INNOVATION PARTNERSHIPS
UNIVERSITY OF MICHIGAN

Novel Bedside or Intra Operative Assessment of Wound and Burn Depth and Readiness for Reconstruction

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Category
Medical Devices
Life Sciences

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OVERVIEW

Label-free moisture and tissue factors detecting camera enhances wound analysis efficiency and accuracy for better outcomes.

- Improves non-invasive wound assessment with portable, real-time imaging technology.
- Applications: bedside wound assessment, intra-operative analysis, and surgical decision-making.

BACKGROUND

Timely and precise treatment of wounds and burns are critical for preventing infection and promoting healing, but traditional approaches lack objective assessment tools. Historically, clinicians have relied on visual inspection to guide treatment decisions, which can be subjective and inconsistent. Punch biopsies provide more information but are invasive, risk infections, and offer only single-time-point data. Other advanced technologies like Laser Doppler Imaging and Near Infrared Spectroscopy are non-invasive but present challenges due to their high cost, time

requirements, and non-portable nature. These limitations have prompted the need for a more efficient, reliable, and cost-effective method of assessing wound depth and healing state. An innovation that offers real-time, objective analysis without the drawbacks of current systems would greatly enhance wound management and treatment outcomes.

INNOVATION

The novel imaging technology revolutionizes wound care by enabling fast and accurate assessments of wound depth through label-free moisture and tissue factors detection. This portable device provides real-time, bedside or intra-operative analysis, allowing clinicians to observe healing processes continuously and make informed decisions about further debridement or graft readiness. By using a non-invasive and label-free imaging method, it offers an efficient alternative to traditional and existing technologies, making it accessible and cost-effective. The key technical advance is its ability to provide objective measurements that correlate with wound healing stages, vastly improving treatment precision and patient outcomes. Potential applications for this technology include hospital settings, outpatient clinics, and field hospitals, where timely and accurate wound care is essential. This innovation presents a significant step forward in reducing hospitalization time and improving the management of wounds and burns.