

ISSN 2757-8135



EUROPEAN  
**EYE**  
RESEARCH

Vol. 2 / No 4 / December 2022

[www.europeaneyeresearch.com](http://www.europeaneyeresearch.com)



ISSN - 2757-8135

EUROPEAN  
**EYE**  
RESEARCH

**EDITOR-IN-CHIEF**

**Filiz Afrashi, MD**

Ege University Faculty of Medicine, Ophthalmology, Izmir, Türkiye

**ASSOCIATE EDITORS**

**Cezmi Akkin, MD**

Ege University Faculty of Medicine, Ophthalmology, Izmir, Türkiye

**Melis Palamar, MD**

Ege University Faculty of Medicine, Ophthalmology, Izmir, Türkiye

**Suzan Guven Yilmaz, MD**

Ege University Faculty of Medicine, Ophthalmology, Izmir, Türkiye

**Elif Demirkilinc Biler, MD**

Ege University Faculty of Medicine, Ophthalmology, Izmir, Türkiye

**Cumali Degirmencı, MD**

Ege University Faculty of Medicine, Ophthalmology, Izmir, Türkiye

**INTERNATIONAL ADVISORY BOARD**

**Iqbal Ike Ahmed, MD**

University of Toronto, Ophthalmology, Toronto, Canada

**Jose Fernando Arevalo, MD, PhD**

Johns Hopkins Bayview Medical Center, Ophthalmology, Baltimore, USA

**Carl Claes, MD**

Claes Retina Clinic, Ophthalmology, Antwerp, Belgium

**Murat Dogru, MD**

Keio University, Ophthalmology, Tokyo, Japan

**Arman Mashayekhi, MD**

Mayo Clinic, Ophthalmology, Jacksonville, Miami, USA

**Miguel Angel Materin, MD, PhD**

Duke University School of Medicine, Ophthalmology, North Carolina, USA

**Gulgur Tezel, MD**

Columbia University, Ophthalmology, New York, USA

**Tongalp Tezel, MD**

Columbia University, Ophthalmology, New York, USA

**LANGUAGE EDITOR**

**Melis Palamar, MD**

Ege University Faculty of Medicine, Ophthalmology, Izmir, Türkiye

**STATISTICS EDITOR**

**Kivanc Yuksel, PhD**

Ege University Faculty of Medicine, Biostatistics and Medical Informatics, Izmir, Türkiye

**Owner**

Melis Palamar, MD

Ege Universitesi Tip Fakultesi, Goz Hastaliklari AD, Bornova, Izmir, Türkiye

Tel: +90 232 390 37 88

melispalamar@gmail.com

**Editor**

Filiz Afrashi, MD

Ege Universitesi Tip Fakultesi, Goz Hastaliklari AD, Bornova, Izmir, Türkiye

Tel: +90 232 390 37 88

afrashif@yahoo.com

**Contact:**

Publisher



Goztepe Mah. Fahrettin Kerim Gokay Cad. No: 200 Da: 2, Goztepe, Kadikoy, Istanbul, Türkiye

