

PERSPECTIVES IN REFRACTION

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On Focusing the Slit-Lamp: Part II. “The Fading-Slit Test”—Verifying the Ocular Setting

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Abstract. The focusing-rod test is considered the gold standard for determining the correct setting of the slit-lamp ocular rings. This method is, however, somewhat time-consuming, considering the time it often takes to locate a rod every time one switches between slit-lamps or slit-lamp-mounted lasers. In this article we present an alternative test, which we call the fading-slit test, that requires only a second to perform, does not involve additional equipment (such as a rod), and can be applied at any time during the slit-lamp examination. However, while the focusing-rod test determines what setting should be used, the fading slit test can verify only whether the current setting is indeed the correct one and, therefore, it is not a complete substitute for the focusing-rod test. The fading-slit test is performed as follows: while focusing on any approximately flat surface (even the center of the patient’s dome-shaped cornea would do) and using oblique illumination, gradually reduce the slit width until it disappears. Pay attention to whether the slit continuously thins, reaching a hairline width prior to its disappearance or, alternatively, whether, just before disappearance, the slit remains somewhat wide, gradually fading away, instead of thinning away. In the former case the ocular setting is correct; in the latter case it is incorrect. (*Surv Ophthalmol* 42:355–357, 1998. © 1998 by Elsevier Science Inc. All rights reserved.)

Key words. ametropia • focusing-rod • refraction • slit-lamp

In larger clinics, within a single day an ophthalmologist may shift between half-a-dozen slit-lamps that have previously been used by other doctors. Under such circumstances it is bothersome to meticulously set the oculars before starting to work on each instrument. We would like to present an alternative test for verifying whether the current setting used is the correct one. This test can be performed instantaneously, does not disrupt the routine eye examination, and does not necessitate a rod or any other standard plane of reference. This test can be applied routinely whenever one shifts to a new slit-lamp. However, it is especially useful when one is bothered by a vague notion that the slit-lamp image may be

somewhat inferior, wanting to verify whether this is related to the ocular setting, without having to pause the examination. We wish to stress the fact that verifying one’s setting is of paramount importance when operating laser-mounted slit-lamps.

The Fading-Slit Test

The “fading-slit test,” used to verify the accuracy of the ocular setting, is performed in the following way: view in sharp focus any relatively flat surface, such as the anterior (epithelial) surface of the corneal center, the conjunctiva, retina (during biomicroscopy), or a piece of paper. While using strong oblique illumination, preferably with higher magnification,

gradually narrow the slit width until the illumination light disappears (complete darkness). Just before this instance, observe whether:

1. The slit narrows progressively, reaching a hairline width before it disappears. If so, this is the correct setting.
2. After initial thinning, the slit remains somewhat wide, gradually fading away, instead of thinning away (while maintaining constant width). If this is the case, it is the incorrect setting.

The remaining width is inversely proportional to the accuracy of the ocular setting: the narrower the slit is when fading away, the closer the current ocular setting is to the correct one (see Fig. 1).

In Fig. 1, the left column of each figure represents a relatively wide slit, the central column a somewhat narrower slit, and the right column a very narrow setting of the slit. The top row represents a correct ocular setting, the middle row an incorrect setting (mild offset), and the bottom row a significant error of the ocular setting.

Notice how a correct setting (the top row in each figure) demonstrates a slit that gradually and continuously thins, while incorrect settings (the middle and bottom rows) demonstrate a fading slit, remaining somewhat wide prior to disappearance.

Conclusion

The fading-slit test is performed in a real examination situation, incorporating several factors that relate to the accommodative state of the examiner's eye. Such factors include binocularity, convergence, and the book myopia effect. In this respect, it is worthwhile to point out that when using the focusing-rod (presently the gold standard), we have found that one's monocular setting (each eye checked separately) may differ from the binocular setting, a phenomenon analogous to the concept of binocular refinement.

Because the fading-slit test merely indicates whether the current setting is appropriate, we suggest the following: whenever troubled by the notion that you may be using a wrong ocular setting, especially prior to any laser work, perform the fading-slit test. If the setting is found to be incorrect, adjust the ocular rings using the focusing-rod test.

