calculator), rather than serve as an exhaustive review of all methods. The R Factor method was initially described by Rosa et al[2] in 2005 for use after LASIK and photorefractive keratectomy, but so far has not gained traction in terms of being included in either the American Society of Cataract and Refractive Surgery calculator or other recent reviews of this topic.[3,4] In a 2011 study of 9 intraocular lens calculation formulae for postmyopic LASIK eyes, several of which have since been superseded by improved methods, the R Factor was found to be one of the least accurate.[5] We admit to not being aware of the R Factor being used in the context of post-radial keratotomy eyes, which differ considerably from post-LASIK and photorefractive keratectomy eyes, and indeed a Pubmed search of ["radial keratotomy" AND "R factor"] performed on April 29, 2020 returned zero results.

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Financial Disclosures: The authors have no proprietary or commercial interest in any materials discussed in this article.

Available online: July 29, 2020.

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Re: Patel et al.: Predicting the prognosis of Fuchs endothelial corneal dystrophy by using Scheimpflug tomography (*Ophthalmology*. 2020;127:315–323)

TO THE EDITOR: I read the study by Patel et al[1] with interest. The authors tried to address whether Scheimpflug-based corneal thickness (CT) and posterior elevation map patterns, central CT (CCT), and corneal backscatter predict the prognosis of Fuchs endothelial corneal dystrophy (FECD) in 96 eyes of 56 subjects (FECD group) with a median follow-up of 60 months (range, 45–72 months). They concluded that Scheimpflug-based CT and posterior elevation map patterns might predict the prognosis of FECD independent of CCT.[1]

It is well-known that visual symptoms are worse and the cornea is thicker in the morning in eyes with FECD, owing to hypoxia and decreased evaporation caused by closed eyelids.[2] Therefore, significant diurnal variations in corneal measurements and visual acuity can be observed in clinical practice.[2–4] A very recent study by Loreck et al[3] demonstrated that CCT varied about 41.4 microns (6.4%) from morning to afternoon in FECD, whereas diurnal difference in CCT was 5.5 microns (1.01%) in normal eyes. In addition, Fritz et al[4] showed that 95% of the FECD patients experienced a decrease in CT of about 31 to 58 microns and steepening in central posterior cornea over the first 4 hours after awakening.[4] They also suggested that corneal edema resolves within the first 4 hours after eye opening and time elapsed since awakening could affect reliability of the Scheimpflug imaging.[4]

In the study by Patel et al,[1] the authors performed Scheimpflug imaging and ultrasonic pachymetry in the FECD patients at any time during routine clinic hours (7:30 AM to 4:30 PM) and 75% of the images were taken before 1:00 PM. This means that time of measurements was not standardized in the study. Also, it is not clear whether baseline and follow-up measurements from the same patient were obtained at the similar time of the day. Otherwise, this may have led to significant variation between corneal measurements and may have influenced the main results of this study. For instance, in the study of Patel et al,[1] an increase in CT of $\geq$5% was accepted as progression of FECD; however, based on the study by Loreck et al,[3] this amount of change in CT could result from diurnal variation seen in eyes with FECD.

The authors should also clarify whether patients receiving any topical or systemic medications (such as hypertonic saline drops, intraocular pressure lowering agents, and amiodarone) and systemic diseases (such as diabetes) that could affect cornea and contact lens wearers were excluded from the study.

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Financial Disclosures: The authors have no proprietary or commercial interest in any materials discussed in this article.

Available online: July 29, 2020.

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REPLY: There are 2 key points to make regarding the repeatability and, therefore, the validity of Scheimpflug imaging for the evaluation of Fuchs endothelial corneal dystrophy (FECD). First, we believe that pachymetry map and posterior elevation map patterns generated by Scheimpflug imaging are clinically more useful and diurnally more consistent than absolute values of central corneal thickness (CCT). Second, because FECD has a broad range of severity, it is important for investigators to define, and for readers to understand, the severity of eyes enrolled in clinical studies because this factor will influence the outcomes and interpretation. In this context, we recommend that Scheimpflug imaging is only indicated when corneal edema is not visible on slit-lamp examination to assess for 3 specific tomography map features that indicate the presence of subclinical edema and predict prognosis.[1,2] Corneas with FECD and clinically obvious edema are already candidates for keratoplasty and Scheimpflug imaging will not influence management.[2]

Recognizing that CCT can vary with the disease state, time of day, and observer interpretation, and, as Dr. Toprak points out, that such variation directly affects clinical validity, we recently reported on the repeatability of interpretation of Scheimpflug tomography for FECD under various conditions.[3] For repeated images of the same eyes over the course of a morning, we concluded that the overall tomography patterns were maintained such that clinical decision making would be consistent in most cases. The repeatability of objective parameters derived from Scheimpflug images, including CCT, improved after excluding eyes with clinically detectable edema (i.e., more advanced disease) based on narrower limits of agreement (see Figs 2 and 3 in our recent article[3]). This indicates there is less diurnal variation in eyes without clinically detectable edema (i.e., less advanced disease), for which Scheimpflug imaging is most helpful.

We agree that significant diurnal variation of CCT can exist in FECD, but the magnitude of that variation will differ according to the severity of FECD. In our study,[1] although we enrolled eyes with a wide range of severity of FECD, we separately analyzed eyes without clinically detectable corneal edema (i.e., eyes with less advanced disease). The presence of specific tomography findings predicted the prognosis of FECD in these eyes, for which mean CCT was 560 to 573 μm (see Table 1 in the original article[1]). In contrast, the studies by Loreck et al[4] and Fritz et al[5] measured CCT in FECD eyes needing keratoplasty; that is, all eyes had advanced disease including many with clinically visible corneal edema. Steady-state CCT of these eyes was 633 μm (mean)[4] and 634 μm (median),[5] confirming that this group of eyes (on average) had more advanced FECD than the eyes without clinically detectable corneal edema in our study.[1] Fritz et al also found that diurnal variation of CCT was greater when corneas were thicker than the median at steady state compared with when they were thinner than the median,[5] again emphasizing the point that diurnal variation increases as the severity of FECD advances. Therefore, the magnitude of diurnal variation of CCT in FECD eyes that need keratoplasty cannot be extrapolated to eyes without clinically detectable edema and for which Scheimpflug imaging is indicated.

Finally, we neglected to include all of the exclusion criteria for the study in our article. We confirm that we did exclude eyes with glaucoma and ocular hypertension, patients who wore contact lenses, and patients with systemic disease or who were taking medications (including topical hypertonic agents) that might affect the cornea.

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Financial Disclosures: The authors made the following disclosures: S.V.P.: Consultant − Senju Pharmaceuticals, outside the submitted work.

Available online: July 29, 2020.

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Re: Varin et al.: Age-related eye disease and cognitive function: the search for mediators

(*Ophthalmology*. 2020;127:660-666)

TO THE EDITOR: We read with interest the article correlating cognitive dysfunction with retinal diseases like age-related retinal degeneration and glaucoma.[1] We would like to shed some light on a few observations we made in this article regarding glaucoma.