

This site uses tracking information. Visit our [privacy policy](#). Click to [agree to this policy](#) and not see this again.


Q Advanced Search

Ophthalmology and Visual Sciences



Myelinated nerve fiber layer

Category(ies): Retina / Vitreous, Neuro-Ophthalmology

Contributors: [Jesse Vislisel, MD](#) (2013)

Lauren A. Tomlinson, MD; Oscar Lu, BS; and Sophia Chung, MD (2025)

Photographers: Brice Critser, CRA (*top image*); Alexandra Copple, CRA (*middle images*); and Stefani Karakas, CRA (*bottom image*)

Updated: August 18, 2025; Original: September 9, 2013



Myelination of the optic nerve fibers normally begins at the lateral geniculate body and ceases at the lamina cribosa. However, in some individuals areas of the retinal nerve fiber layer can also become myelinated. Classically, this finding is unilateral and peripapillary in location, appearing as a white, flame-shaped area with feathered borders as seen in the top photo. However, it can also present bilaterally in 7% of these patients as illustrated in the middle photo.⁽¹⁾ The bottom photo shows a less common presentation affecting a more extensive distribution of the peripheral nerve fibers. Note how the nerve fibers temporal to the macula respect the horizontal raphe, a concept not easily visualized under normal conditions.

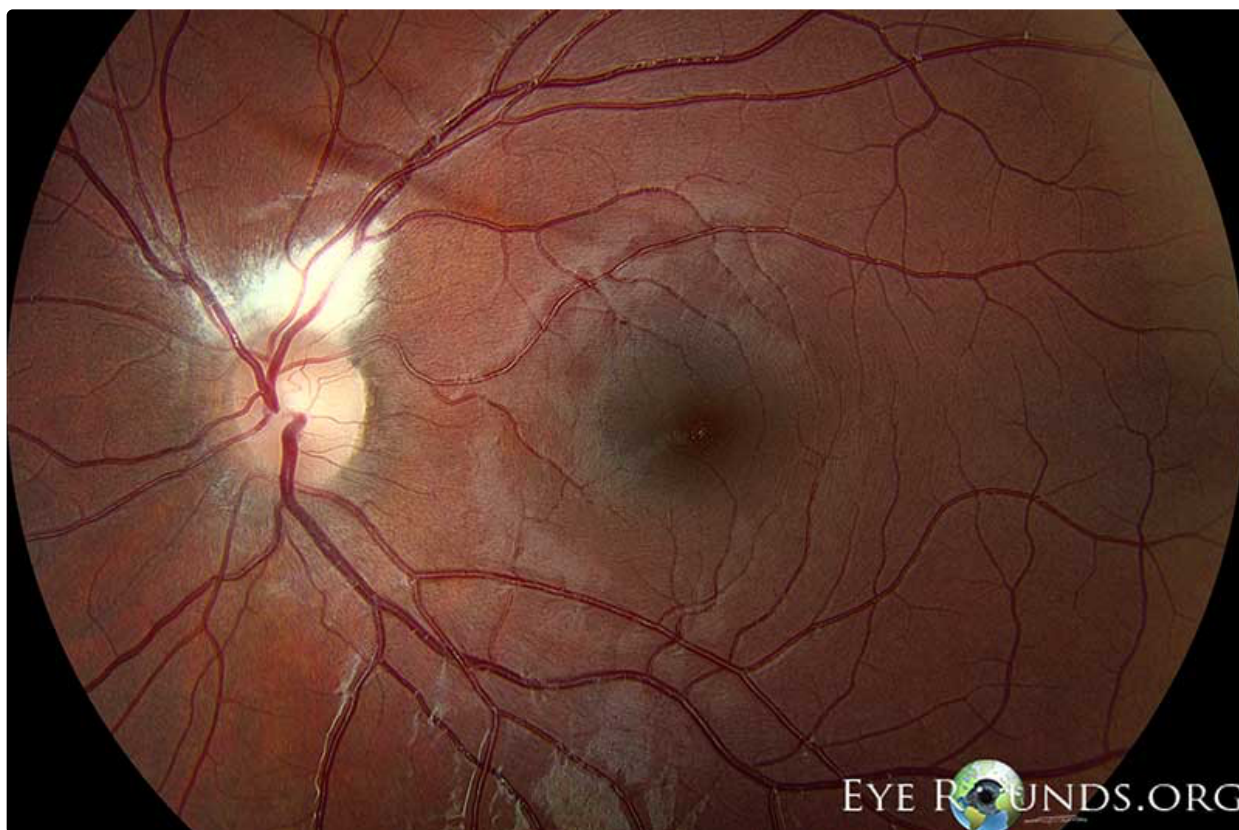
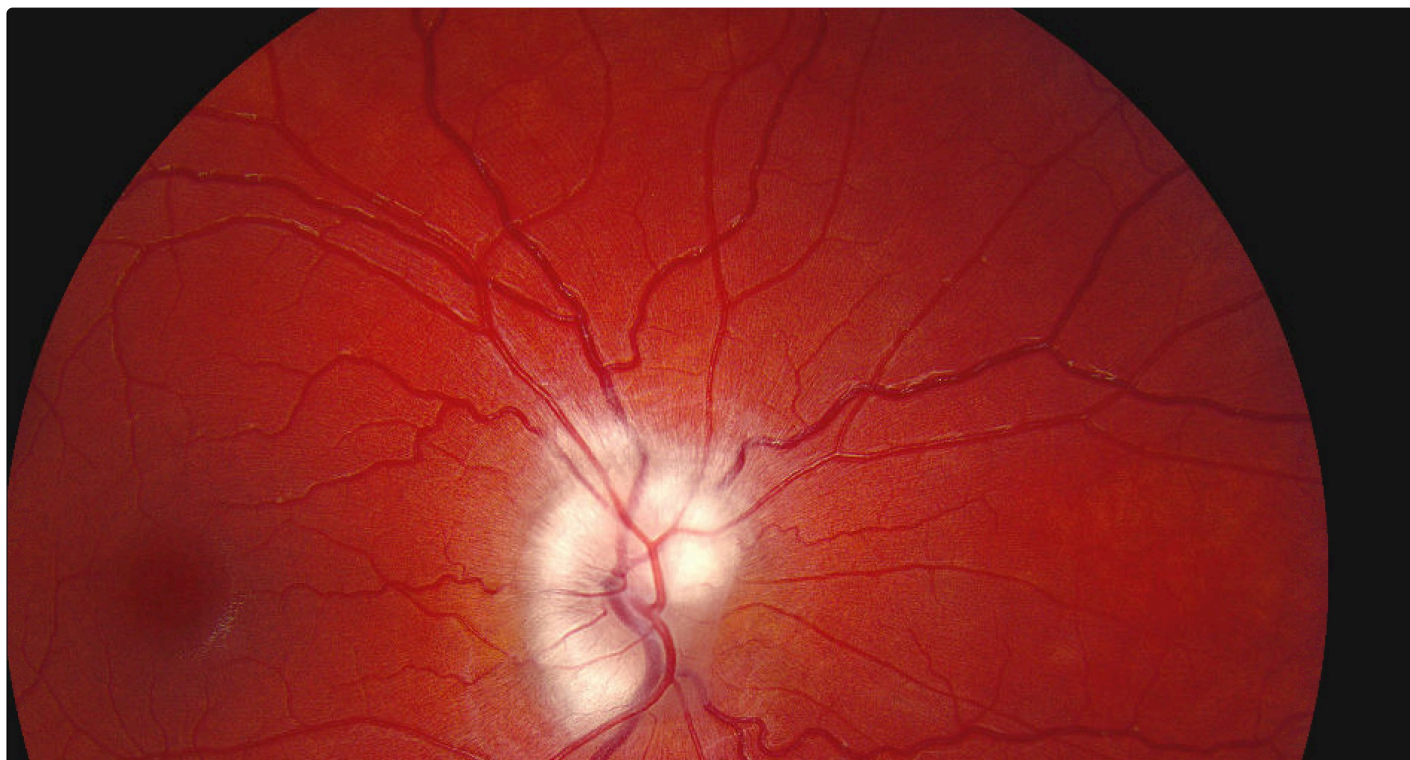


Figure 1. Fundus showing classic myelinated retinal nerve fiber layer.