Phone: +90-216-550 61 11 Fax: +90-216-550 61 12

e-mail: kare@karepb.com Web: kare@karepb.com



## NATIONAL ADVISORY BOARD

### **Yasemin Akcay, MD**

Ege University Faculty of Medicine, Medical Biochemistry, Izmir, Türkiye

### **Zuleyha Yalniz Akkaya, MD**

Ankara Research and Training Hospital, Ophthalmology, Ankara, Türkiye

### **Zeynep Aktas, MD**

Gazi University Faculty of Medicine, Ophthalmology, Ankara, Türkiye

### **Gul Arikan, MD**

Dokuz Eylul University Faculty of Medicine, Ophthalmology, Izmir, Türkiye

### **Halil Ates, MD**

Private Practice, Ophthalmology, Izmir, Türkiye

### **Mine Esen Baris, MD**

Ege University Faculty of Medicine, Ophthalmology, Izmir, Türkiye

### **Cenk Can, MD**

Ege University Faculty of Medicine, Pharmacology, Izmir, Türkiye

### **Naim Ceylan, MD**

Ege University Faculty of Medicine, Radiology, Izmir, Türkiye

### **Cagatay Caglar, MD**

Hitit University Faculty of Medicine, Ophthalmology, Corum, Türkiye

### **Mehmet Citirik, MD**

Ulucanlar Research and Training Hospital, Ophthalmology, Ankara, Türkiye

### **Sibel Demirel, MD**

Ankara University Faculty of Medicine, Ophthalmology, Ankara, Türkiye

### **Oya Donmez, MD**

Izmir Tinaztepe University, Ophthalmology, Izmir, Türkiye

### **Sema Oruc Dundar, MD**

Adnan Menderes University Faculty of Medicine, Ophthalmology,  
Aydin, Türkiye

### **Sait Egrilmez, MD**

Private Practice, Ophthalmology, Izmir, Türkiye

### **Sinan Emre, MD**

Ekol Eye Hospital, Ophthalmology, Izmir, Türkiye

### **Muhsin Eraslan, MD**

Marmara University Faculty of Medicine, Ophthalmology, Istanbul, Türkiye

### **Korhan Fazil, MD**

Beyoglu Eye Research and Training Hospital, Ophthalmology, Istanbul, Türkiye

### **Sirel Gur Gungor, MD**

Baskent University Faculty of Medicine, Ophthalmology, Ankara, Türkiye

### **Murat Hasanreisoglu, MD**

Koc University Faculty of Medicine, Ophthalmology, Istanbul, Türkiye

### **Sibel Kadaiyifcilar, MD**

Hacettepe University Faculty of Medicine, Ophthalmology, Ankara, Türkiye

### **Mahmut Kaya, MD**

Dokuz Eylul University Faculty of Medicine, Ophthalmology, Izmir, Türkiye

### **Ozcan Kayikcioglu, MD**

Celal Bayar University Faculty of Medicine, Ophthalmology, Manisa, Türkiye

### **Tolga Kocaturk, MD**

Adnan Menderes University Faculty of Medicine, Ophthalmology,  
Aydin, Türkiye

### **Bengu Ekinci Koktekir, MD**

Selcuk University Faculty of Medicine, Ophthalmology, Konya, Türkiye

### **Tuncay Kusbeci, MD**

Bozyaka Research and Training Hospital, Ophthalmology, Izmir, Türkiye

### **Jale Mentes, MD**

Ege University Faculty of Medicine, Ophthalmology, Izmir, Türkiye

### **Serhad Nalcaci, MD**

Ege University Faculty of Medicine, Ophthalmology, Izmir, Türkiye

### **Huseyin Onay, MD**

Multigen Genetic Diseases Assessment Center, Medical Genetics,  
Izmir, Türkiye

### **Altan Atakan Ozcan, MD**

Cukurova University Faculty of Medicine, Ophthalmology, Adana, Türkiye

### **Taylan Ozturk, MD**

Dokuz Eylul University Faculty of Medicine, Ophthalmology, Izmir, Türkiye

### **Gozde Sahin, MD**

Balikesir University Faculty of Medicine, Ophthalmology, Balikesir, Türkiye

### **Ali Osman Saatci, MD**

Dokuz Eylul University Faculty of Medicine, Ophthalmology, Izmir, Türkiye

### **Ozlem Barut Selver, MD**

Ege University Faculty of Medicine, Ophthalmology, Izmir, Türkiye

### **Hande Taylan Sekerooglu, MD**

Hacettepe University Faculty of Medicine, Ophthalmology, Ankara, Türkiye

### **Huseyin Cem Simsek, MD**

Mugla Sitki Kocman University Faculty of Medicine, Ophthalmology,  
Mugla, Türkiye

### **Didar Ucar, MD**

Cerrahpasa University Faculty of Medicine, Ophthalmology, Istanbul,  
Türkiye

### **Onder Uretmen, MD**

Ege University Faculty of Medicine, Ophthalmology, Izmir, Türkiye

### **Canan Asli Utine, MD**

Dokuz Eylul University Faculty of Medicine, Ophthalmology, Izmir, Türkiye

### **Ayse Yagci, MD**

Private Practice, Ophthalmology, Izmir, Türkiye

### **Banu Yaman, MD**

Ege University Faculty of Medicine, Medical Pathology, Izmir, Türkiye

### **Yusuf Yildirim, MD**

Beyoglu Eye Research and Training Hospital, Ophthalmology,  
Istanbul, Türkiye

### **Mehmet Ozgur Zengin, MD**

Izmir Katip Celebi University, Ophthalmology, Izmir, Türkiye



## CONTENTS

Editorial .....	VII
-----------------	-----

### ORIGINAL ARTICLES

<b>Visual and refractive effects of collagen cross-linking in keratoconus</b> <i>Koksaldi S, Utine CA, Kayabasi M, Ozbek Z</i> .....	147–152
<b>Evaluation of the optic disk and macular vessel density in inactive thyroid eye disease using optical coherence tomography angiography</b> <i>Berk Z, Dirim AB, Turker IC, Sendul SY, Demir M, Akbas Ozyurek EB, Guven D</i> .....	153–159
<b>Optical coherence tomography angiography evaluation of retinochoroidal and optic disc microvascular morphology in thyroid ophthalmopathy</b> <i>Erogul O, Gobeka HH, Akdogan M, Dogan M, Kasikci M, Caliskan A, Eryigit Erogul L</i> .....	160–166
<b>Treatment results of standalone XEN-45 implantation in patients with primary and secondary open-angle glaucoma</b> <i>Erbey M, Esen Baris M, Ates H, Guven Yilmaz S</i> .....	167–172
<b>Visual outcome of macular hole surgery based on pre-operative hole configuration in optical coherence tomography from a developing country-Nepal</b> <i>Piya S, Singh S, Gurung J, Khadka S, Thapa BB, Gurung S</i> .....	173–179

