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235 Instruments and New Technologies for the In Vivo Diagnosis of Melanoma

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ABSTRACT

The principal objective of screening individuals at risk for melanoma is detection of cutaneous melanoma during the curable stages of its early evolution. Unaided visual inspection of the skin is often suboptimal at diagnosing melanoma. Improving the diagnostic accuracy for melanoma remains an area of active research. These research efforts have focused on both the detection of early melanoma and the in-depth evaluation of suspicious pigmented lesions for the presence or absence of melanoma. Numerous instruments are under investigation to determine their usefulness in imaging and ascertaining a correct in vivo diagnosis of melanoma. It is anticipated that some of these tools, alone or in combination, will improve our ability to differentiate, in vivo, melanoma from its simulators. Ultimately, these advances may prevent unnecessary biopsies (increased specificity) while increasing the sensitivity for diagnosing melanoma. This article reviews the current instruments and new technologies for the in vivo diagnosis of melanoma. Learning objective At the conclusion of this learning activity, participants should be acquainted with the instruments designed to facilitate the early detection of melanoma. They should also be familiar with the basic technology behind these instruments and should recognize the potential benefits and limitations inherent in each.