age-related macular disease: results of a randomized controlled trial (the EFFECT study). Ophthalmol Sci. 2023;4:100422.

4. Li S, Li D, Wang L, Lin H, Zhang J. The natural preferred retinal locus in patients with macular disease. Sci Rep. 2025;15:25348.

5. Molin C, Midena E, Convento E, Midena G, Pilotto E. Fixation stability as a surrogate for reading abilities in age-related macular degeneration: a perspective. J Clin Med. 2025;14:7941.

## Reply

We thank the author for their interest in our study[1] and their constructive comments.[2] We appreciate the opportunity to clarify several methodological aspects of our retrospective analysis evaluating preferred retinal locus (PRL) characteristics in patients with juvenile macular dystrophy (JMD).[1]

First, we acknowledge that JMD comprises a heterogeneous group of inherited retinal disorders with diverse genetic and phenotypic backgrounds. Genetic testing was not systematically available for the majority of patients during the study period. All patients were diagnosed and referred by experienced retina specialists based on clinical examination and multimodal retinal imaging, reflecting routine real-world clinical practice. The primary objective was to characterize functional fixation behavior in a clinically defined cohort of young patients with central macular involvement. Retrospective genetic stratification would have substantially reduced the sample size and introduced selection bias.

Second, regarding prior low-vision rehabilitation or eccentric viewing training, we would like to explicitly clarify that all patients were evaluated at their first referral to the low-vision rehabilitation unit. As stated in the Methods section, "JMD-related lesions and PRLs were assessed at the beginning of their low-vision clinical evaluation." Accordingly, none of the patients had previously undergone structured low-vision rehabilitation or formal eccentric viewing training. Therefore, the PRL characteristics described in this study reflect spontaneous neurovisual adaptation to central vision loss rather than rehabilitation-induced effects. While informal compensatory strategies cannot be entirely excluded, no patient had received supervised rehabilitation prior to assessment.

Third, fixation stability was quantified using maximum dispersion of fixation points rather than the bivariate contour ellipse area (BCEA). While BCEA is a widely accepted metric, fixation data were acquired using an Optos SLO/OCT-based microperimetry system, whose software versions available during the study period did not consistently compute BCEA or export raw fixation coordinates. Post-hoc BCEA calculation from the summary reports was not feasible, and raw coordinate export was not supported by the legacy software configuration. However, maximum dispersion provides a clinically interpretable measure of fixation instability and has been applied in previous clinical studies.[3] Moreover, dispersion and BCEA are strongly correlated measures of the same underlying fixation instability, and the observed clinical associations would be expected to remain consistent regardless of the metric used.[4]

Fourth, with respect to control groups, age-matched controls with other macular diseases are epidemiologically difficult to identify, as most macular disorders occur later in life. Comparisons with healthy controls yield limited insight into eccentric fixation mechanisms, as healthy subjects invariably use the fovea. Accordingly, the most relevant comparisons are internal correlations with disease-related parameters, supported by comparisons with established PRL patterns in age-related macular degeneration reported in the literature.[5]

Finally, the modest sample size and absence of a control group are acknowledged limitations and should be interpreted in the context of the epidemiology of JMD. As JMD is a rare disorder, assembling a cohort of young patients (mean age 19.8 years) with complete fixation and microperimetric data at a single center is inherently challenging. Many foundational PRL studies have relied on similarly sized cohorts, whereas larger datasets (e.g., ProgSTAR) required multicenter collaboration.[6] Despite the limited number of cases, the sample size allowed detection of strong main associations, including a significant correlation between age and PRL location ($r=0.541$, $p=0.002$).

Despite these limitations, we believe that our study provides clinically relevant real-world data on PRL behavior in young patients with central macular disease—an underrepresented population in the literature. We agree that future prospective, longitudinal studies incorporating genetic characterization and standardized fixation metrics will be essential to further elucidate PRL adaptation mechanisms.

### Declarations

### Authorship Contributions

Surgical and Medical Practices: M.E., Concept: M.E., Z.Ö.T., T.Ö., Design: M.E., Z.Ö.T., T.Ö., Data Collection or Processing: M.E., Z.Ö.T., T.Ö., Analysis or Interpretation: M.E., Z.Ö.T., T.Ö., Literature Search: M.E., Z.Ö.T., T.Ö., Writing: M.E., Z.Ö.T.

**Conflict of Interest:** No conflict of interest was declared by the authors.

**Financial Disclosure:** The authors declared that this study received no financial support.

Murat Erbezci[1], Zühal Özen Tunay[2], Taylan Öztürk[3]

[1]Private Practice, İzmir, Türkiye
[2]TOBB University of Economics and Technology Faculty of Medicine, Department of Ophthalmology, Ankara, Türkiye
[3]İzmir Tınaztepe University Faculty of Medicine, Department of Ophthalmology, İzmir, Türkiye

**Cite this article as:** Erbezci M, Özen Tunay Z, Öztürk T. Reply to Letter to the Editor Re: "Preferred Retinal Locus in Juvenile Macular Dystrophy". Turk J Ophthalmol. 2026;56:70-71

**Address for Correspondence:** Murat Erbezci, Private Practice, İzmir, Türkiye
**E-mail:** muraterbezci@gmail.com
**ORCID-ID:** orcid.org/0000-0003-2163-2157

**Received:** 04.01.2026
**Accepted:** 08.01.2026
**Publication Date:** 18.02.2026

**DOI:** 10.4274/tjo.galenos.2026.66806

## References

1. Erbezci M, Özen Tunay Z, Öztürk T. Preferred retinal locus in juvenile macular dystrophy. Turk J Ophthalmol. 2025;55:239-244.
2. Habib E. Letter to the editor re: "Preferred retinal locus in juvenile macular dystrophy". Turk J Ophthalmol. 2026;56:69-70.
3. Crossland MD, Rubin GS. The use of an infrared eyetracker to measure fixation stability. Optom Vis Sci. 2002;79:735-739.
4. Liu H, Bittencourt MG, Sophie R, Sepah YJ, Hanout M, Rentiya Z, Annam R, Scholl HP, Nguyen QD. Fixation stability measurement using two types of microperimetry devices. Transl Vis Sci Technol. 2015;4:3.
5. Erbezci M, Ozturk T. Preferred retinal locus locations in age-related macular degeneration. Retina. 2018;38:2372-2378.
6. Strauss RW, Muñoz B, Ho A, Jha A, Michaelides M, Cideciyan AV, Audo I, Birch DG, Hariri AH, Nittala MG, Sadda S, West S, Scholl HPN; ProgStar Study Group. Progression of Stargardt disease as determined by fundus autofluorescence in the retrospective progression of Stargardt disease study (ProgStar report no. 9). JAMA Ophthalmol. 2017;135:1232-1241.