[Enlarge](#)

[Download](#)



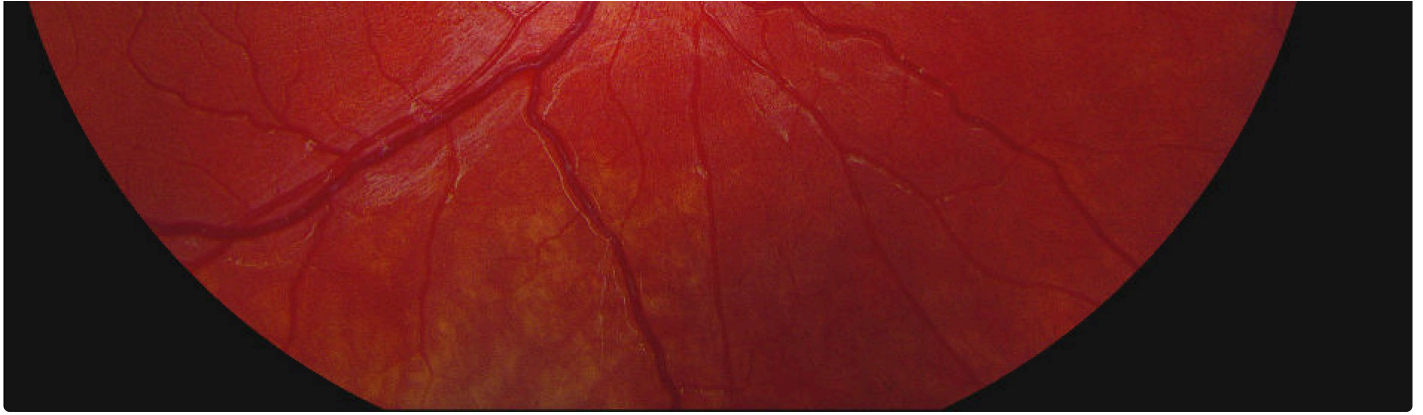


Figure 2a. Fundus showing bilateral myelinated retinal nerve fiber layer (OD).

[Enlarge](#)

[Download](#)

