apraxia perform significantly worse than the patients without apraxia on memory, the time needed to complete the tests for scanning and attention, and aphasia. The prevalence of apraxia is 25.3% in the total group, 51.3% in the left hemisphere stroke patients and 6.0% in the right hemisphere stroke patients. Patients with and without apraxia do not differ significantly concerning age, gender and type of stroke. CONCLUSION: The apraxia test has been shown to be a reliable instrument. Apraxia is often associated with aphasia, memory problems and mental slowness. This study shows that on the basis of the apraxia test, the prevalence of apraxia among patients in the rehabilitation centre is high, especially among patients with left hemisphere lesions.

Document from the Center for International Rehabilitation Research Information and Exchange (CIRRIE) search at http://cirrie.buffalo.edu/ are listed below:

2004

Pedersen, P.M., Vinter, K., & T.S. Olsen. (2004). **Aphasia after stroke: type, severity and prognosis. The Copenhagen aphasia study.** *Cerebrovascular Diseases, 17(1), 35-43.*
PMID#: 14530636
ABSTRACT: AIM: To determine the types, severity and evolution of aphasia in unselected, acute stroke patients and evaluate potential predictors for language outcome 1 year after stroke. METHODS: 270 acute stroke patients with aphasia (203 with first-ever strokes) were included consecutively and prospectively from three hospitals in Copenhagen, Denmark, and assessed with the Western Aphasia Battery. The assessment was repeated 1 year after stroke. RESULTS: The frequencies of the different types of aphasia in acute first-ever stroke were: global 32%, Broca's 12%, isolation 2%, transcortical motor 2%, Wernicke's 16%, transcortical sensory 7%, conduction 5% and anomic 25%. These figures are not substantially different from what has been found in previous studies of more or less selected populations. The type of aphasia always changed to a less severe form during the first year. Nonfluent aphasia could evolve into fluent aphasia (e.g., global to Wernicke's and Broca's to anomic), whereas a fluent aphasia never evolved into a nonfluent aphasia. One year after stroke, the following frequencies were found: global 7%, Broca's 13%, isolation 0%, transcortical motor 1%, Wernicke's 5%, transcortical sensory 0%, conduction 6% and anomic 29%. The distribution of aphasia types in acute and chronic aphasia is, thus, quite different. The outcome for language function was predicted by initial severity of the aphasia and by the initial stroke severity (assessed by the Scandinavian Stroke Scale), but not by age, sex or type of aphasia. Thus, a scoring of general stroke severity helps to improve the accuracy of the prognosis for the language function. One year after stroke, fluent aphasics were older than nonfluent aphasics, whereas such a difference was not found in the acute phase. Copyright 2004 S. Karger AG, Basel

2003

D.C. Kuljic-Obradovic. (2003). **Subcortical aphasia: three different language disorder syndromes?** *Stroke, 34(7), 1746-51.*
PMID#: 12823499
ABSTRACT: The study analyses clinical presentation of language functions of 32 patients with subcortical aphasia induced by stroke. The patients have been divided into three groups according to neuroanatomic localization of the lesion, defined by CT and MRI examination (striato-capsular aphasia, aphasia associated with white matter paraventricular lesions and thalamic aphasia). The following batteries and tests were used: the neurologic examination, CT scan, MRI, Doppler ultrasound, Mini Mental State Examination, Boston Diagnostic Aphasia Examination (BDAE), Boston Naming Test (BNT), Token Test and Verbal Fluency Test. Clinical presentation of subcortical aphasias

is characterized with preserved repetition, however, some groups differ by certain specific features of language impairment. Striato-capsular aphasia and aphasia associated with white matter paraventricular lesions are characterized with lack of speech fluency, occurrence of literary paraphasias, mainly preserved comprehension and naming. Thalamic aphasia, however, is characterized with fluent output, impaired comprehension and naming with predominant verbal paraphasias. The specific features of language impairment suggest that subcortical structures contribute to language organization. Considering the results of language tests we presume that the most prominent feature in striato-capsular aphasia is phonetic impairment of language, opposite to thalamic aphasia where lexical-sematic processing seems to be affected.

