

Abstract Submitted  
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**Diffuse Reflectance Spectroscopy and Colorimetry as a Diagnostic Tool for Acanthosis Nigricans** BENSACHEE PATTAMADILOK, Henry Ford Health System, SUNEETHA DEVPURA, Wayne State University, ZAIN U. SYED, PRANITA VEMULAPALLI, MARSHA HENDERSON, Henry Ford Health System, STEVEN J. REHSE, Wayne State University, ILTEFAT HAMZAVI, BASSEL H. MAHMOUD, HENRY W. LIM, Henry Ford Health System, RATNA NAIK, Wayne State University — The purpose of this study was to quantify skin color changes due to Acanthosis Nigricans, a disorder common among prediabetic and obese individuals. The non-invasive optical technique diffuse reflectance spectroscopy (DRS) was used to determine skin melanin, oxyhemoglobin and deoxyhemoglobin content through the measured absorption spectrum. Colorimetry was used to measure skin color based on the standard Tristimulus values ( $L^*$ ,  $a^*$ , and  $b^*$ ). Data was obtained from eight patients, spanning eight months of treatment. Measurements were obtained from lesion tissue on the neck and healthy skin was used as a control.  $L^*$ ,  $a^*$  and  $b^*$  values showed significant differences between lesion and normal controls, whereas melanin was the only parameter which showed statistical significant differences in DRS measurements. Future work will use more sensitive chemometric methods to increase diagnostic accuracy based on the raw spectra of the DRS.

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