

Skin color independent assessment of aging using skin autofluorescence

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Abstract: Skin autofluorescence (AF) for the non-invasive assessment of the amount of accumulated tissue Advanced Glycation Endproducts (AGEs) increases with aging. In subjects with darker skin colors, measurements typically result in lower AF values than in subjects with fair skin colors, e.g. due to selective absorption by skin compounds. Our aim was to provide a new method for calculating skin AF, yielding values that are independent of skin color. The deviation of skin AF of healthy subjects with various darker skin types (N = 99) compared to reference values from Caucasians showed to be a function of various parameters that were derived from reflectance and emission spectra in the UV and visible range (adjusted R² = 80%). Validation of the new algorithm, based on these findings, in a separate dataset (N = 141) showed that results of skin AF can now be obtained to assess skin AGEs independently of skin color.

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