Perani, D., Cappa, S.F., Tettamanti, M., Rosa, M., et al. (2003). **A fMRI study of word retrieval in aphasia.** *Brain and Language, 85(3), 357-368.*
PMID#: 12744947
ABSTRACT: The neural mechanisms underlying recovery of cognitive functions are incompletely understood. Aim of this study was to assess, using functional magnetic resonance (fMRI), the pattern of brain activity during covert word retrieval to letter and semantic cues in five aphasic patients after stroke, in order to assess the modifications of brain function which may be related to recovery. Four out of five patients had undergone language recovery, according to standard testing, after at least 6 months of rehabilitation. The cerebral activation of each patient was evaluated and compared with the activation pattern of normal controls studied with the same fMRI paradigm. In the patients, the pattern of brain activation was influenced by the site and extent of the lesion, by the degree of recovery of language, as reflected by task performance outside the scanner, and by task requirements. In the case of word retrieval to letter cues, a good performance was directly related to the activation in Broca's area, or in the right-sided homologue. On the other hand, in the case of semantic fluency, the relationship between performance level and activation was less clear-cut, because of extensive recruitment of frontal areas in patients with defective performance. These findings suggest that the performance in letter fluency is dependent on the integrity of the left inferior frontal cortex, with the participation of the homologous right hemispheric region when the left inferior frontal cortex is entirely of partially damaged. Semantic fluency, which engages the distributed network of semantic memory, is also associated with more extensive patterns of cerebral activation, which however appear to reflect retrieval effort rather than retrieval success.

Sundin, K., & L. Jansson. (2003). **'Understanding and being understood' as a creative caring phenomenon — in care of patients with stroke and aphasia.** *Journal of Clinical Nursing, 12(1), 107-16.*
PMID#: 12519256
ABSTRACT: Five care providers particularly successful at communicating with patients with communication difficulties were video-recorded together with three patients with aphasia after stroke, during morning care activities. The care providers were then interviewed immediately after the video-recordings, about their experiences of communicating with such patients. The interviews with the care providers were interpreted by means of a phenomenological hermeneutic method. Co-creating was the main theme found. Care providers invite the patient to participate in the creative act of communication. They have a communicative attitude and show interest in the patients' personal desires. The care providers encounter the patient as a presence in a caring communion. In part, care providers communicate by continuously conveying their presence to the patient and even creating availability in a close and open intersubjective relationship. A relaxed and supportive atmosphere facilitates reciprocity between care provider and patient. The communication is not technical or strategic; instead care providers share the patients' experiences in a silent dialogue. This silent dialogue involves sharing the patients' feelings and thus receiving messages from the patient.

\2002

Blank, S.C., Bird, H., Turkheimer, F., & R.J. Wise. (2002). **Speech production after stroke: the role of the right pars opercularis.** *Annals of Neurology, 54(3), 310-20.*
PMID#: 12953263
ABSTRACT: Recovery of speech after infarction of the left pars opercularis (POp) may be due to recruitment of homotopic cortex in the right hemisphere. Using positron emission tomography, we investigated activity within left and right POp during everyday propositional speech. We studied seven aphasic patients with left anterior perisylvian infarction which included the POp. We compared their data with two control groups: 12 normal subjects and 7 anterior aphasic patients whose infarcts spared the left POp. During propositional speech, normal subjects activated the left POp, left posterior perisylvian cortex, and a distributed, predominantly left-lateralized, extrasylvian neural network. Importantly, activity in the right POp was reduced relative to a baseline nonspeech condition. In patients with infarction of the left POp, activity in the right POp was reversed: speech activated the right POp above baseline. Patient controls activated the left POp but did not show the normal relative reduction in activity in the right POp. In both patient groups, posterior perisylvian and extrasylvian activations remained unchanged from normal. This result demonstrates that infarction of the left POp is associated with a chronic change in function of the contralateral homotopic cortex during speech.

