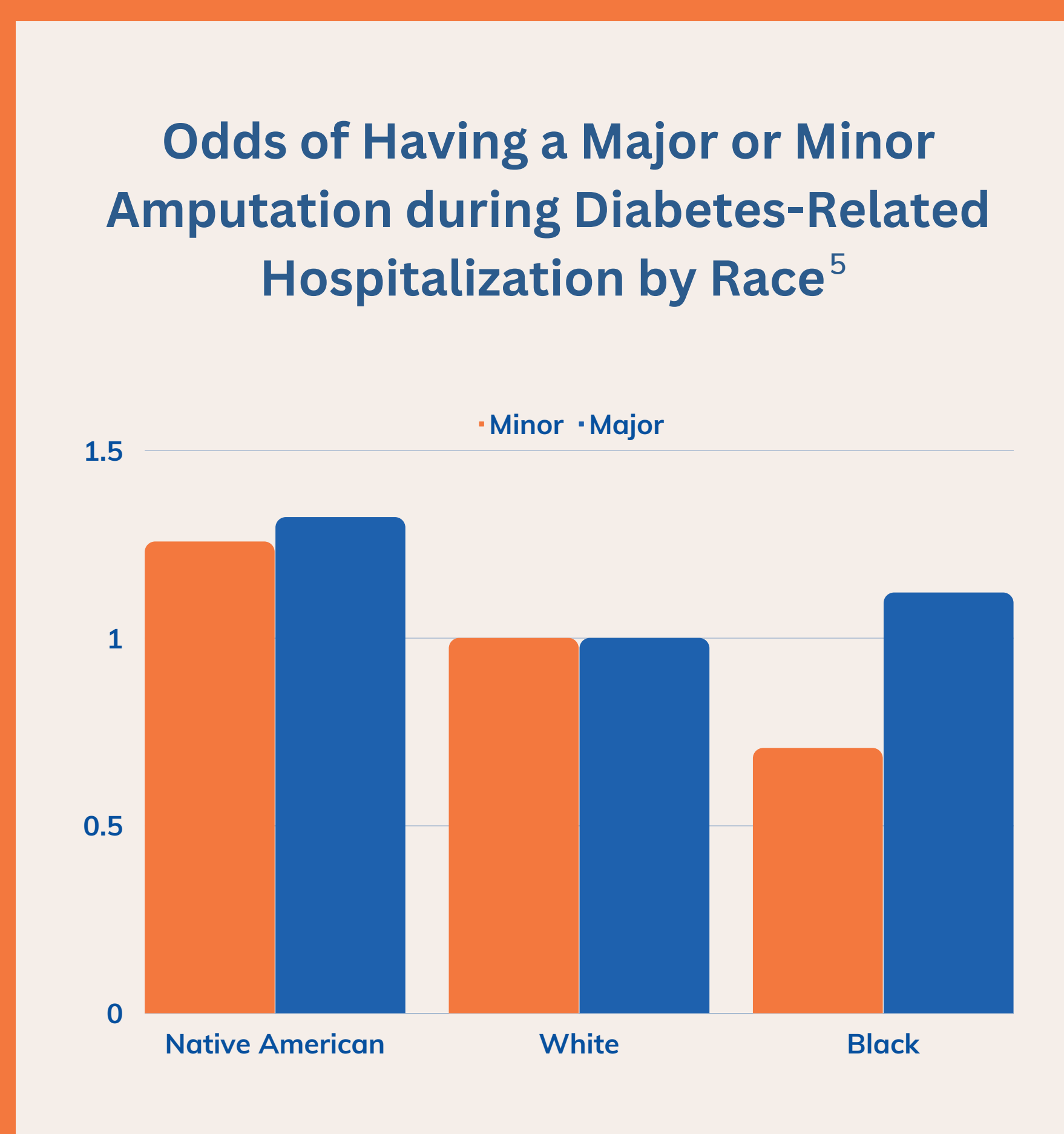


Inequities in Amputation Rates Among American Indians & Alaska Natives

Morgan O'Loughlin

Introduction

Amputation, the removal of all or part of a limb, is linked to higher mortality and a lower quality of life.¹ Non-traumatic amputations are preventable with early detection and regulation of modifiable risk factors.^{2,3} Previous studies have shown that American Indians and Alaska Natives (AI/AN) have significantly higher rates of lower extremity amputation than other groups.⁴⁻⁸ Less is known about the underlying factors that contribute to these disparities.



