

The Role of Fluorescence Bacterial Scanning in the Identification & Treatment of Intertriginous Bacteria in Diabetic Feet

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Study Inspiration



A diabetic patient presented to our outpatient wound clinic presenting with clear symptoms of a foot infection, *without the presence of a foot wound*.

Fluorescence imaging (MolecuLight) of the entire foot revealed **bacteria only in the intertriginous space** between 2 toes.

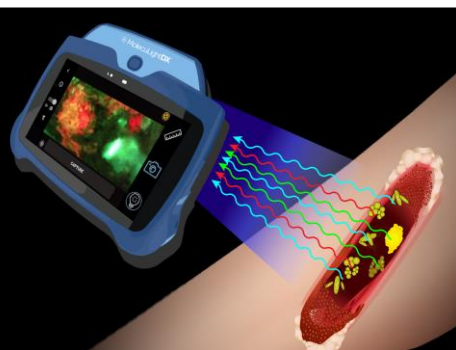
Upon closer inspection, a **micro-fissure was discovered as the likely entry point for infection-causing bacteria**. This discovery would not have been possible with standard (eye) examination alone.

Objectives

Inspired by the patient above, this pilot study aimed to determine the **prevalence of intertriginous (between toes) bacteria** in diabetic patients and develop **management strategies**.

Fluorescence Imaging

- **10 diabetic patients** (being treated for lower extremity wounds not involving the foot)
- **Scanned for intertriginous bacteria** (between the toes) using fluorescence imaging.



✓ Safe violet light imaging



Cyan fluorescence indicates *Pseudomonas aeruginosa*²

✓ Detects bacterial loads of $>10^4$ CFU/gram (pathogenic)^{1,2}

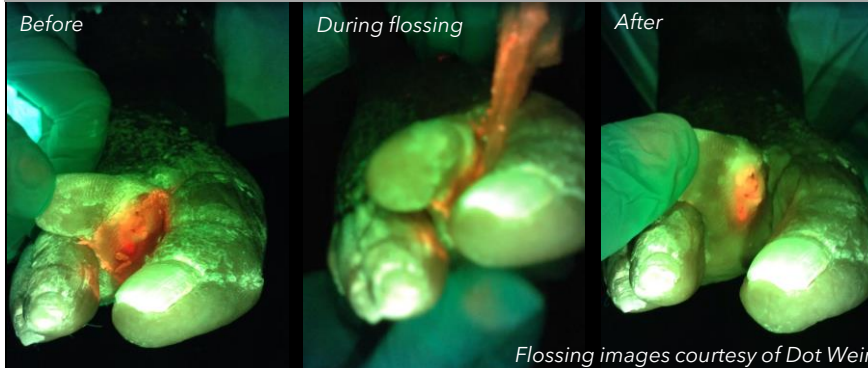


Green fluorescence shows tissue components (slough, skin)

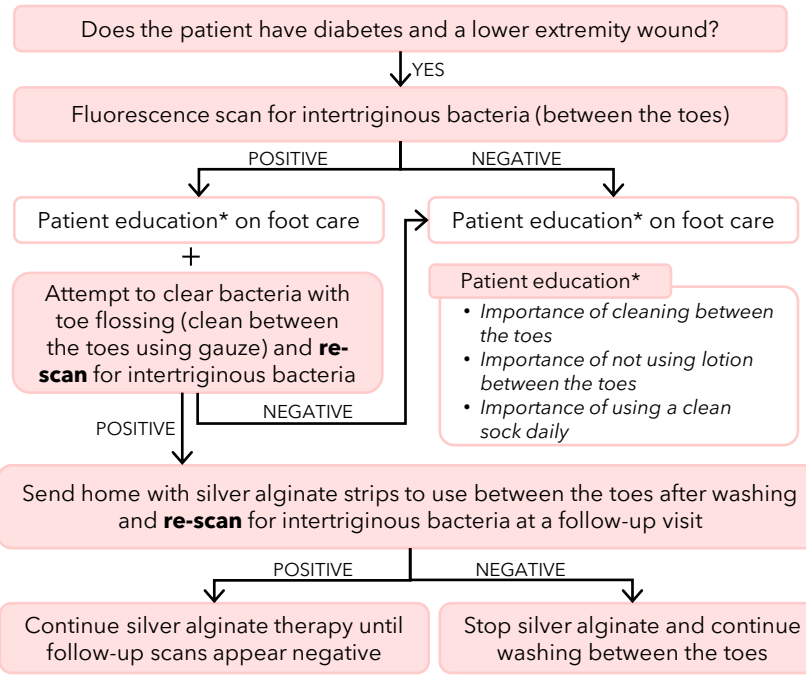


Red/blush/pink fluorescence indicates most gram positives, negatives, aerobes and anaerobes¹

Fluorescence Images of "Toe Flossing"



Treatment Algorithm



Key Findings

50% of diabetic patients had fluorescence scans indicating **intertriginous bacteria** (between the toes).

Of those patients, **2/5** had **unexpected small fissures**,

which are a potential **entry point** for bacteria that can **lead to infection**, even without a wound in the region.



Take-home Points



Educate diabetic patients and clinicians on the **importance of washing between the toes** and not applying lotion between the toes.



Fluorescence imaging provides **objective information** on the incidence of **intertriginous bacteria**.



Fluorescence imaging is a foundational tool for **educating patients on the importance of at-home cleansing** between the toes and can potentially improve patient compliance.



Through imaging, bacterial burden and its location(s) can now be objectively diagnosed at the point-of-care, enabling **earlier, proactive bacterial-infection management**.



Poster Download



References