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Fig. 1. Photographs demonstrating the fading slit effect. *Above:* On a piece of paper. *Right:* While observing the cornea.

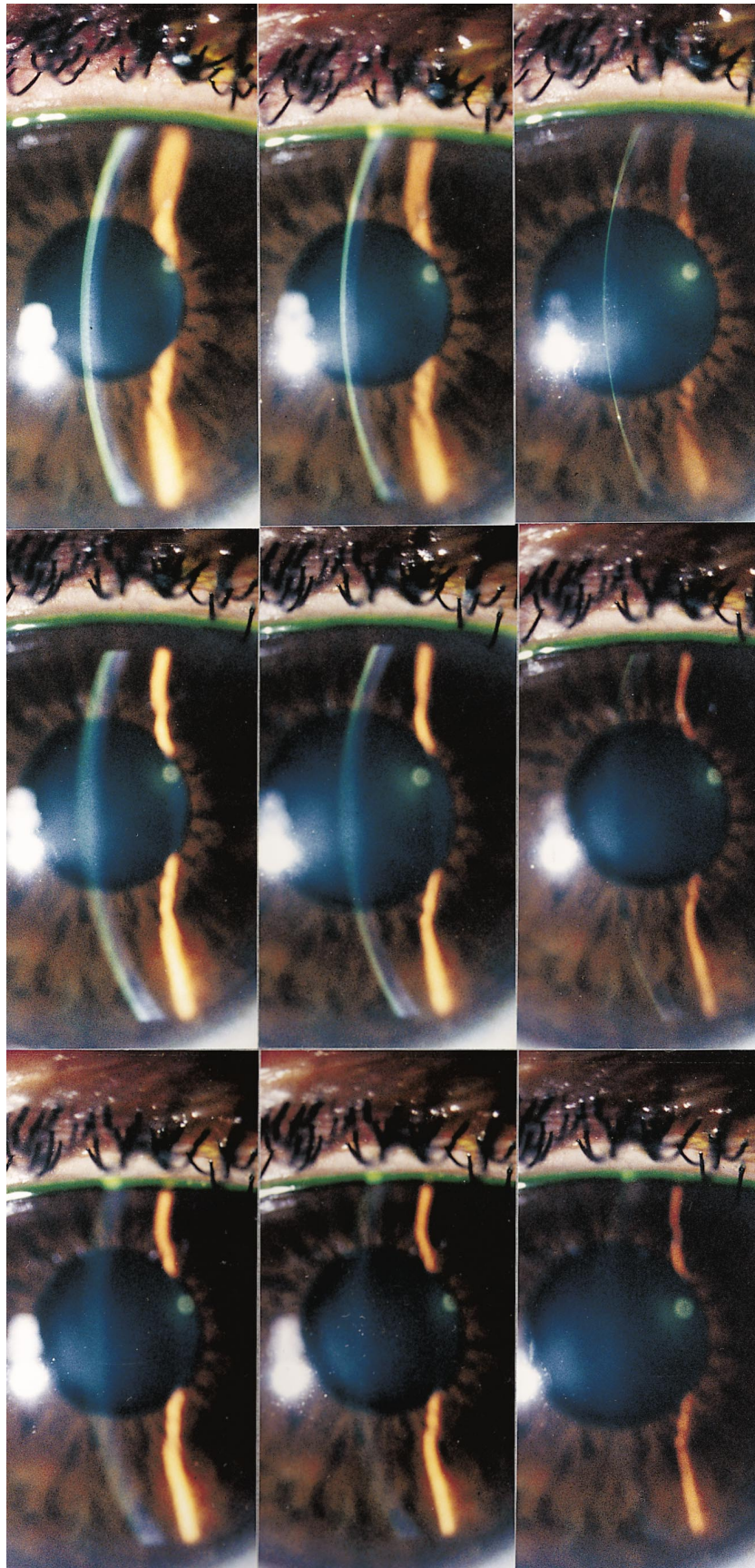


Fig. 1, continued.