Background

- Lower-limb amputations are increasing in the US^{2,3}
 - 80% are associated with uncontrolled diabetes²
- The majority of amputations are preventable^{2,3}
- Globally, minority groups tend to experience a greater incidence of amputation⁹
- AI/AN may be 2-5x more likely to undergo amputation compared to other groups⁴⁻⁸
- AI/AN have highest risk of Type 2 diabetes¹⁰

Methodology

Current literature was reviewed using PubMed and Google Scholar databases to identify relevant research articles. Citation mining was then used on these articles to find additional sources. Search parameters included:

- Published between 2013-2023
- With primary or secondary aim of investigating differences in rates of non-traumatic lower extremity amputation by race, and specifically among Native American populations
- Study types included: cross-sectional, cohort, and case-control studies

PubMed search strategy: (amputation OR limb salvage OR limb loss) AND (Native Americans OR American Indians OR Alaska Natives OR Indigenous Americans) AND (disparities OR inequities)

Other keywords: amputation, limb salvage, limb loss, Native Americans, American Indians, Alaska Natives, Indigenous Americans



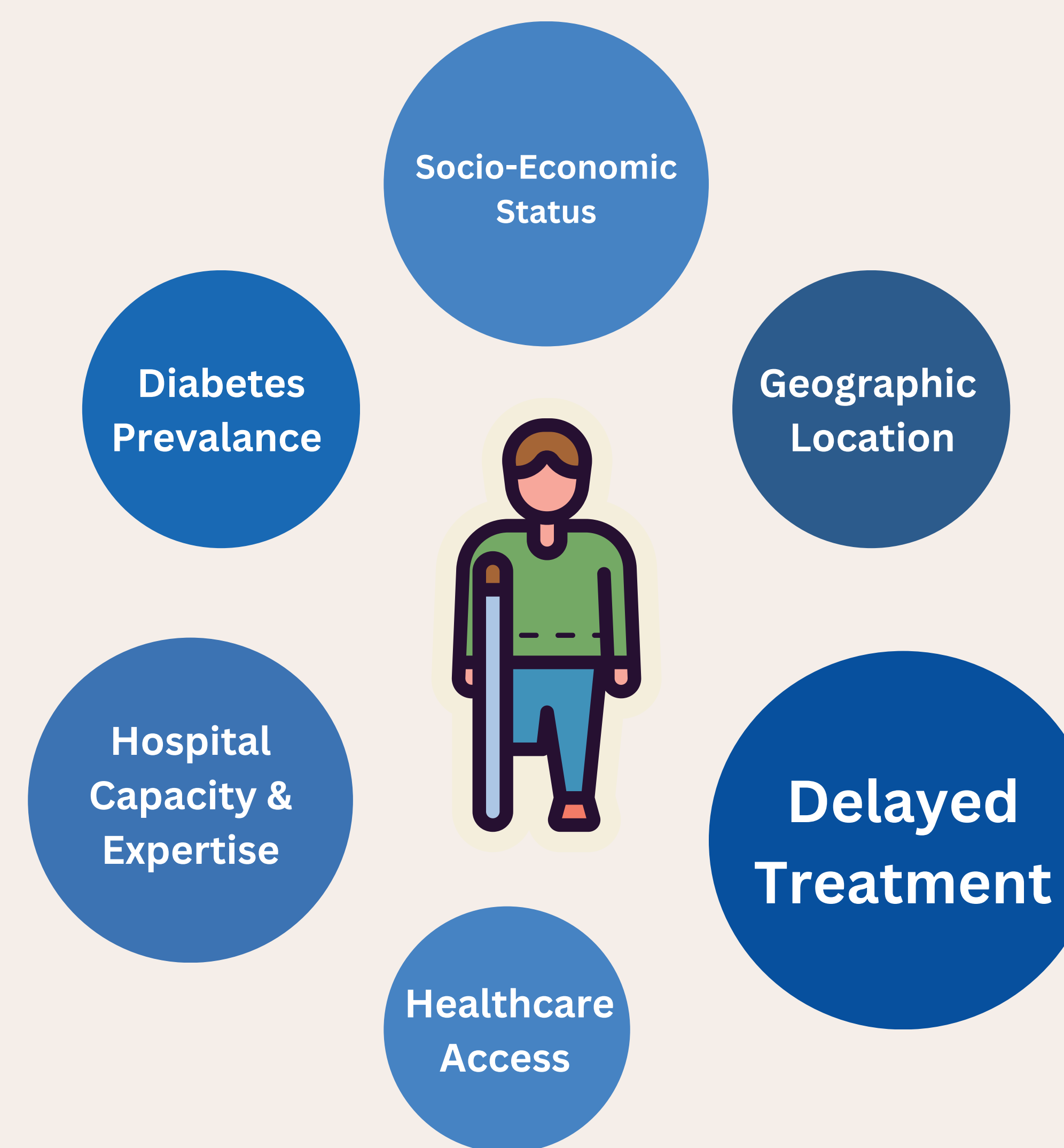
Objective To summarize currently known causes of disparities in amputation rates among American Indians and Alaska Natives.

