

Reflectance Confocal Microscopy: An Exploration of Expanded Clinical Applications

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Reflectance confocal microscopy (RCM) is a new tool in dermatology that offers a non-invasive, in vivo method for the differential diagnosis of potentially melanocytic lesions and other skin cancers. Put simply, RCM is a painless, non-destructive, non-invasive, in vivo technology that images the skin at a cellular resolution as deep as the papillary dermis. RCM's efficacy in skin cancer diagnostics has been well described, established, and accepted. Internationally, RCM is being readily adapted and integrated into clinical dermatology practice and demonstrates significant benefit to value-based patient care. There is undeniable benefit to a biopsy alternative for quality differential diagnosis in sensitive patient populations (eg. young children, immune-compromised) and sensitive anatomic locations (eg. face, genitals). As its implementation within U.S. clinical practice expands, the opportunity to explore expanded potential clinical uses of this technology is ripe.

Overview of RCM Technology: A laser diode emitting near-infrared light is focused on a selected skin feature. Portions of the light are naturally reflected by certain cellular structures as it passes into and through the skin, after which it is captured by a photodiode. This process creates en face images from the surface of the skin down to the papillary dermis.

Current U.S. Clinical Use: The Food and Drug Administration (FDA) has approved use of RCM in clinical dermatology for the purpose of diagnosing and monitoring skin conditions, specifically skin cancers.