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Performance of full-pupil line-scanning reflectance confocal microscopy in human skin and oral mucosa in vivo.

Larson B, Abeytunge S, Rajadhyaksha M.; Biomed Opt Express. 2011 Jul 1;2(7):2055-67.

ABSTRACT

Point-scanning reflectance confocal microscopes continue to be successfully translated for detection of skin cancer. Line-scanning, with the use of a single scanner and a linear-array detector, offers a potentially smaller, simpler and lower cost alternative approach, to accelerate widespread dissemination into the clinic. However, translation will require an understanding of imaging performance deep within scattering and aberrating human tissues. We report the results of an investigation of the performance of a full-pupil line-scanning reflectance confocal microscope in human skin and oral mucosa, in terms of resolution, optical sectioning, contrast, signal-to-noise ratio, imaging and the effect of speckle noise.