Hickin, J., Best, W., Herbert, R., Howard, D., et al. (2002). **Phonological therapy for word-finding difficulties: A re-evaluation.** *Aphasiology, 16(10-11), 981-999.*
ABSTRACT: The purpose of this study is to determine the effectiveness of the use of phonological and orthographic cues in the treatment of word-finding difficulties and its impact on word retrieval. Eight persons with 1-year post onset aphasia as a result of stroke participated in the study and seven of them benefited from the treatment and improvement in their phonological and orthographic cues were observed. The response to treatment and the overall outcome of facilitation were significantly correlated.

Szelies, B., Mielke, R., Kessler, J., & W.D. Heiss. (2002). **Prognostic relevance of quantitative topographical EEG in patients with poststroke aphasia.** *Brain and Language, 82(1), 87-94.*
PMID#: 12174818
ABSTRACT: In this prospective study we analyzed the prognostic value of topographical quantitative EEG (qEEG) in poststroke aphasia. Twenty-three right-handed patients (ages 56 +/- 12 years) with different types of aphasia were studied. Quantitative EEG under resting conditions and an aphasia test battery were applied twice, 2 and 8 weeks after a stroke. EEG power fast Fourier transform was performed for delta (2-3.5 Hz), theta (4-7.5 Hz), alpha (8-13 Hz), and beta (13.5-20 Hz) frequency bands. EEG abnormalities within and outside speech relevant areas are related to restitution of poststroke aphasia. In the ischemic regions they indicate local disturbances; outside they reflect failures in neuronal networks involved in the generation and propagation of the alpha rhythm.

Documents from the Cochrane Database of Systematic Reviews search at www.thecochranelibrary.org/ are listed below:

Lai, X.S., Liu, J.Y., & G. M. Jiang. (2004). **Effect of combination of acupuncture treatment at Lienchʼ uan and plum blossom needle treatment at the tip of tongue on aphasia after stroke and its significance on hemorheology.** *Zhongguo Linchuang Kangfu, 8(19), 3818-20.*
Accession Number: EMBASE 2004428849
ABSTRACT: Aim: To explore the combination of acupuncture treatment at Lienchʼ uan (Ren 23) which was the key process and plum blossom needle treatment at the tip of tongue to treat aphasia after stroke and its therapeutic mechanism from hemorheology. Methods: By single-blind randomized method, 30 patients out of the 51 patients were assigned to the treatment group and another 21 patients to the control group. Combination of acupuncture treatment at Ren 23

and plum blossom needle treatment at the tip of tongue was applied to the treatment group while scalp acupuncture at motor area and language I, II, III area was applied to the control group, 30 days as a treatment course. The therapeutic effect was observed after 1 treatment course. Results: The total effective rate in the treatment group was 97% (29/30) and curative rate was 23% (7/30), while those of the control group (21 patients) were 76% (16/21) and 5% (1/21), respectively. The effects of the two groups had significant difference (chi2 = 8. 107, P <0.05). All markers in hemorheology in the treatment group except erythrocyte sedimentation rate and erythrocyte aggregation index were significantly different before and after treatment (P < 0.01 or P < 0.05). The erythrocyte aggregation index, erythrocyte sedimentation equation K and erythrocyte sclerosis index had significant difference before and after treatment (P < 0.01 or P < 0.05). There was significant difference in blood viscosity between the treatment group and the control group (P < 0.05). Conclusion: Combination of acupuncture treatment at Ren 23 and plum blossom needle treatment at the tip of tongue has significant clinical therapeutic effect on aphasia after stroke, and the effect is better than that of the scalp acupuncture.

