occupational risk of LLB and two-way interactions of these exposures were estimated using logistic regression.
Results: Single and repeated HLB (vs. no HLB) were associated with elevated odds of all newly reported symptoms. Repeated HLB was associated with greater risk than single HLB for all 14 recent symptoms and 5 persistent symptoms (i.e., headaches, fatigue, forgetfulness, confusion, and night sweats). Occupational risk of LLB was associated with 4 recent symptoms (e.g., ringing in the ears) and 8 persistent symptoms (e.g., confusion, forgetfulness). Significant interactions of repeated (vs. no) HLB and LLB emerged for both recent and persistent headaches.
Discussion: This research suggests that blast exposure (including HLB and LLB) is associated with recent and persistent subclinical symptomatology.
Disclaimer: Rudolph Rull and Daniel Trone are employees of the U.S. Government. This work was prepared as part of their official duties.

105 Reading in college students with mild traumatic brain injury

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ABSTRACT

One in seventy-five college students sustains at least one mild traumatic brain injury (mTBI) each academic year. Individuals with TBI, including mTBI, tend to have difficulties with passage comprehension and reading rate, along with reporting reading to be effortful. As reading is fundamental to students' academic success, contributors to reading difficulties should be better understood to support student learning after injury. Limited studies have examined changes in socio-emotional processing toward reading following TBI, despite close relationships between actual reading performance and self-efficacy, motivation, and self-regulation. Therefore, the current study examined reading self-efficacy sources, reading habits, and associations between reading self-efficacy and reading performance in college students with and without mTBI. We distributed a survey that included consent, eligibility, a reading habits inventory, the College and University Student Reading Self-Efficacy Scale, the Post-Concussion Symptom Scale, the Convergence Insufficiency Symptoms Survey, and the College Academic Self-Efficacy Scale to college students. A subset of survey participants agreed to also complete the Nelson Denny Reading Comprehension Test. We received 1587 eligible responses from neurotypical students and 229 from students with mTBI. Background characteristics, including age, sex proportion, ethnicity composition, class standing, and current GPA were balanced between students with and without mTBI. Most participants sustained a mTBI from sport and recreation related activities (n = 122), followed by fall (n = 44), motor vehicle accidents (n = 30), and hit (n = 29). About 36% had sustained multiple mTBIs, and 30% reported loss of consciousness. Most participants were over 3 months post injury, with the mean time post onset being 4.8 years. There were no differences in daily reading habits between groups, where students were more likely to read e-mails, texts, and social media on a daily basis, followed by assignments and lecture notes. Students usually read fiction and nonfiction novels using physical copies and complete other types of reading activities on a screen. Despite similar needs for daily reading and reading for school, students with mTBI showed lower reading self-efficacy than neurotypical students ($p = 0.005$). When subscale scores were examined, students with mTBI tended to feel less enjoyment ($F(1,1813) = 11.56$, $p < 0.001$) and report more physiological symptoms ($F(1,1813) = 29.97$, $p < 0.001$) in reading. Overall current concussion symptom severity ($\beta = -0.33$, $p < 0.001$, $R2 = 0.10$) and convergence insufficiency symptoms ($\beta = -0.49$, $p < 0.001$, $R2 = 0.24$) were negatively associated with reading self-efficacy of students with mTBI. In contrast, reading self-efficacy was positively correlated with age ($\beta = 0.14$, $p = 0.03$) and general academic self-efficacy ($\beta = 0.16$, $p = 0.02$). Lastly, reading self-efficacy demonstrated strong and positive correlations with general reading ability ($\beta = 0.74$, $p = 0.009$, $R2 = 0.50$), vocabulary ($\beta = 0.65$, $p = 0.03$, $R2 = 0.35$), and text-level reading rate ($\beta = 0.67$, $p = 0.02$, $R2 = 0.39$). Results suggest that concussion symptoms, especially oculomotor disruptions, may trigger changes in reading self-efficacy post-mTBI. Decreased reading self-efficacy may further affect reading performance and attitudes toward reading, even in those with remote history of mTBI.

106 Ballistic resistance training improves mobility more than usual physiotherapy intervention following traumatic brain injury: a randomized trial

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ABSTRACT

Background: Ballistic resistance training, targeted to the primary lower-limb muscle groups responsible for forward propulsion, implemented in accordance with the American College of Sports Medicine guidelines for resistance training, is a promising new intervention for people with mobility limitations.
Aim: To determine, in people recovering from traumatic brain injury (TBI), is a 3-month ballistic resistance training program targeting three lower-limb muscle groups more effective than usual physiotherapy care for improving mobility?
Design: A prospective, multi-center, randomized controlled trial conducted according to the CONSORT guidelines. Trial registration: ACTRN12611001098921.