CT scan results were coded for 18 locations of the brain. Anterior damage was noted in 49% of those belted subjects and 51% of all unbelted subjects experiencing brain damage to the frontal lobes. As such, CT scan reports were analyzed for presence of posterior lesions (parietal and occipital lobes). Chi square analysis revealed a significant effect of seatbelt usage on posterior cortex damage ($X^2 = 7.25, p < .007$); subjects not wearing seatbelts were significantly more likely to sustain damage in the posterior cortex. Two-tailed t-tests revealed significant effects of seatbelt use on the presence of “Midbrain” (hypothalamus-thalamus region, basal ganglia and internal capsule) damage ($F = 4.44, p < .001$) and “Subcortical” (“Midbrain” structures, fourth ventricle, cerebellum, and pons/medulla) damage ($F = 2.45, p < .001$). Belted occupants in a motor vehicle accident were significantly more likely to sustain damage in these regions.

The results of this study support the notion that location and initial severity of brain injury can be affected by the utilization of a passenger restraint system during an MVA. These results fit the model developed in the auto engineering field, which stress an increased average displacement of the unbelted passenger during a MVA; unbelted subjects were more likely to have damage in the posterior cerebral cortex. In addition, the higher incidence of positive subcortical CT findings in belted occupants provide evidence for axonal shearing secondary to head (but not torso) displacement.

Holda, B. A., Zillmer, E. A., & Weiss, B.

*Sports Related Concussions in Spring-Board Diving.*

The present study examines the neuropsychological effects of repeated spring-board diving. It was hypothesized that the impact velocity, up to 30 mph from the 3-meter board, and accompanying deceleration that divers experience may effect their cognitive function. Six varsity NCAA Division 1 divers participated in the study. All were administered an extended neuropsychological battery for purposes of establishing a baseline. Each diver performed a total of 50 practice dives from either the 3-meter or 1-meter spring-boards. After each set of 10 dives, the subjects were immediately assessed at pool-side using a neuropsychological screen. Baseline neuropsychological test results revealed average to above average cognitive functioning for all six divers with relative strengths on neuropsychological procedures: tapping proprioception, eye-hand coordination, and processing speed. Pool-side neuropsychological assessment of complex attention indicated practice effects over the five series of tests, which was similar to an age and IQ matched control group. Current findings indicate no detectable chronic or acute neuropsychological deficits among competitive divers. Results suggested that skilled diving at the collegiate level is a safe sport and that water presents the perfect medium for gradual deceleration. More studies, however, are warranted for 5-, 7.5-, and 10-meter platform diving where the impact velocity is higher. Using elite divers in future research may also be important, because they are likely to have accumulated more dives from the 10-meter tower.

Iverson, G. L., & Green, P.

*Validation of the Computerized Assessment of Response Bias in Litigating Patients with Head Injuries.*

The detection of malingering in neuropsychological assessment requires valid measures of incomplete effort. The Computerized Assessment of Response Bias (CARB) is a digit recognition procedure designed to detect poor effort during a neuropsychological evaluation. We examined the CARB performance of a consecutive series of litigating patients ($N = 119$) with a full range of head injury severity, from trivial to severe. Patients with trivial or mild head injuries performed more poorly than patients with frank brain injuries. Specifically, 29% of this group scored more than two standard deviations below the average score for the
patients with moderate to severe traumatic brain injuries. Consistent with previous research, we found that the patients with the least severe injuries are the most likely to provide poor effort on neuropsychological measures of biased responding.

**Jacobucci, G., Bowman, M., Shercliffe, R., & Zrnich, S.**

*Severity of Traumatic Brain Injury and the WAIS-R.*

WAIS-R profiles of 492 closed head injured workers were examined. Trauma severity was measured in terms of biomedical descriptors (i.e., loss of consciousness, post-traumatic amnesia). Across three levels of trauma severity, there were no significant differences in IQ scores or in any WAIS-R subscale scores. In addition, profiles in all three trauma severity groups were essentially flat. Explanations for these results are considered. In particular, it appears that the PIQ > VIQ norm found in normal groups with limited education must be taken into account when interpreting the post-injury Performance to Verbal ratio among workers in primarily manual jobs.

**Jacobucci, G., Bowman, M., & Shercliffe, R.**

*A Comparison of Two Strategies for Interpreting the MMPI-2 with TBI Patients.*

The purpose of this study was to compare two strategies for interpreting the MMPI-2 with Traumatic Brain Injury (TBI) patients. Gass (1991) reported differentiating between TBI and normal participants on the basis of their endorsement rates of items that he collectively described as a correction factor. In the present study, MMPI-2 items from Gass's correction factor were summed into correction factor scores for TBI participants (*n* = 48), injured (but not head injured) participants (INJ; *n* = 50), and normal participants (*n* = 47). Using the Gass correction factor score as the dependent variable, an omnibus ANOVA was significant at the .05 level. One-way ANOVAs yielded a significant difference between the TBI and normal groups but no significant difference between the TBI and INJ groups. A discriminant function analysis yielded two functions that accounted for 55 percent and 44 percent of the between-group variability. The discriminant functions correctly classified 109 (75%) of the 147 individuals in the sample. These results were virtually identical to the pattern of results obtained when the same analyses were conducted using the MMPI-2 content scale (Jacobucci & Bowman, 1997) created to clarify which TBI sequelae are suffered by individual patients. The usefulness of correction factors versus more specialized MMPI-2 scales for this population are discussed.

**Johnson, D. J., & Schwankhaus, J.**

*Neurobehavioral Differences Between Cerebral, Cerebellar, and Non-CNS Patients.*

Much of our current understanding of the behavioral functions of different parts of the nervous system has been derived from lesion studies in humans and animals. It has been postulated that different cerebellar regions modulate behavioral and even cognitive activity. This review of the clinical and experimental evidence raises the possibility of a cerebellar modulation of the function of the higher nervous system and behavior.

In this project, the neurobehavioral status of a sample of 20 Friedreich's Ataxia patients was compared with 20 General Neurologic (Non-CVA) and 20 Orthopedic patients using the Behavior Change Inventory, which is a validated scale with 16 behavioral clusters, to assess pre-post behavioral changes with neurologic disease/insult.

Behavioral cluster analysis compared with all patients from each group indicated cerebellar affected Ataxia patients had more: Introversion, Apprehension, Agitation, Rumination, Social Distance, and Temperamentality. General neurologic patients had more: Depression, Distraictibility, Fatigue, Contentment, Hostility, and less: Affability and Emotional Control.