How much attention do we pay to the squiggly line at the bottom of our Humphrey Visual Field Analyzer (HFA) automated perimetry reports? This gaze tracking line has been available for many years. How many of us can accurately translate the code of the smaller and larger deflections along the line? Thus far little or no analysis of the utility of those data has been attempted. In a recent series of papers, Ishiyama, Murata, Asaoka, and colleagues have been investigating the possible utility of that information for assessing glaucoma patients. Initially their papers concentrated on correlation with test-retest variability (TRV) and related concepts. Test-retest variability is a serious issue that spoils our attempts to track progression of visual field loss. For completeness I mention a few important TRV papers here other than those cited in the authors’ current paper.1–3 The current study by Ishiyama et al.4 goes a step further and shows that blink rates, tracking failures, and, particularly, eye movements of between 3° and 5° are also related to retinal structural parameters such as retinal nerve fiber layer (RNFL) thickness. The group shows that these effects are relatively independent of traditionally reported summary measures such as false-positive and -negative rates. Overall, the study suggests that not only is fixation jitter quite problematic in automated perimetry, but also that gaze tracking may be telling us something about glaucoma severity as well. Thus we may want to go beyond just trying to eliminate fixation losses, and instead use them. In any case, it is time to develop summary statistics from the gaze tracking data, and these authors are pointing the way as to what those statistics should be.

References


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