efficiency of study planning, and brought together various experts for studio meetings with investigators. This efficient method can improve study function and execution for early-career investigators resulting in improved study success.

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Case Series Report: The use of ultrasound in detecting neuromas in amputees with osseointegrated prostheses

Anna Vaeth, Makayla Kochhesier, Lucy Wei, Nancy Qin, Jason S. Hoellwarth, Taylor J. Reif, S. Robert Rozbruch, Paul J. Christos, Ogonna K. Nwawka and David M. Otterburn
Weill Cornell Medical College

OBJECTIVES/GOALS: Imaging neuromas, benign tumors of nerve tissue, can be difficult in amputees with osseointegrated (OI) prostheses, in which a metal rod is implanted into the residual limb. Magnetic resonance imaging can be inadequate due to the implanted metal. The aim of this study is to assess the use of ultrasound to detect neuromas in patients with OI prostheses. METHODS/STUDY POPULATION: This is a single-institutional observational study of 7 patients undergoing lower limb OI prostheses. Lower extremity nerve ultrasounds with 2-D grayscale and Doppler were completed at postoperative follow-up visits following OI prosthesis implantation. Specifically, the sciatic nerve, tibial nerve, common peroneal nerve, and sural nerve were targeted for imaging. Neuromas found on ultrasound were measured by maximal length in three planes. RESULTS/ANTICIPATED RESULTS: Our study to date includes two patients with OI prostheses. The remaining patients will be accrued by the end of December. The first patient with a left below-the-knee amputation completed imaging 3 years after OI prosthesis implantation. The common peroneal nerve showed preserved fascicular architecture and morphology, with no distinct neuroma formation. However, the sural nerve demonstrated a 6 × 5 × 4 mm neuroma with minimal pain with deep palpation. The tibial nerve demonstrated a 14 × 11 × 8 mm neuroma within the medial calf musculature, with mild pain with deep palpation. The second patient with a right above-the-knee amputation was imaged 10 months after OI prosthesis implantation. The sciatic nerve demonstrated preserved fascicular morphology and terminated in a smooth taper. There was no defined neuroma. DISCUSSION/SIGNIFICANCE OF IMPACT: In conclusion, we have preliminarily shown in the first two patients that ultrasound can successfully image neuromas in patients with OI prostheses in the postoperative period. Furthermore, despite a patient that was 3 years postoperative with two neuromas, the neuromas produced minimal to mild pain with targeted palpation.

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Characterizing raciolinguistic differences in emotion recognition for post-stroke assessment

Sarah Phillips[1] and Anna Greenwald[2]
[1]Georgetown-Howard Universities and [2]Georgetown University Medical Center

OBJECTIVES/GOALS: To create raciolinguistically sensitive emotion recognition assessment materials, we will (i) identify the prosodic cues that signal differences between raciolects (Black vs. White American English) and (ii) identify the prosodic cues that signal different emotions (angry, happy, and sad). METHODS/STUDY POPULATION: Research evaluating prosodic differences between raciolects and emotions both implicate pitch. For example, Black speakers tend to produce speech lower in pitch, and sad speech tends to be narrower in pitch range. In our study, 50 Black and 50 White American healthy adults will hear manipulated recordings of Black and White speakers uttering pseudoword strings that vary by mean pitch and pitch range. In the race task, participants will choose whether the stimulus was produced by a Black or White speaker. In the emotion task, they will choose whether the stimulus sounded happy, angry, or sad. Linear mixed-effects models will be used to determine the pitch correlates for each emotion by race. RESULTS/ANTICIPATED RESULTS: If mean pitch (high, low) and pitch range (wide, narrow) function as acoustic correlates for emotions but differ by race, we expect the following: first, members in each participant group (Black, White) will converge on correlates that differentiate emotions and race; and second, the emotion correlates will differ between groups. Preliminary results using stimuli from only White speakers suggest convergence across groups for emotions (angry: low mean pitch, happy: high mean pitch, and sad: narrow pitch range) but not race. Ongoing data collection including stimuli from White and Black speakers will be used to conduct planned comparisons as well as test same-race, different-race differences. DISCUSSION/SIGNIFICANCE OF IMPACT: Characterizing the prosodic differences in emotion recognition between races helps us understand disparities in post-stroke aprosodia. Additionally, developing a linguistically informed strategy for assessing deficits between dialects can be readily implemented across diverse linguistic communities.

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Translational science must connect the dots from output to impact

Marisha Palm[1], Claudio Galea[2] and Debra Lerner[3]
[1]Tufts; [2]Northwell Health and [3]Tufts University

OBJECTIVES/GOALS: Despite efforts to support healthcare researchers to navigate translational gaps and achieve health impact, impact remains rare. We were interested in determining whether, when, and how researchers were taking actions to optimize the translational potential and impact of their research. We also wanted to identify ways to support optimization. METHODS/STUDY POPULATION: Our sample was drawn from Tufts CTSI's annual outcomes survey respondents (2017–2022) and included tufts principal investigators who had at least one project that reported an outcome (e.g., publication, presentation, funding application, research products, intellectual property protection, and implementation) on the survey. We excluded individuals no longer based at Tufts, no longer working in research, and holding a non-leadership role in their research. We drew a random sample of 58 researchers from the database. Of these, 11 (19%) were excluded, 32 (55%) did not respond to our invitation, 3 (5%) declined to take part, and 12 (21%) were interviewed. The study was approved by Tufts IRB and semi-structured interviews were recorded via Zoom, transcribed in full, and analyzed using the qualitative software Dedoose. RESULTS/ANTICIPATED RESULTS: We interviewed 12 participants, both male (5) and female (7), from 11 different fields, working in preclinical (2), clinical (6), and public health (4) research at assistant (3), associate (5), and full professor (4) rank. There was variety in the way that researchers conceptualized and anticipated pathways to

https://doi.org/10.1017/cts.2024.787