

# HyperView<sup>™</sup>

### PRODUCT OVERVIEW



The Leader in Hyperspectral Imaging for Tissue Oximetry

## The Leader in Hyperspectral Imaging for Tissue Oximetry





OXY



DEOXY



O2SAT



VISUAL

## A New Generation of Advanced Portable Imaging Has Arrived

HyperMed Imaging, Inc. is the established leader in medical hyperspectral imaging for surface tissue oximetry. Our pioneering technology has over 10 years of established history in the market and has been shown in published clinical research to effectively assess oxyhemoglobin, deoxyhemoglobin and oxyhemoglobin saturation in superficial tissue for a number of key healthcare applications. HyperMed has developed a smaller, faster, and more portable product utilizing its class-leading hyperspectral imaging technology. HyperMed's new product, called HyperView<sup>™</sup>, is FDA 510(k) cleared.





HyperMed invites healthcare professionals and industry participants to contact us for more information

#### The Need

Tissue viability in surgical and wound healing applications are dependent upon localized delivery of oxygen by the microcirculatory system. Existing diagnostic tools that represent standards of care for vascular assessment do not image the key biomarkers of interest in tissue, which are oxyhemoglobin and deoxyhemoglobin levels and oxygen saturation. For example, the Ankle Brachial Index (ABI) does not provide a measurement or image of hemoglobin levels or oxygen saturation. Doppler based devices only consider large vessel flow as opposed to microcirculatory performance and localized delivery of oxygen. Transcutaneous Partial Pressure of Oxygen (TcPO2) is a point probe that provides only one oxygen saturation measurement per probe site.

Patients in need include those with compromised vascular systems such as those who suffer from diabetes, peripheral vascular disease and limb ischemia. For these patients, limb preservation and limb salvage is of great importance.

#### **The Solution**

HyperMed's technology rapidly assesses microcirculatory performance in superficial tissue by imaging the key biomarkers of interest for tissue health. Our new HyperView<sup>™</sup> system is a fast, handheld, battery operated, medical imaging device optimized for mobility and ease of use. The HyperView is a selfcontained imaging and analysis system, with built-in touch screen display and diagnostic software tools which allow the clinician to image the patient and quickly complete the diagnostic process without leaving the exam room. HyperView utilizes a proprietary form of hyperspectral imaging to assess oximetry in superficial tissue. Images and data are captured in under one second. There is no contact with the patient and no injectable contrast agents are used.



HyperView is FDA Cleared

HyperView uses visible light and an internal spectrometer to differentiate light absorption between oxygenated hemoglobin and deoxygenated hemoglobin. Results are presented as color-coded images containing quantitative data which depict levels of oxyhemoglobin and deoxyhemoglobin, as well as oxygen saturation values. Built-in software tools allow the clinician to analyze various areas within the image corresponding to locations on the skin surface. This allows the clinician to determine areas of ischemic tissue and visualize arterial and venous sufficiency in localized tissue, for example the boundary around a diabetic foot ulcer. Images and associated analysis results are electronically stored in an industry standard format for medical images (DICOM<sup>™</sup>).

#### **Clinical Applications**

HyperView<sup>™</sup> provides meaningful diagnostic insights for patients with vascular compromise, which help clinicians provide a better standard of care. There are many medical applications requiring a need to quickly and efficiently determine perfusion and surface tissue oxygenation. Ischemic tissue leads to complications such as non-healing wounds and surgical intervention. In many cases, there is a need to determine perfusion, adequate blood supply and exchange in the tissue capillary bed. The ease of use, portability, and speed of the HyperView system makes it suitable for use in many clinical applications from general practice to specialized care applications including wound care, plastic and reconstructive surgery, amputations, vascular surgeries and associated procedures to increase limb perfusion.

#### **Suggested Reading**

Chin JA, Wang EC, Kibbe MR. Evaluation of hyperspectral technology for assessing the presence and severity of peripheral artery disease. *Journal of Vascular Surgery.* 2011;54(6):1679–1688. doi:10.1016/j. jvs.2011.06.022.

Jafari-Saraf L, Wilson SE, Gordon IL. Hyperspectral image measurements of skin hemoglobin compared with transcutaneous PO2 measurements. *Annals of Vascular Surgery*. 2012;26(4):537–548. doi:10.1016/j. avsg.2011.12.002.

Nouvong A, Hoogwerf B, Mohler E, Davis B, Tajaddini A, Medenilla E. Evaluation of diabetic foot ulcer healing with hyperspectral imaging of oxyhemoglobin and deoxyhemoglobin. *Diabetes Care.* 2009;32(11): 2056–2061. doi:10.2337/dc08-2246.

Yudovsky D, Nouvong A, Schomacker K, Pilon L. Assessing diabetic foot ulcer development risk with hyperspectral tissue oximetry. *Journal of Biomedical Optics.* 2011;16(2):026009. doi:10.1117/1.3535592.



For more information, visit HyperMed.com



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