Wang, D.S., Lu Y.Y., Xie, R.M., & J.R. Yao. (2004). **Effect of different intensities of rehabilitation therapy on the prognosis of patients with stroke.** *Zhongguo Linchuang Kangfu, 8(22), 4410-1.*
Accession Number: EMBASE 2004429058
ABSTRACT: Aim: To study the influence of different intensities of rehabilitation therapy on the prognosis in patients with stroke during the acute period. Methods: Totally 74 patients with acute stroke were randomly assigned into treatment group (receiving intense rehabilitation therapy for six months) and control group (receiving common rehabilitation therapy for six months). All the patients were evaluated with Fugl-Meyer assessment (FMA), national institute of health stroke scale (NIHSS) and modified Barthel index (MBI) before and six months after rehabilitation training, and scales of western aphasia battery (WAB) were also assessed in patients with aphasia, and the functional recovery between the two groups were compared. Results: There were no significant differences in the scores of FMA (29.35 +/- 22.67 vs 30.26 +/- 19.19), NIHSS (8.94 +/- 3.64 vs 8.75 +/ - 4.26), MBI (23.82 +/- 13.84 vs 25.47 +/- 15.57) and WAB (60.23 +/- 18.50 vs 57.33 +/- 16.79) before treatment between the two groups (P > 0.05). There were obvious improvements in the functional recovery six months after treatment, and the scores of FMA (85.84 +/- 19.68 vs 71.59 +/- 25.21), NIHSS (2.01 +/- 0.034) vs (3.53 +/- 0.54) and MBI (88.24 +/- 17.95) vs 74.42 +/- 24.70) were significantly different between the two groups(P < 0.05), and the difference of the scores on WAB (87.74 +/- 13.9) vs 71.24 +/- 15.63) were extremely significant (P < 0.01). Conclusion: Proper intense rehabilitation may enhance the prognosis of function in patients with stroke, especially in those with aphasia.

2003

Fang, Y., Chen, X., Li, H.; Lin, J., Huang, R., & J. Zeng. (2003). **A study on additional early physiotherapy after stoke and factors affecting functional recovery.** *Clinical Rehabilitation, 17(6), 608-617.*
Accession Number: EMBASE 2003354550
ABSTRACT: Objective: To investigate whether additional early physiotherapy after stroke improved functional recovery in stroke patients. Design: A prospective, randomized, controlled study. Setting: One stroke ward and an acute stroke unit in a large teaching hospital, southern China. Subjects: Patients with first-onset stroke consecutively admitted to the stroke centre. Interventions: One group (n = 78) received additional early physiotherapy (AEP) for 45 minutes, five days a week for four weeks starting within the first week since stroke onset; the routine therapy (RT) group (n = 78) received no professional rehabilitation therapy. Main outcome measures: Glasgow Coma Scale, Mini-Mental State Examination, Fugl-Meyer Assessment of Motor Recovery, Clinical Neurological Deficit Scale and Modified Barthel Index (MBI). Results: Patients from the AEP group had a high drop-out rate (n = 28), but those remaining made relatively better

functional recovery at 30 days than those from the RT group if measured by MBI. Multiple linear regression analysis revealed that cognitive disturbance, aphasia, double incontinence, site of lesion and sensory impairment might affect functional recovery after stroke. Conclusions: Additional early physiotherapy might improve independence of patients after stroke but failed to show benefit in other aspects in our study. Cognitive disturbance, aphasia, double incontinence, site of lesion as well as sensory impairment might affect functional outcome after stroke.

