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Comparison of the Goldmann-Weekers dark adaptometer and LKC Technologies Scotopic Sensitivity tester-1.

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The standard for dark adaptation has long been the Goldmann-Weekers Dark Adaptometer(Haag-Streit). More recently, portable, relatively inexpensive LED-based dark adaptometers have become commercially available. These devices have potential use in areas with limited resources to screen for night-blindness, commonly caused worldwide by vitamin A deficiency. In order to determine the sensitivity to detecting changes in night vision, this study compared one such device, LKC Technologies Scotopic Sensitivity Tester-1 (SST-1) to the Goldmann-Weekers in patients with hereditary retinal degeneration and loss of rod function. Dark-adapted final thresholds and rod full-field ERG responses were obtained from 87 patients and 24 normal subjects. Linear regression analysis, discrepancy analysis, and receiver operator characteristic curves for both devices show that the SST-1 quantifies psychophysical rod function nearly as well as the Goldmann-Weekers, within some limitations. We conclude, therefore, that the SST-1 is a viable alternative to the Goldmann-Weekers for the screening of night-blinding retinal disorders.

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