The projected angle of an angle that has been rotated around 1 of its sides is equal to

$$\text{Projected angle} = \tan^{-1}[\tan(\text{original angle}) \times \cos(\text{angle of rotation})] \quad (1)$$

Substituting the calculated eye rotation of 25.84 degrees for the angle of rotation and the authors' measurement of the unaccommodated scleral–ciliary process angle of 39.95 degrees for the original angle in equation 1, the projected scleral–ciliary process angle is 37.01 degrees as a result of this example of eye rotation. Therefore, eye rotation can account for all the measured change in scleral–ciliary process angle associated with accommodation.

The incorporation of positional controls in the UBM images are required to differentiate between movement artifact and a physiological process.[3] Without the inclusion of nonchanging references in the UBM images, the etiology of the authors' observations cannot be determined.

Ronald A. Schachar, MD, PhD
Dallas, Texas, USA
Farhad Kamangar, PhD
Arlington, Texas, USA

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Shortening the VF-14 visual disability questionnaire

Pager[1] should be commended for his article on assessing visual satisfaction and function after cataract surgery because it tackles some important and difficult issues. However, the work on shortening the VF-14 deserves further comment. Pager claims "only 1 proposal to shorten the VF-14 has been advocated," but 3 other reports introducing shortened versions of the VF-14 have been published including a 10-item version by Velozo et al.[2] and five 7-item versions by Mallinson et al.[3] that were evaluated with Rasch analysis. Rasch analysis examines the pattern of questionnaire responses using an iterative probabilistic model to determine the calibration of person ability and question (and response scale) difficulty along the same linear scale. This provides truly linear measurement and a powerful insight into the questionnaire's internal consistency by reporting questions fit to the model.[2–5] These advantages have led to the widespread use of Rasch analysis in ophthalmology.[2–5] Indeed, in a recent review of the psychometric properties of existing vision-related quality-of-life questionnaires, the use of Rasch analysis was 1 of the criteria proposed to identify questionnaire quality.[5] Velozo et al.[2] found that there were not enough "difficult" items in the VF-14, and there were gaps in the scale, which suggested additional items were required. They added 10 questions and included 2 in a final VF-10. Mallinson et al.[3] used Rasch analysis to determine whether shortening the VF-14 resulted in a loss of measurement precision. They found that items could be removed without losing precision as long as the "easier" tasks were removed. If the "harder" tasks were removed, an unacceptable loss of measurement precision occurred. They also found redundancy within the VF-14; for example "reading small print" or "reading the newspaper" was predictable based on the response to the other question so it was beneficial to remove 1 of these items. Notably, both remained in Pager's VF-7. Pager justified the 7-item scale by its correlation with the 14-item scale. However, a high correlation does not imply interchangeability; a Bland-Altman limits of agreement analysis would be required to demonstrate interchangeability.[6] In addition, few of the psychometric properties suggested by de Boer et al.[5] to evaluate vision-related questionnaires were included in Pager's report. Clinicians and scientists looking to use a shortened version of the VF-14 would be well advised to consider the work of Velozo et al. and Mallinson et al. and use a Rasch analyzed shortened version of the VF-14.

Konrad Pesudovs, PhD
Bedford Park, South Australia, Australia
David B. Elliott, PhD
West Yorkshire, United Kingdom

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