2001

Carlomagno, S., Pandolfi, M., Labruna, L., Colombo, A., & C. Razzano. (2001). **Recovery from moderate aphasia in the first year poststroke: Effect of type of therapy.** *Archives of Physical Medicine & Rehabilitation, 82(8), 1073-1080.*
Accession Number: EMBASE 2001286329
ABSTRACT: Objectives: (1) To determine whether two model-based remediation programs affect writing performance in unselected subjects with moderate aphasia and whether there is consequent improvement in everyday life, and (2) to interpret the potential changes observed by recourse to a theoretical model. Design: Consecutive sample, multiple baseline, within subject crossover study. Setting: Ambulatory care units. Participants: Eight subjects with moderate aphasia from 6 to 12 months postonset. Intervention: A standardized test for reading and writing skills was given at the beginning and the end of each therapy program and one month after therapy stopped. Main Outcome Measures: Functional outcome measures were the Communicative Abilities in Daily Living (CADL) test and subtests from standardized aphasia assessment. Results: After the two programs, there was improved writing performance, which was maintained after therapy stopped. Patterns of improvement corresponded to each of the two programs. Learning transfer was observed on the CADL test and functional writing, but gains on oral language were limited. Only 1 program was effective for six of the eight patients. Conclusion: Specific rehabilitation programs aid recovery from aphasic symptoms from 6 to 12 months postonset. Individual response is linked to type of treatment. The interpretation is linked to a model-based description of aphasic symptoms and mechanisms of functional recovery. (C) 2001 by the American Congress of Rehabilitation Medicine and the American Academy of Physical Medicine and Rehabilitation. Number of References 36.

2000

Worrall, L., & E.Yiu. (2000). **Effectiveness of functional communication therapy by volunteers for people with aphasia following stroke.** *Aphasiology, 14(9), 911-924.*
Accession Number: EMBASE 2000341211
ABSTRACT: The aim of this study was to develop and evaluate a scripted modular intervention programme called Speaking Out. Speaking Out is administered by trained volunteers in the home and focuses on the everyday communicative activities of aphasic stroke patients. The experimental design used repeated measures to examine the effect of counterbalanced treatments across individual subjects and across two matched groups. One group improved significantly on the Western Aphasia Battery (WAB) after the Speaking Out programme but there were no significant differences on any of the functional communication measures. Some change to health status scales was however found. There was a significant difference on both the WAB and the ASHA Functional Assessment of Communication Skills (ASHA FACS) for the other group following the Speaking Out programme. They also demonstrated some positive changes on the health status scales following the programme. There were more significant differences on intragroup comparisons than intergroup comparisons. For group 2, the ASHA FACS and the SF-36 showed significant differences between the Speaking Out programme and the recreational programme or no treatment at all. It was concluded that long standing aphasic speakers may benefit from a 10-week functional communication therapy programme delivered by trained volunteers. Number of References 34.

Additional Aphasia and Stroke Resources:

American Speech Language Hearing Association (ASHA)
Toll Free: 800/638-8255
Email: actioncenter@asha.org
http://www.asha.org

American Stroke Association: A Division of American Heart Association
Toll Free: 888/478-7653
Email: strokeassociation@heart.org
http://www.strokeassociation.org

Aphasia Hope Foundation
Toll Free: 866/449-5804, 913/402-8306 (V)
Email: judistradinger@aphasiahope.org
http://www.aphasiahope.org

Children's Hemiplegia and Stroke Assocn. (CHASA)
Phone: 817/492-4325
Email: info437@chasa.org
http://www.hemi-kids.org

Hazel K. Goddess Fund for Stroke Research in Women
Phone: 212/713-6789
Email: info@thegoddessfund.org
http://www.thegoddessfund.org

National Aphasia Association
Toll Free: 800/922-4622, 212/267-2814 (V)
Email: naa@aphasia.org
http://www.aphasia.org

National Institute on Deafness and Other Communication Disorders (NIDCD)
Toll Free: 800/241-1044 (V), 800/241-1055 (TTD/TTY), 301/496-7243 (V)
Email: nidcdinfo@nidcd.nih.gov
http://www.nidcd.nih.gov

National Stroke Association
Toll Free: 800/787-6537, 303/649-9299 (V)
Email: info@stroke.org
http://www.stroke.org

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