



# Research Week 2022

## Transmetatarsal Amputation: A retrospective review of preoperative factors predictive of improved function and survival

Kathleen Denny MS2, Adam Eakin MS3, John Philip Tabb MS3, Amanda Chao D.P.M., Gregory Landry MD, David Griffin D.P.M.,  
Denny@ohsu.edu, Eakin@ohsu.edu, Tabb@ohsu.edu  
Oregon Health and Science University, School of Medicine

### Keywords

Orthopedics, Podiatry, Surgery, Perioperative Care, Vascular Surgery

### Abstract

#### Purpose/Objective:

Transmetatarsal amputations (TMA) often serve as a last line treatment for distal foot gangrene in patients who hope to retain part of their foot rather than undergo a more proximal amputation. This study aims to examine demographic and clinical factors predictive of healing, function, and survival following TMA.

#### Methods:

In this retrospective case-control study, patients who underwent TMA in the treatment of dry foot gangrene at OHSU between July 1994 to December 2002 were included. Electronic health records were reviewed to collect factors which may impact healing, ambulation, discharge status, and survival. Factors included were demographic characteristics, comorbid conditions, perioperative data, and preoperative vascular status. From this information, Lower Extremity Threatened Limb (Wound, Ischemia, foot Infection) Classification System (WIFI) scores were calculated as a classification tool to group patients. WIFI A estimates risk of amputation at 1 year and WIFI B estimates likelihood of benefit of revascularization.

#### Results

Fifty patients who underwent TMA between July 1994 to December 2002 were identified. In the 35 patients in which WIFI scores have been calculated so far, it was found that 18 (51%) patients were at high risk on both WIFI A (n=21) and WIFI B (n=22), with high risk status resulting in subsequent proximal amputation for 38% (n=8) and 36% (n=8) of patients respectively. Of 47 patients with follow-up data available, 30% (n=14) were readmitted within 30 days of their TMA and 30% (n=14) underwent a revision amputation. Further analysis will seek to identify which factors are significant in predicting outcomes following TMA.

## Conclusions

Transmetatarsal amputation has been shown to improve postoperative outcomes when compared to amputations proximal to the foot and ankle. In patients who encounter complications requiring further operative treatment, however, the procedure may stand to delay necessary care. Further understanding of factors predictive of increased risk of post TMA complications is necessary to assist in clinical decision making and improve outcomes for patients.