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Stroke Caregiving: Two Sides to the Story

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predictive value and positive likelihood ratios associated with each of the remaining two assessment methods were calculated. **RESULTS:** At admission to hospital, no patients were considered malnourished on the basis of SGA. Thirteen patients were considered to be malnourished based on serum albumin, and 19 based on objective methods. By day 21, 9 patients were considered to be malnourished using SGA, 27 patients had an albumin value below 35 g/L and 28 patients were malnourished based on objective assessment. The sensitivity and specificity of assessment for malnutrition using serum albumin were 25% and 64%, respectively. The positive predictive value and likelihood ratio were 8% and 0.69. Using objective assessment measures, the sensitivity and specificity were 50% and 63%, respectively. The positive predictive value and likelihood ratio were 9% and 0.78. **CONCLUSIONS:** Serum albumin, when used alone or as a component of a more comprehensive nutritional assessment method, was a poor predictor of true nutritional state based on SGA, three-weeks following stroke.

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Bilateral Motor Practice Does Not Increase Motor Function in Chronic Stroke

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Introduction: More effective therapies for improving upper extremity (UE) motor function after stroke are needed. Bilateral motor practice could, theoretically, be better than unilateral practice because: 1) the UEs couple centrally into a coordinated unit when used bilaterally; 2) both hemispheres become activated during bilateral movement and may allow the intact hemisphere to activate the lesioned hemisphere; 3) there is decreased intercalary inhibition during symmetrical bilateral movement and such decreased inhibition has been associated with neuroplasticity. Recently, there has been evidence that Bilateral Arm Training with Rhythmic Auditory Cueing (BATRAC) is efficacious for promoting UE recovery in chronic stroke. We assessed the hypothesis that even greater intensity of BATRAC would result in greater UE motor gains. **Methods:** Fourteen subjects with hemiplegia from chronic stroke completed 2 weeks of BATRAC performed 2 hours and 15 minutes/day, 4 times/week, for 2 weeks. Practice consisted of moving the handles of the BATRAC trainer in alternating blocks of symmetrical (in-phase) and opposite (anti-phase) shoulder and elbow extension/flexion motions, temporally cued by a metronome set to each subject's self-selected pace. **Results:** Contrary to predictions, there was only a non-significant 1.64 (SD = 3.34) increase in UE Fugl-Meyer Assessment scores, $F(1,12) = 2.85$, $p > 0.12$, and a non-significant 1.19 seconds (SD = 3.01) slowing of performance on the Wolf Motor Function Test, $F(1,12) = 0.74$, $p > 0.40$, after BATRAC. However, subjects did report using their paretic UE more often (mean change: 0.50, SD = 0.70) during the common tasks on the Motor Activity Log, $F(1,12) = 8.01$, $p < 0.015$. **Conclusions:** Providing BATRAC in a more intense manner did not facilitate greater increases in UE function. In fact, we failed to replicate previous reports of improved UE motor function with BATRAC. The subjects in previous studies of BATRAC practiced a total of 18 hours distributed in 1-hour sessions, 3x/week, for 6 weeks. In this study the practice was the same number of hours, but in a more condensed format (2.25 hours/day, 4x/week, for 2 weeks). In conclusion, the results of this study imply that the efficacy of an intervention for UE motor impairment after stroke may only be relevant in the context of the practice schedule under which the intervention is provided and that more investigation into optimal practice schedules for rehabilitation should be conducted.

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Stroke Caregiving: Two Sides to the Story

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Background and Purpose: After a stroke, family caregivers must quickly learn how to care for stroke survivors at home. In this study, findings from the secondary aim of a NIH-funded intervention project are revealed; problems and successes that adult caregivers expressed in the first year of caring are described. **Methods and Analyses:** Trained interviewers used bi-monthly telephone interviews to collect narrative data on what did not go well and what went well in caring. Data were immediately entered into web-based forms, downloaded into QSR N 6, and analyzed using Colaizzi's rigorous method of content analysis. The results were drawn to Friedemann's framework of systemic organization. **Results:** Seventy-three participants ($n=18$ men, $n=55$ women) from northern Ohio and southern Michigan completed the study. Most were Caucasian (85%) or African Americans (12%) with 1% Hispanic and 1% American Indian. The majority were spouses (69%) and the remaining were adult children (19%) or friends (12%). Their average ages were 55 years and about half were employed (53%). There were 2455 problems and 2687 successes reported by all the caregivers during the year. Three themes emerged from the problems: being frustrated in day-to-day situations (*system maintenance* in Friedemann's terms), feeling inadequate and turning to others for help (*coherence*), and struggling and looking for "normal" in caring (*system maintenance* versus *change*). Participants also described how they dealt with their problems. For example, a women caregiver stated that she felt overwhelmed by caregiving. She felt that "things would go much better if there were three of her." Her solution was to "prioritize what needs to get done." Although caregivers often experienced problems in caring, they also experienced the other side of the story, successes. Three themes were attributed to the successes: making it through and striving for independence (*system maintenance*), doing things together and seeing accomplishments in the other (*coherence*) and reaching a new sense of normal and finding balance in life (*individuation* and *system maintenance*). Representative is the comment that one caregiver shared, "stroke and the (caring) situation have changed my outlook on life.... I can let the small things go, because they can wait." **Conclusions:** Data provided an in-depth description of the experience of caring. Healthcare professionals can help caregivers assume new behavior patterns and change to meet the responsibilities of caring. These findings can also be used to tailor interventions based on caregivers' difficult, yet rewarding, experiences.