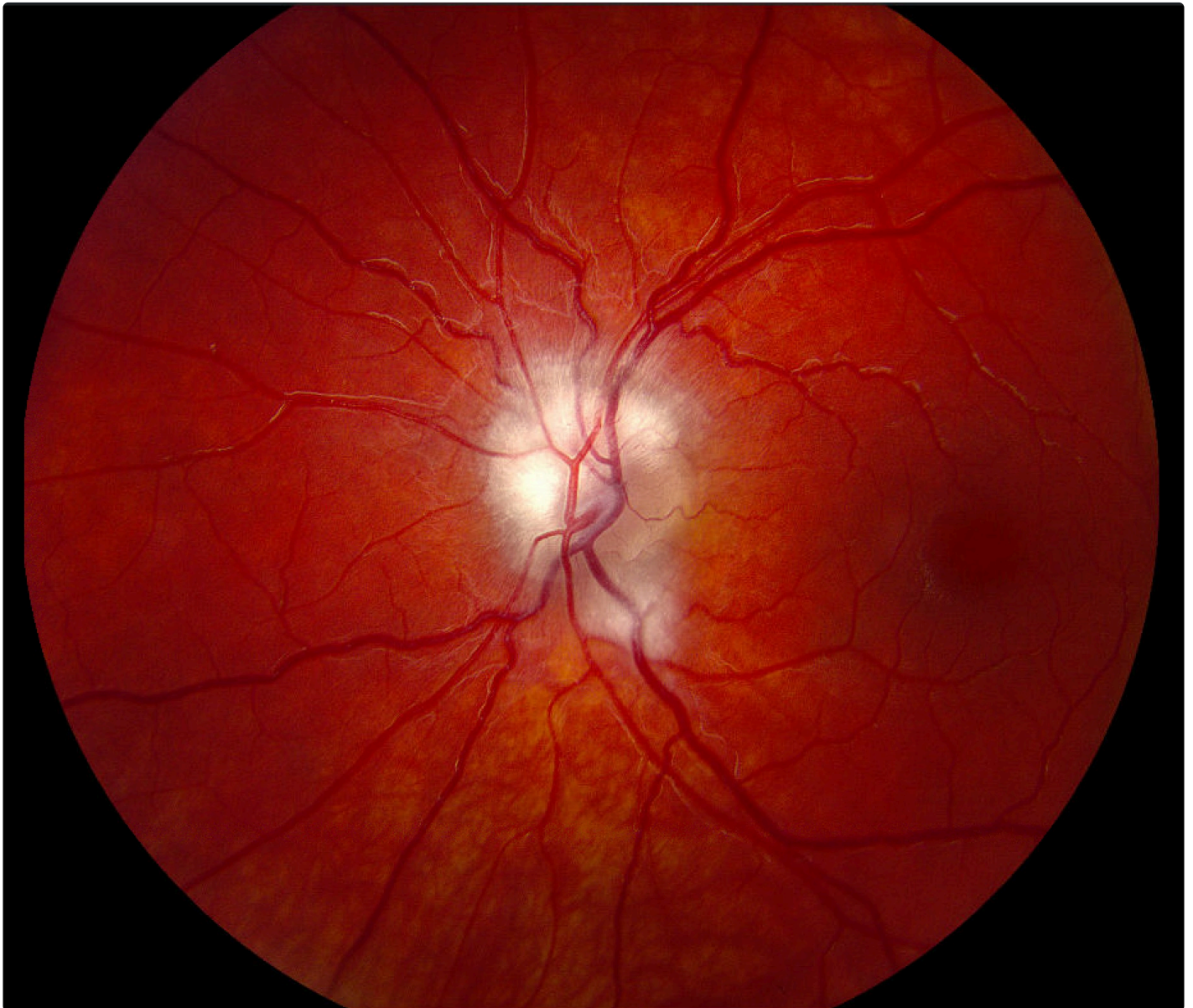


Figure 2b. Fundus showing bilateral myelinated retinal nerve fiber layer (OS).

 [Enlarge](#)

 [Download](#)