Results

Summary of Findings

Total studies found: 8

Several themes associated with risk of amputation among AI/AN were found in the literature review



- Diabetes prevalence^{3,4}
- Severity/delayed treatment^{3,5-7}
- Capacity/expertise of local hospitals³⁻⁵
- Socioeconomic status^{3,4,7}
- Healthcare access¹⁰
- Rurality^{4,5}

Gaps

In many studies, researchers found interesting outcomes that may warrant future study. For example:

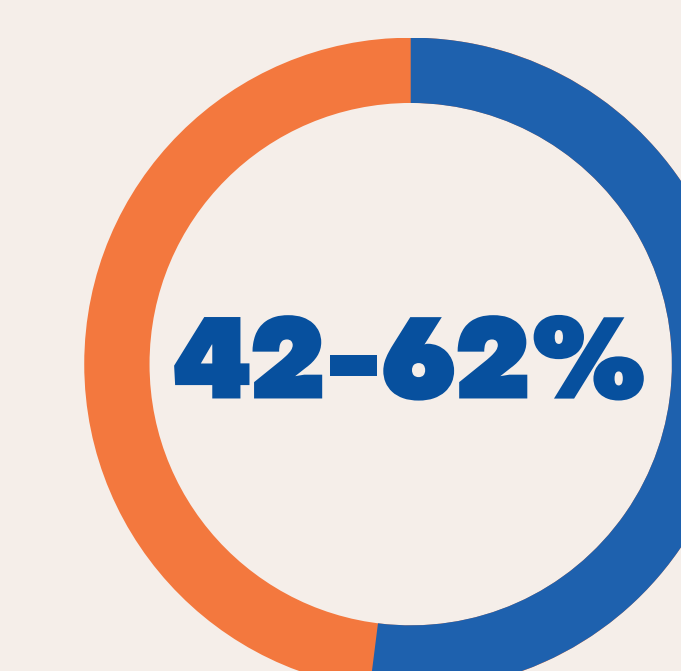
In conflicting outcomes, researchers in one study found that despite having the highest amputation incidence, AI/AN patients were the **most likely** to perform **daily foot inspections** as a preventative measure.¹¹



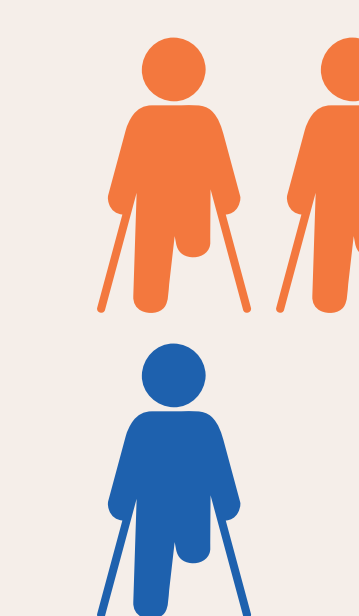
In one study, AI/AN patients were the racial/ethnic group **least likely** to receive any attempt at limb salvage. The reasons for this were unclear.⁸

7.9% total patients
5.9% AI/AN patients

In another study, researchers found that adjusting for **sociodemographic characteristics, patient comorbidities/risk factors, and hospital characteristics** only explained **42-62%** of the disparity in amputation rates among AI/AN patients in the West Census region.⁴



Researchers found that after adjusting for **socioeconomic factors and pre-existing comorbidities**, AI/AN patients were still **1.8-1.9** times more likely to undergo amputation than White patients.⁵



Conclusion

AI/AN have statistically higher rates of amputation over the general population.³⁻¹⁰ Factors that affect this disparity likely include prevalence of type 2 diabetes, socioeconomic factors, geographic location, and healthcare access.⁴⁻⁸ However, in many studies there were disparities that could not be fully explained by observed factors.^{4,5,8} Additionally, there are very few studies that exclusively focus on amputation among AI/AN.⁴ Further research is needed to untangle the underlying mechanisms contributing to these disparities in order to develop successful interventions.

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