

# Study identifies risk factors associated with negative outcomes following lower extremity soft-tissue reconstruction

April 27 2023

---



Credit: Unsplash/CC0 Public Domain

Lower extremities are the most commonly injured body region, occurring in more than 40% of trauma patients in North America.

Salvaging limbs with extensive soft tissue damage often requires reconstruction with tissue from one site of the body to another via pedicled (still connected to the blood supply) or free flaps (completely detached from its blood supply).

Complications can include flap infection and failure and often require amputation. Poor outcomes may be due to vascular injuries and flap type, but other [risk factors](#) including [older age](#), bleeding disorders, [tobacco use](#), gender and obesity may also play a role.

In the largest multicenter study of patients undergoing traumatic lower extremity soft tissue reconstruction, researchers from Boston University Chobanian & Avedisian School of Medicine have identified diabetes, race and trauma centers with lower accreditation levels as risk factors associated with poor outcomes.

"While surgeons may not have the opportunity to control patient comorbidities prior to reconstruction, providers treating patients with lower extremity injuries should increase their efforts to treat diabetes and consider transfer of patients to specialized trauma centers with orthoplastics expertise," said first author Scott Levin, MD, MSc, clinical instructor in the department of surgery at the School.

Using data from the largest North American trauma registry, the American College of Surgeons National Trauma Data Bank, the researchers performed a retrospective analysis and found having diabetes was associated with post-reconstruction limb loss while being a member of a non-white race had a small correlation with wound infection. Additionally, patients transferred to hospitals with higher level trauma accreditation experienced decreased likelihood of needing rehabilitation after reconstruction.

"Patients with extremity trauma necessitating reconstruction may exhibit

functional benefits from the orthopedic and [plastic surgeon](#) collaborative approach to reconstruction available at specialized [trauma centers](#)," added Levin, who also is a general surgery resident at Boston Medical Center.

The researchers also found vascular interventions (for vascular trauma in the same leg as the reconstruction) prior to reconstruction correlated with higher rates of complications, particularly surgical site infection and amputation. According to the researchers, flap reconstruction types exhibited similar complication risks, but patients with free flaps were more likely to have longer hospital stays.

"Providers should weigh the similar perioperative complication risks against the longer length of stay associated with free flaps which can increase healthcare costs," said Levin.

The researchers believe further analysis is warranted to determine why certain patient populations, including black patients, experience increased complications.

The research is published in the journal *Plastic and Reconstructive Surgery—Global Open*.

**More information:** Scott R. Levin et al, Assessment of Risk Factors Correlated with Outcomes of Traumatic Lower Extremity Soft Tissue Reconstruction, *Plastic and Reconstructive Surgery—Global Open* (2023). [DOI: 10.1097/GOX.0000000000004961](https://doi.org/10.1097/GOX.0000000000004961)

Provided by Boston University School of Medicine

Citation: Study identifies risk factors associated with negative outcomes following lower

extremity soft-tissue reconstruction (2023, April 27) retrieved 26 April 2024 from <https://medicalxpress.com/news/2023-04-factors-negative-outcomes-extremity-soft-tissue.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.