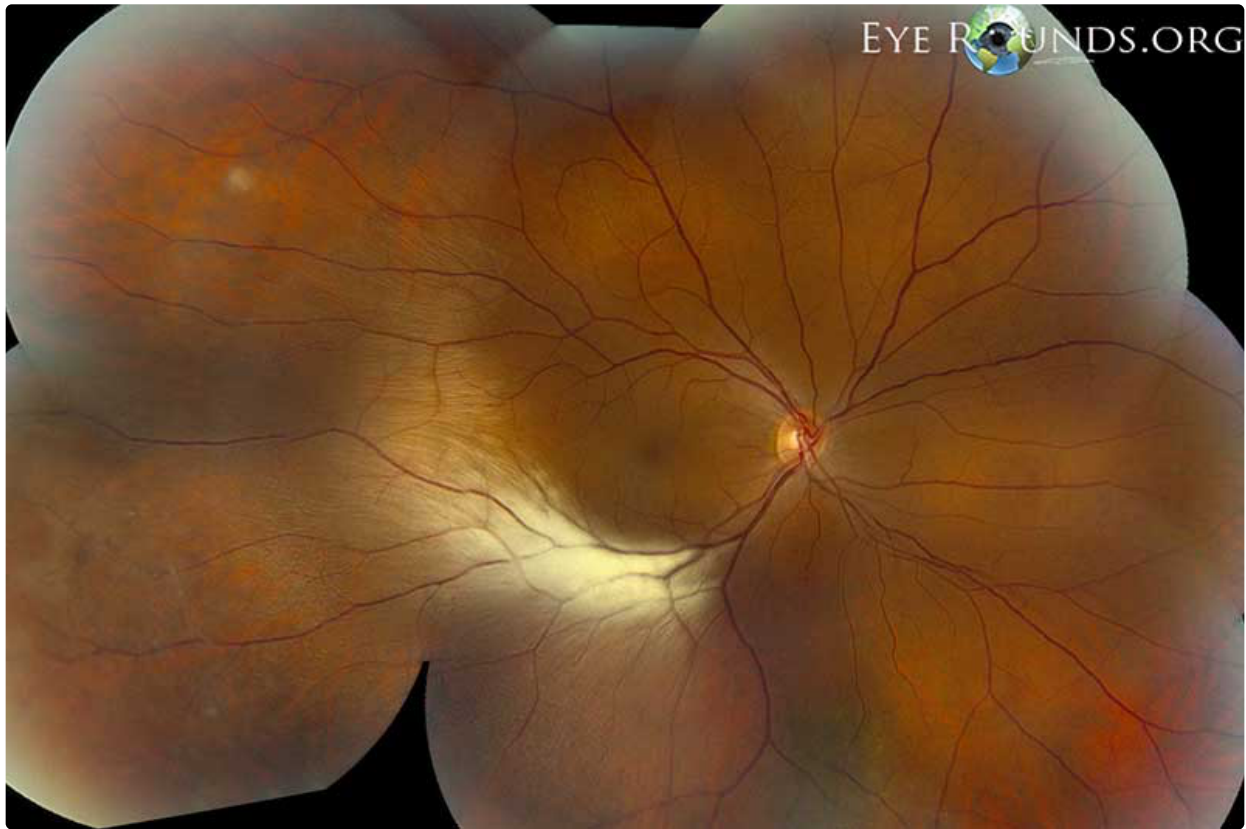


Figure 3. Extensive peripheral myelination of the retinal nerve fiber layer, representing a less common presentation.

 [Enlarge](#)

 [Download](#)

Reference

Straatsma BR, Foos RY, Heckenlively JR, Taylor GN. Myelinated retinal nerve fibers. American journal of ophthalmology. 1981;91(1):25–38. Available at: <http://www.ncbi.nlm.nih.gov/pubmed/7234927>.

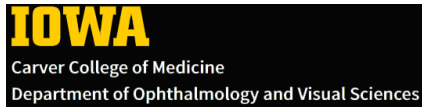
Suggested Citation

Vislisel J, Tomlinson LA, Lu O, Chung S. Myelinated Nerve Fiber Layer. EyeRounds.org. Updated August 18, 2025; Original September 9, 2013. Available from <https://www.EyeRounds.org/atlas/pages/myelinated-NFL.htm>

Image Permissions:



Ophthalmic Atlas Images by [EyeRounds.org](https://www.EyeRounds.org), [The University of Iowa](https://www.EyeRounds.org) are licensed under a [Creative Commons Attribution-NonCommercial-NoDerivs 3.0 Unported License](https://creativecommons.org/licenses/by-nc-nd/3.0/).



Address

University of Iowa
Roy J. and Lucille A. Carver
College of Medicine
Department of Ophthalmology
and Visual Sciences
200 Hawkins Drive
Iowa City, IA 52242

[Support Us](#)

Legal

Copyright © 2019 The University
of Iowa. All Rights Reserved
[Report an issue with this page](#)
[Web Privacy Policy I](#)
[Nondiscrimination Statement](#)

Related Links

[Cataract Surgery for Greenhorns](#)
[EyeTransillumination](#)
[Gonioscopy.org](#)
[Iowa Glaucoma Curriculum](#)
[Iowa Wet Lab](#)
[Patient Information](#)
[Stone Rounds](#)
[The Best Hits Bookshelf](#)

EyeRounds Social Media

Follow



Receive notification of new cases,
[sign up here](#)
[Contact Us](#)
[Submit a Suggestion](#)