# Assessing Amputee Perspectives and Concerns on Participation in Neuroprosthesis Research: An Interview Study

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## Motivation

Major disparities in amputation rates exist along demographic lines

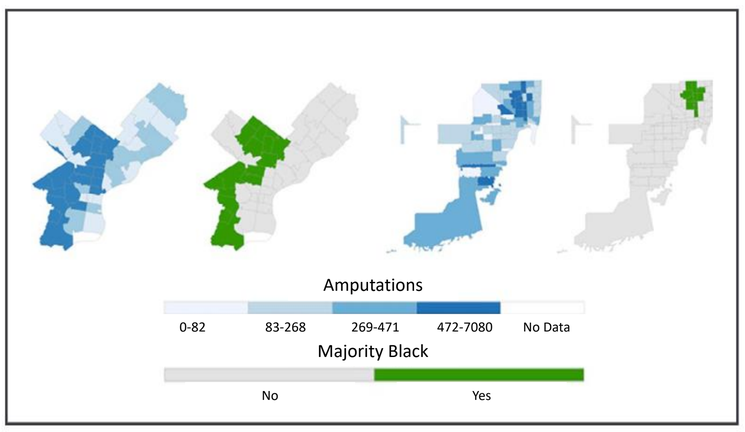



**Figure 1**: Racial demographics and amputation rates in regions of two U.S. metropolitan areas. (From Fanaroff et al. 2021)

Amputation demographics are not reflected in somatosensory neuro-prosthesis research

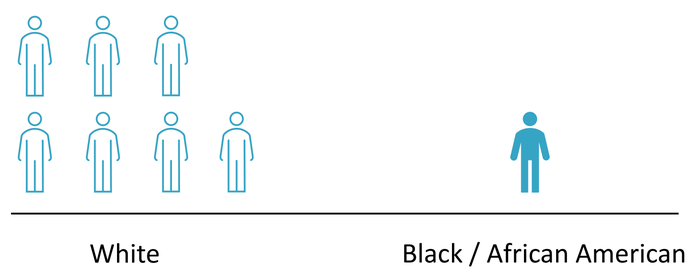



**Figure 2**: Demographic data from enrollment in one spinal cord stimulation sensory feedback study of lower-limb amputees. Non-white racial groups are highly under-represented.

Underrepresentation can lead to:

- Technology developed without the input of affected communities
- Oversight on which features are most beneficial/ harmful
- Reproduction of existing inequities and power structures
- Technology development leaving behind the people who could benefit most

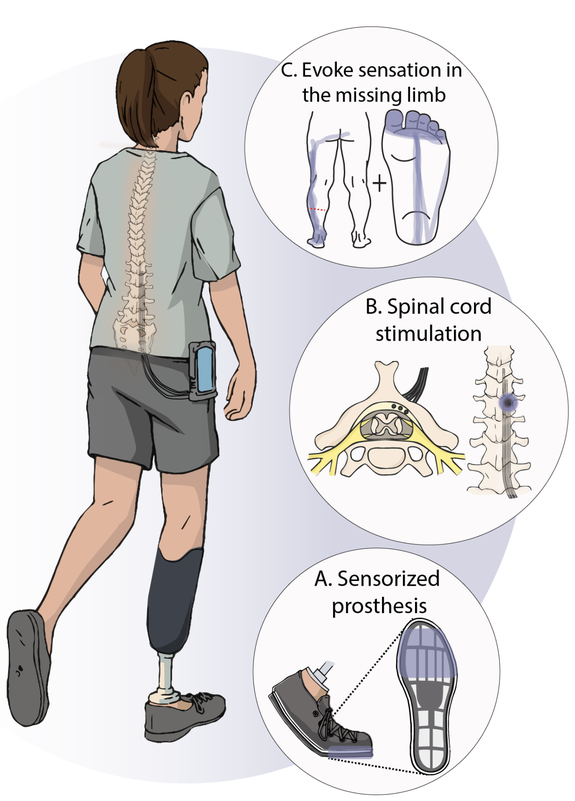
## How do underserved amputee populations understand and engage with neurotechnology and research?

## Approach

Semi-structured interviews with lower-limb amputees who are eligible for or undergoing spinal cord stimulat-ion for a research study on sensory neuroprostheses

Survey Instrument topics:

- Experiences with amputation and prosthetic use
- Prosthetic wants
- **Perceptions of research**
- Familiarity with neurotechnology
- **Perceptions of spinal cord stimulation**




Participants will be given an overview of the proposed technology and asked to reflect on their thoughts, feelings, concerns, and potential engagement with such a technology

**Figure 3**: Overview of proposed spinal-cord-stimulation-based neurotechnology. (From Nanivadekar et al. 2022)

## Anticipated Themes


## Intended Outcomes

Inform future neuroprosthesis research
Better outreach/ engagement with community
Improve communication with prospective subjects