Need a Wood Lamp Alternative? Grab Your Smartphone

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The Wood lamp is an effective diagnostic tool for skin conditions such as vitiligo, erythrasma, and scabies. However, it can be an expensive and cumbersome tool or may be unavailable in some settings. Smartphone applications that simulate UV light may be helpful in these instances.

Practice Gap

The Wood lamp commonly is used as a diagnostic tool for pigmentary skin conditions (eg, vitiligo) or skin conditions that exhibit fluorescence (eg, erythrasma).[1] Recently, its diagnostic efficacy has extended to scabies, in which it unveils a distinctive wavy, bluish-white, linear fluorescence upon illumination.[2]

Functionally, the Wood lamp operates by subjecting phosphors to UV light within the wavelength range of 320 to 400 nm, inducing fluorescence in substances such as collagen and elastin. In the context of vitiligo, this process manifests as a preferential chalk white fluorescence in areas lacking melanin.[1]

Despite its demonstrated effectiveness, the Wood lamp is not without limitations. It comes with a notable financial investment ranging from $70 to $500, requires periodic maintenance such as light bulb replacements, and can be unwieldy.[3] Furthermore, its reliance on a power source poses a challenge in settings where immediate access to convenient power outlets is limited, such as inpatient and rural dermatology clinics. These limitations underscore the need for alternative solutions and innovations to address challenges and ensure accessibility in diverse health care environments.

The Tools

Free smartphone applications (apps), such as Ultraviolet Light-UV Lamp by AppBrain or Blacklight UV Light Simulator by That Smile, can simulate UV light and functionally serve as a Wood lamp.

The Technique

UV light apps use LED or organic LED screen pixels to emit a blue light equivalent at 467 nm.[4] Although these apps are not designed specifically for dermatologic uses, they are mostly free, widely available for Android and iPhone users, and portable. Importantly, they can demonstrate good performance in visualizing vitiligo, as shown in Figure 1—albeit perhaps not reaching the same level as the Wood lamp (Figure 2).

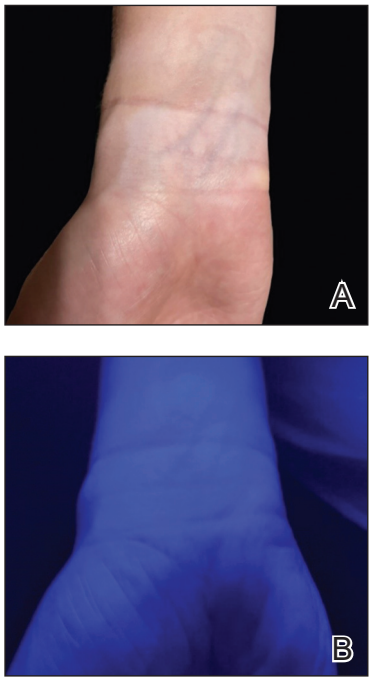

FIGURE 1. A and B, Depigmented patches of vitiligo on the skin are visualized with a free UV light smartphone application, respectively.

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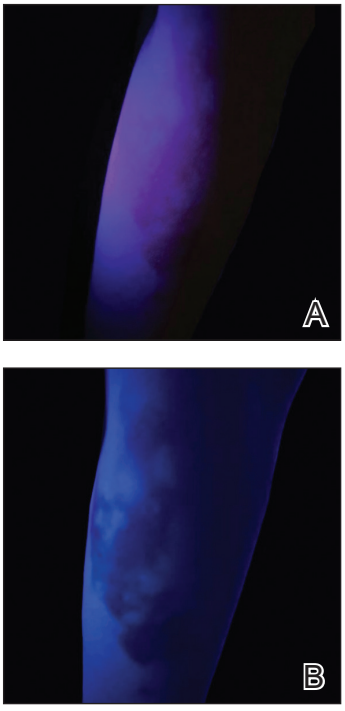

FIGURE 2. A and B, The same depigmented patches of vitiligo are visualized with a free UV light smartphone application vs a Wood lamp, respectively.

Because these UV light apps are not regulated and their efficacy for medical use has not been firmly established, the Wood lamp remains the gold standard. Therefore, we propose the use of UV light apps in situations when a Wood lamp is not available or convenient, such as in rural, inpatient, or international health care settings.

Practice Implications

Exploring and adopting these free alternatives can contribute to improved accessibility and diagnostic capabilities in diverse health care environments, particularly for communities facing financial constraints. Continued research and validation of these apps in clinical settings will be essential to establish their reliability and effectiveness in enhancing diagnostic practices.

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