

## Advancing Tissue Assessment on Multiple Lower Extremity Ulcerations

### CASE STUDY

## Bilateral diabetic foot and malleolar ulcers with endovascular intervention

59-year-old female patient that sustained a fall, with bilateral open reduction internal fixations of her left and right malleolar fractures completed. Her bilateral ankle incisions dehisced after three weeks prompting multiple rounds of oral and intravenous antibiotics and surgical incision and drainage of her incision sites. The patient's co-morbidities and relevant medical history included: Type 2 diabetes, coronary artery disease, peripheral arterial disease, peripheral vascular disease and smoking history.

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### Did You Know?

*Capstone Project completed on the use of Snapshot<sub>NIR</sub> in the treatment of diabetic foot and peripheral arterial ulcers in the wound care setting.*

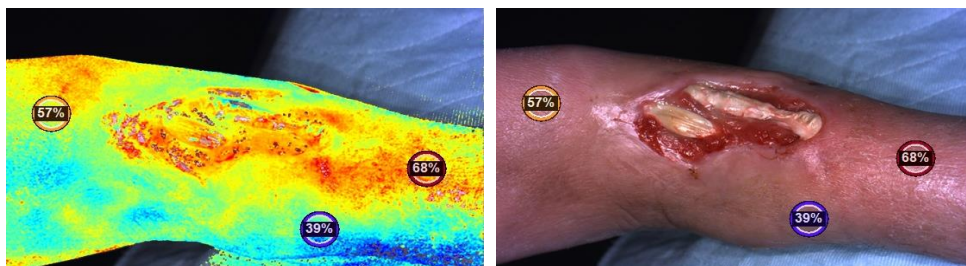


Fig 1: Baseline image pre-vascular surgery and arterial doppler showing left lateral malleolus with bone and orthopedic hardware exposed.

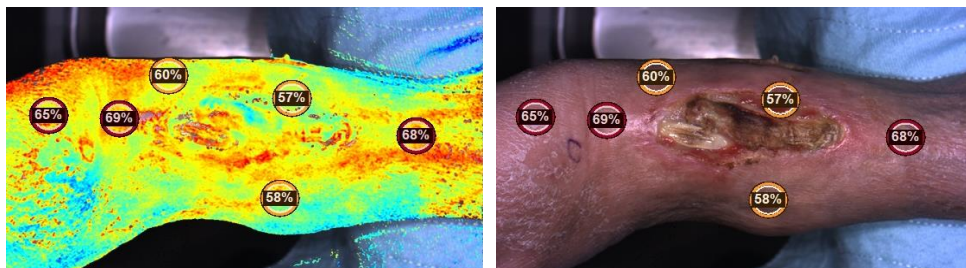


Fig 2: Thirteen (13) days following vascular surgery and a left leg balloon angioplasty of the entire superficial femoral artery and proximal popliteal artery

### OBSERVATIONS:

Within one week, a bilateral arterial duplex was completed with the following reported findings:

- 50% - 75% stenosis of the right common femoral artery, occlusion of right superficial femoral artery
- 50% - 75% stenosis of the left common femoral artery, occlusion of the left superficial artery

Three days later, a left leg balloon angioplasty of the entire superficial femoral artery and proximal popliteal artery, an angioplasty of left tibioperoneal trunk and right common iliac artery, and a bilateral lower extremity angiogram were all completed. Post intervention, the patient was reimaged with Snapshot<sub>NIR</sub> at the foot and ankle sites. The images showed a greater than 15% increase in tissue oxygenation compared to pre-vascular intervention procedures.

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### CONCLUSION

By using Snapshot<sub>NIR</sub> and following the Mercy Springfield Wound Center's established process and protocol with Snapshot<sub>NIR</sub>, this patient's bilateral feet, and possibly her legs, were preserved. We were able to use Snapshot<sub>NIR</sub> to diagnose her severe peripheral arterial disease and set her on an appropriate plan of care involving cardiovascular interventions, hyperbaric oxygenation therapy (HBOT), and advanced wound care.

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*Snapshot<sub>NIR</sub> device is efficient and effective and gives us an excellent clinical picture of a patient's ability to heal.”*

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What are you doing to measure microvascular oxygenation? Wounds can be deceptive. Leveraging near-infrared spectroscopy (NIRS) for tissue assessment goes beyond the macrovascular to measure the critical microvascular level.

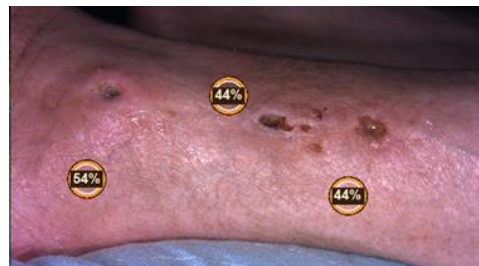
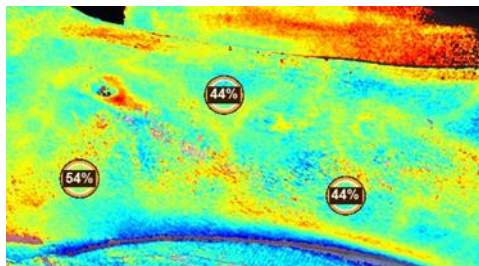


Fig 3: Baseline image pre-vascular surgery and arterial doppler showing peripheral arterial ulcer

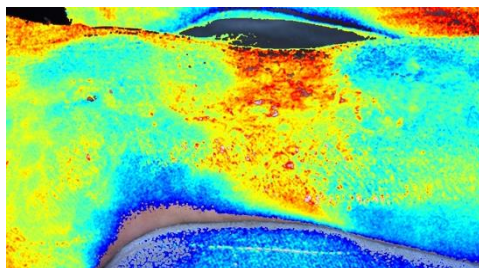


Fig 4: Thirteen (13) days following vascular surgery and arterial doppler.

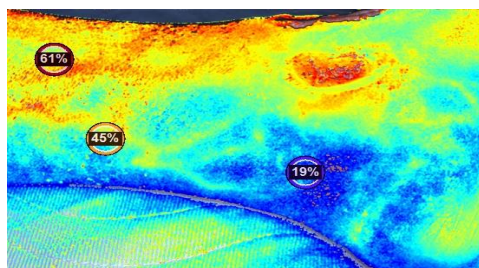


Fig 5: Baseline image pre-vascular surgery and arterial doppler showing peripheral malleolar ulcer

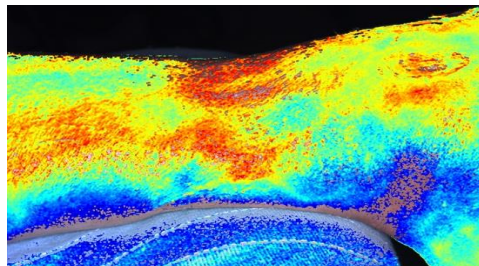


Fig 6: Thirteen (13) days following vascular surgery and arterial doppler.