

measures of SF, and a neurocognitive battery. Healthy controls complete MRI only. Differences in cortical thickness (CTh) and gray matter volume (GMV) in regions of interest between FEP and controls will be determined with ANCOVA. Multiple linear regression will be used to determine the relationship between neural substrate and SF in FEP. Linear mixed models will be used to examine the relationship between change in CTh and GMV and change in SF. Data collection is ongoing for this study. RESULTS/ANTICIPATED RESULTS: In preliminary data including 12 FEP and 9 healthy controls, FEP demonstrated cortical loss in the right superior frontal cortex and the right isthmus-posterior cingulate. Greater cortical thickness in the posterior cingulate cortex was associated with better social functioning across multiple measures when controlling for global cognition. Gray matter volume in the parahippocampal gyrus was also associated with better social functioning. Preliminary results evaluating whether targeted cognitive training is neuroprotective in these regions of interest in a manner that is associated with improved social functioning will also be presented. DISCUSSION/SIGNIFICANCE OF IMPACT: Preliminary results link the posterior cingulate and parahippocampal gyrus to SF in FEP. Further research will investigate the contribution of changes in these brain regions to improved SF. The identification of biological treatment targets for SF may lead to development and optimization of novel interventions to alleviate SF deficits in FEP.

#### 4314

#### **The Impact of Axillary Surgery on Recurrence-Free Survival in Invasive Lobular Carcinoma (ILC) of the Breast**

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OBJECTIVES/GOALS: Clinical trials demonstrate that axillary lymph node dissection (ALND) is unnecessary for most breast cancer patients with 1-3 involved nodes, but whether this is true for those with ILC is unknown. We evaluate the impact of ALND on recurrence-free survival (RFS) in ILC and 1-3 positive nodes. METHODS/STUDY POPULATION: We performed a retrospective cross-sectional analysis of patients with ILC treated between 1992-2019 at our institution. All patients received either sentinel lymph node biopsy (SLNB) or ALND and underwent either breast conservation surgery (BCS) or mastectomy. The primary outcome was RFS, defined as the absence of locoregional or distant recurrence. RESULTS/ANTICIPATED RESULTS: Of 496 cases, 250 (50.4%) underwent BCS, and 246 (49.6%) underwent mastectomy. A total of 93% of patients were hormone receptor positive, and 89% had low or intermediate grade disease. Among patients with 1-3 positive nodes, there was no significant difference in 5- and 10-year RFS based on receipt of ALND for both BCS and mastectomy cohorts. Using a multivariate model, we found no association between ALND and RFS overall (HR = 0.98, 95% CI 0.36-2.7, p>0.20) and among those with 1-3 positive nodes (HR = 0.60, 95% CI 0.12-3.4, p>0.20). DISCUSSION/SIGNIFICANCE OF IMPACT: These findings support the safety of omitting ALND in patients with ILC and 1-3 positive nodes, regardless of whether they receive BCS or mastectomy. Further studies of axillary management in ILC, including imaging tools to predict nodal involvement and response to therapy, are warranted.

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#### **The Relationship Between Tinnitus-Related Distress and PTSD Symptoms Among Post 9/11 Veterans with Posttraumatic Headache**

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OBJECTIVES/GOALS: Military personnel are at significantly greater risk for developing tinnitus, due to increased exposure to acoustic trauma. Many psychiatric disorders are common among individuals with chronic tinnitus, including posttraumatic stress disorder (PTSD). Although tinnitus and PTSD are clearly different, research supports the notion of shared mechanisms between both disorders. First, there are overlapping symptoms between tinnitus-related distress and PTSD, including irritability, distorted cognitions, persistent negative emotional states, diminished interests in activities, exaggerated startle response, sleep disturbance, concentration problems, and hypervigilance. Second, tinnitus and PTSD are highly comorbid with one another, whereas 34% of veterans with tinnitus also carry a PTSD diagnosis. Third, those with both disorders are significantly more emotionally impaired compared to those with tinnitus and any other psychiatric disorder. Lastly, neuroimaging research has shown similar regions within the auditory vigilance network are implicated among those with tinnitus, and separately, among combat PTSD patients, suggesting shared neurobiological mechanisms between both disorders. Though we are aware that tinnitus and comorbid PTSD presents as a significantly greater clinical concern, the relationship between tinnitus-related distress and PTSD symptomatology it is still unknown. Canonical correlation analyses will be conducted to examine the relationship between tinnitus-related distress and PTSD among veterans as a part of a larger clinical trial for posttraumatic headache. Results of the study will shed light on the relationship between tinnitus-related distress and PTSD, and may suggest a different phenotype for those with both disorders. Researchers and clinicians will further understand and conceptualize the relationships among the cognitive, emotional, and behavioral symptoms associated with tinnitus and PTSD, both individually and conjointly. METHODS/STUDY POPULATION: Baseline data (N = 112) from a larger clinical trial examining the effectiveness of two different psychotherapies for the alleviation of posttraumatic headache was examined. The primary aim of this project was to evaluate the relationship between tinnitus-related distress and PTSD based on the eight subscale scores of the Tinnitus Functional Index (TFI) and the four scales of the Clinician Administered PTSD Scale for the DSM-5 (CAPS-5), respectively. To address this aim, canonical correlation analysis was used where the tinnitus-related symptom subscales made up one variable set and PTSD symptom subscales made up the second variable set. First, we evaluated the overall model fit based on Wilks Lambda to determine if the two variable sets were related at the  $p < .05$  level. Next, we evaluated the canonical correlations (comparable to an eigenvalue) for each canonical dimension to determine the required number of significant canonical dimensions (or latent constructs) that were necessary to understand the association between the two variable