Red reflex variations in black patients

To the Editor:

In the medical field, it is important to be cognizant of various objective presentations that can be encountered. Different skin tones may result in different test outcomes. A 2020 article in the New England Journal of Medicine [1] reviewed the different outcomes between black and white skin colors when adult inpatient pulse oximetry measurements were compared to their arterial oxygen saturation in arterial blood gas. When compared to white patients, Black patients had nearly three times the frequency of occult hypoxemia that was not detected by their paired pulse oximetry [1]. For example, this variance might be critical hypoxemia that was not detected by their paired pulse oximetry and its potential severity. An acute segmental facilitation is characterized by greater initial reactive hyperemia with prolonged duration of redness. At times, the red reflex in the setting of acute segmental facilitation might skip the initial blanching. In chronic segmental facilitation, the skin might remain pale, or the red reflex fades rapidly [6, 7].

On lighter skin tones, the red reflex test can be performed and interpreted easily. However, on darker skin tones, the red reflex could be harder to see. The physician would need to observe more carefully for the subter skin color changes in Black patients. Chromameters are instruments that may be used to measure or quantify skin color. Clarys et al. [8] measured skin color using a chromameter and narrow-band simple reflectance meters. These instruments were also able to distinguish small skin color differences due to various reactions [8]. An exhaustive literature search revealed that no studies have been conducted to evaluate red reflexes using chromameters.

At times, a physician might not be able to rely on the observation for the red reflex as part of the evaluation for segmental viscerosomatic changes in a Black patient. Palpation for tissue texture changes such as asymmetry, restriction of motion, rigidity, increased bogginess, and temperature changes would offer more reliable, objective structural exam findings for the physician caring for Black patients [3].

Whether it be pulse oximeter variations, differences in dermatologic presentations of rashes, or red reflex skin reactions, it is important to mention these differences when teaching students. Utilizing resources such as Mind the Gap: A Handbook of Clinical Signs in Black and Brown Skin [9] can help facilitate teaching, while encouraging inclusivity and optimal patient care in the future. Besides clinical exposure, research using chromameter measurements could help facilitate training for diagnosing TART changes.
Research funding: None reported.

Author contributions: Both authors provided substantial contributions to conception and design, acquisition of data, or analysis and interpretation of data; both authors drafted the article or revised it critically for important intellectual content; both authors gave final approval of the version of the article to be published; and both authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

Competing interests: None reported.

References