Research Objectives: To examine relative CBF (rCBF) with Arterial Spin Labeling in youth 1 week and 6 weeks post-SRC in comparison to uninjured peers.
Design: Case-Control Study.
Setting: Research institute.
Participants: Fifteen athletes, ages 13 - 17, with diagnosed SRC evaluated approximately 1 week (Mean 8.8 days) and 6 weeks (Mean 43.2 days) post-injury and fifteen age- and sex-matched never-concussed athletes evaluated at a single time-point.
Interventions: N/A.
Main Outcome Measure(s): rCBF values from 2 Regions of Interest (ROI): Left Dorsal Anterior Cingulate Cortex (ACC) and Left Insula. ROIs were selected based on cluster-level findings (FWE-corrected) from whole-brain contrasts completed in SPM 12.
Results: One week post-injury, the SRC group had significantly higher rCBF in Left Dorsal ACC, p = .003, and Left Insula, p = .01. Six weeks post-injury, the SRC group had significantly higher rCBF in Left Dorsal ACC, p = .01, but not in Left Insula, p = .09. Although age was positively associated with relative CBF in Left Insula in controls and Left Dorsal ACC in the SRC group, when between group analyses were repeated to control for age, the reported group differences in rCBF were unchanged.
Conclusions: Altered cerebral blood flow (CBF) may be a neurological marker of sports-related concussion (SRC), but change in CBF in youth with SRC has not been well examined. In a pilot cohort of adolescent athletes with SRC, we observed regions of increased rCBF at 1 and 6 weeks post-injury. This is in contrast to prior work in young adults showing decreased rCBF after SRC. Future work should replicate these analyses in a larger cohort and determine how CBF alterations after SRC vary with age and their association with SRC-related symptoms and functional outcomes.
Key Words: Cerebrovascular Circulation, Brain Concussion, Adolescent
Disclosures: None disclosed.

Oral Presentation 310443
Health Service Needs for Children With Disabilities on Supplemental Security Income
Amy Houtrow (University of Pittsburgh Medical Center), Adam Carle, Ruth Stein, James Perrin
Research Objectives: To compare health services and needs for children with disabilities on SSI with children with other special health care needs.
Design: Secondary analysis of the 2009/10 National Survey of Children with Special Health Care Needs (NS-CSHCN) was conducted (N=40,242). CSHCN were divided into 2 groups for comparison. Unadjusted odds were calculated to demonstrate statistically significant differences.
Setting: Nationally representative sample of CSHCN.
Participants: CSHCN on SSI (N=2,306) and CSHCN not on SSI (N=37,202).
Interventions: None.
Main Outcome Measure(s): Need for health services, care in the medical home.
Results: CSHCN on SSI were more likely to be older (OR=1.2) and black non-Hispanic (OR=2.5), Hispanic (OR=1.6) and other race (OR=1.7) than CSHCN not on SSI (p values < 0.05 for all). Relative to CSHCN not on SSI, CSHCN on SSI were more likely to need physical, occupational or speech therapy; mental health care; home health care; substance abuse treatment; mobility aids; communication devices; durable medical equipment; vision care/devices; and hearing aids/devices. Relative to CSHCN not on SSI, CSHCN on SSI had higher odds of receiving care coordination when needed (OR=2.1) but lower odds of all other measures of the medical home: usual source of care (OR=.7), personal doctor or nurse (OR=.7), family-centered care (OR=.6), specialty referrals if need (OR=.7), (p values < 0.05 for all).
Conclusions: CSHCN on SSI were more commonly from sociodemographically disadvantaged backgrounds with extensive health service needs compared to other CSHCN. Unfortunately, CSHCN on SSI were less likely to meet 4 of the 5 metrics of the medical home which is considered the standard of care for all children. The known health disparities and the high identified health care needs, coupled with inadequate access to the medical home, make CSHCN on SSI particularly vulnerable.
Key Words: Disability, Supplemental Security Income, Medical Home
Disclosures: None disclosed.
Oral Presentation 310530
Comparative Effectiveness of TBI Inpatient Rehabilitation Interventions: Impact of Advanced Therapy
Jennifer Bogner (Ohio State University Department of Physical Medicine and Rehabilitation)
Research Objectives: To evaluate the effectiveness of increasing the percentage of time spent in treatment targeting advanced, higher-level functions (rather than more basic functions), regardless of initial level of impairment.
Design: Mimic a randomized controlled trial using propensity score methods to control for confounders (injury severity, impairment and other) using data from a multicenter, prospective, observational study. Outcomes were measured at discharge, and 3 and 9 months post.
Setting: Inpatient rehabilitation.
Participants: 1843 persons who received inpatient rehabilitation for TBI.
Interventions: The effects of increasing the percentage of rehabilitation spent in Advanced Therapy were evaluated. Advanced Therapy is treatment that targets "higher level" functions, which include instrumental activities of daily living, executive functions, independent use of compensatory strategies with complex tasks, and (in treatments for mobility and movement), the ability to manage unintended perturbation and skilled learning. The management of challenges within a changing environment, including distractions and physical barriers, are included in this definition.
Main Outcome Measure(s): Participation Assessment with Recombined Tools-Objective, FIM, Satisfaction with Life Scale, Patient Health Questionnaire-9.
Results: Controlling for measured confounders, preliminary findings suggest that increasing the percentage of Advanced Therapy results in better functional independence in both the motor and cognitive realm at discharge, 3 and 9 months post-discharge. Persons who received more time in Advanced Therapy also reported better community participation than persons who received a lesser percentage of time in Advanced Therapy.
Conclusions: Contrary to traditional sequential approaches to rehabilitation, patients with TBI may show greater benefit when treatment targets functions at the highest level, regardless of current level of functioning. The results of additional analyses on the effects of Advanced Therapy on a subgroup of persons with the greatest impairment will also be presented.
Key Words: Rehabilitation, Traumatic Brain Injury, Community Integration
Disclosures: None disclosed.
Oral Presentation 310565
Predicting Gains From Aphasia Rehabilitation Using Measures of Language and Cognition
Jeffrey Johnson (Boston University), Erin Meier, Natalie Gilmore, Carrie Des Roches, Swathi Kiran
Research Objectives: To investigate how participants’ baseline cognitive-linguistic abilities predict language therapy outcomes.
Design: Retrospective analysis of multiple baseline treatment data.
Setting: University clinic.
Participants: Sixty-four persons with aphasia (PWA) completed one of four aphasia treatment studies. Participants (males=41) were 26-86 years old (mean=60.07; SD=12.63) and averaged 49.31 months post onset of aphasia (MPO; range=5-167 months).
Interventions: One treatment targeted sentence comprehension (n=27 PWA) and three treatments targeted naming via a semantic feature