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Dependence in Prestroke Mobility Predicts Adverse Outcomes in Elderly Acute Ischemic Stroke Patients

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Background: Stroke survivors are commonly dependent in activities of daily living, however the relationship between pre-stroke mobility impairment and post-stroke outcomes remains poorly understood. The purpose of this study was to: 1) describe patients with pre-stroke mobility impairment, 2) evaluate the association between pre-stroke mobility impairment and a plan for physical therapy (PT), and 3) evaluate the association between pre-stroke mobility impairment and outcomes. **Methods:** This is a secondary analysis of the National Stroke Project, a retrospective cohort of Medicare beneficiaries who were hospitalized in the United States with an acute ischemic stroke (1998–2001). We included patients ≥ 65 years of age. Multivariate logistic regression was used to examine the adjusted association of pre-stroke mobility impairment with a PT plan, in-hospital death, discharge mobility status, and discharge to a skilled nursing facility (SNF). **Results:** Among the 67,445 patients, the age ranged from 65 to 94 (median 78) years, 57% were women, 78% were white, 68% were independent in pre-stroke mobility, 26% required assistance, and 6% were dependent in pre-stroke mobility. Patients who were dependent in pre-stroke mobility were often elderly, white women, with multiple co-morbidities (e.g., prior stroke) admitted to the hospital from home. The factors independently associated with a PT plan included: increasing age, female gender, black race, increasing stroke severity, increasing co-morbidity, and admittance to the hospital from a setting other than home. Pre-stroke mobility impairment was independently associated with a reduced likelihood of having a plan for PT (OR 0.80, 95%CI 0.74–0.86). Pre-stroke mobility dependence was strongly associated with post-stroke mobility impairment (OR 9.9, 95%CI 9.1–10.8), in-hospital death (OR 2.4, 95%CI 2.2–2.7), and discharge to a SNF (OR 3.5, 95%CI 3.3–3.8), after adjustment for the factors that were associated with these outcomes (e.g., age, sex, comorbidity, admission residence, and stroke severity). **Conclusions:** This study is the largest, racially and geographically diverse, investigation demonstrating the importance of pre-stroke mobility impairment and its association with adverse outcomes among elderly stroke patients. Unfortunately, patients with pre-stroke mobility impairment were less likely to receive a plan for PT in this cohort. Clinicians should screen patients for pre-stroke mobility impairment to identify patients at greatest risk for adverse events. Future studies should elucidate the mechanisms by which pre-stroke mobility impairments acts to impair recovery and should evaluate interventions to reduce the burden of pre-stroke mobility impairment.

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A Systematic Review of Therapeutic Interventions for Dysphagia Poststroke

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Despite the perceived association between dysphagia treatment and a reduction of serious complications including aspiration pneumonia, there is very little evidence to support the use of many of the therapies used to treat dysphagia. Using multiple databases to search for relevant studies, we conducted a systematic review of all randomized controlled trials (RCTs) published between the years 1970 and 2005 evaluating the efficacy of the treatments associated with dysphagia therapy. The inclusion of studies was restricted to those in which the entire study sample was comprised of patients recovering from stroke and who received treatment initiated at any point following stroke. Thirteen articles were retrieved assessing a broad range of treatments, most provided within the first several weeks post stroke: texture-modified diets ($n=4$), dysphagia therapy programs ($n=2$), non-oral (enteral) feeding ($n=2$), medications, including antihypertension agents and levodopa or its agonists ($n=3$), thermal stimulation ($n=1$) and biofeedback therapy ($n=1$). Study sample sizes ranged from 7 to 859. Since the interventions and outcomes assessed were so diverse, results are reported based on the most frequently cited clinically relevant outcomes including: aspiration/chest infection ($n=6$), mortality ($n=5$), death or dependency ($n=2$) and malnutrition ($n=2$). Only three of the thirteen identified trials reported statistically significant between group differences on at least one of the four outcomes of interest. Two trials, one evaluating texture modified diets, and the other feeding tubes reported a reduced incidence of pneumonia among patients randomized to the treatment arm of the study. One trial, comparing nasogastric (NG) feeding with gastrostomy feeding tubes, reported that the incidence of both death and malnutrition was greater among patients randomized to NG tube group. Finally, a single trial assessing three types of dysphagia swallowing programs reported that the frequency of death or institutionalization was lower among patients randomized to the most intensive therapy group. While dysphagia is known to be a common and potentially serious complication of stroke, there is a dearth of evidence to support the effectiveness of many commonly used treatments. There is a clear and pressing need for quality research in the area of dysphagia management post stroke.

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Therapy Utilization and Race Following Hospitalization for Ischemic Stroke

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Introduction: Previous studies suggest that blacks are less likely than whites to receive inpatient rehabilitation after stroke. This may be offset by greater utilization of outpatient resources, however studies investigating racial differences for utilization of outpatient therapy after stroke are lacking. We assessed the hypothesis that blacks were less likely than whites to receive occupational (OT) or physical (PT) therapy, regardless of therapy setting, after acute care hospitalization for ischemic stroke (IS). **Methods:** This study enrolled patients immediately following IS and followed them at 3 months. Co-factors included age, baseline stroke severity as measured by a retrospective NIH Stroke Scale (rNIHSS), and baseline modified Rankin (mRS, 0–2 vs. 3–5). Logistic regression was used to obtain odds ratios (OR) and 95% confidence intervals (CI). **Results:** From 1/6/2005 to 1/20/2006, 502 patients with IS during year 2005