### REVIEW

<b>The revival of an old term with optical coherence tomography: Bacillary layer detachment</b> <i>Durmaz Engin C, Saatci AO</i> .....	180–188
---	---------

### CASE REPORTS

<b>Scedosporium apiospermum keratitis treated with voriconazole</b> <i>Yildirim N, Oz Y, Aydin Yaz Y</i> .....	189–193
<b>Recovery of visual field in early treated optic nerve sheath meningioma: A case report</b> <i>Serefli Gunes S, Gokmen H</i> .....	194–198
<b>Bilateral herpes simplex epithelial keratitis in a patient with pemphigus foliaceus</b> <i>Mammadov T, Utine CA</i> .....	199–202
<b>Thanks to the reviewers .....</b>	203



ISSN - 2757-8135

EUROPEAN  
**EYE**  
RESEARCH

**EDITOR-IN-CHIEF**

**Filiz Afrashi, MD**

Ege University Faculty of Medicine, Ophthalmology, Izmir, Türkiye

**ASSOCIATE EDITORS**

**Cezmi Akkin, MD**

Ege University Faculty of Medicine, Ophthalmology, Izmir, Türkiye

**Melis Palamar, MD**

Ege University Faculty of Medicine, Ophthalmology, Izmir, Türkiye

**Suzan Guven Yilmaz, MD**

Ege University Faculty of Medicine, Ophthalmology, Izmir, Türkiye

**Elif Demirkilinc Biler, MD**

Ege University Faculty of Medicine, Ophthalmology, Izmir, Türkiye

**Cumali Degirmencı, MD**

Ege University Faculty of Medicine, Ophthalmology, Izmir, Türkiye

**INTERNATIONAL ADVISORY BOARD**

**Iqbal Ike Ahmed, MD**

University of Toronto, Ophthalmology, Toronto, Canada

**Jose Fernando Arevalo, MD, PhD**

Johns Hopkins Bayview Medical Center, Ophthalmology, Baltimore, USA

**Carl Claes, MD**

Claes Retina Clinic, Ophthalmology, Antwerp, Belgium

**Murat Dogru, MD**

Keio University, Ophthalmology, Tokyo, Japan

**Arman Mashayekhi, MD**

Mayo Clinic, Ophthalmology, Jacksonville, Miami, USA

**Miguel Angel Materin, MD, PhD**

Duke University School of Medicine, Ophthalmology, North Carolina, USA

**Gulgur Tezel, MD**

Columbia University, Ophthalmology, New York, USA

**Tongalp Tezel, MD**

Columbia University, Ophthalmology, New York, USA

**LANGUAGE EDITOR**

**Melis Palamar, MD**

Ege University Faculty of Medicine, Ophthalmology, Izmir, Türkiye

**STATISTICS EDITOR**

**Kivanc Yuksel, PhD**

Ege University Faculty of Medicine, Biostatistics and Medical Informatics, Izmir, Türkiye

**Owner**

Melis Palamar, MD

Ege Universitesi Tip Fakultesi, Goz Hastaliklari AD, Bornova, Izmir, Türkiye

Tel: +90 232 390 37 88

melispalamar@gmail.com

**Editor**

Filiz Afrashi, MD

Ege Universitesi Tip Fakultesi, Goz Hastaliklari AD, Bornova, Izmir, Türkiye

Tel: +90 232 390 37 88

afrashif@yahoo.com

**Contact:**

Publisher



Goztepe Mah. Fahrettin Kerim Gokay Cad. No: 200 Da: 2, Goztepe, Kadikoy, Istanbul, Türkiye

Phone: +90-216-550 61 11 Fax: +90-216-550 61 12

e-mail: kare@karepb.com Web: kare@karepb.com



## NATIONAL ADVISORY BOARD

### **Yasemin Akcay, MD**

Ege University Faculty of Medicine, Medical Biochemistry, Izmir, Türkiye

### **Zuleyha Yalniz Akkaya, MD**

Ankara Research and Training Hospital, Ophthalmology, Ankara, Türkiye

### **Zeynep Aktas, MD**

Gazi University Faculty of Medicine, Ophthalmology, Ankara, Türkiye

### **Gul Arikan, MD**

Dokuz Eylul University Faculty of Medicine, Ophthalmology, Izmir, Türkiye

### **Halil Ates, MD**

Private Practice, Ophthalmology, Izmir, Türkiye

### **Mine Esen Baris, MD**

Ege University Faculty of Medicine, Ophthalmology, Izmir, Türkiye

### **Cenk Can, MD**

Ege University Faculty of Medicine, Pharmacology, Izmir, Türkiye

### **Naim Ceylan, MD**

Ege University Faculty of Medicine, Radiology, Izmir, Türkiye

### **Cagatay Caglar, MD**

Hitit University Faculty of Medicine, Ophthalmology, Corum, Türkiye

### **Mehmet Citirik, MD**

Ulucanlar Research and Training Hospital, Ophthalmology, Ankara, Türkiye

### **Sibel Demirel, MD**

Ankara University Faculty of Medicine, Ophthalmology, Ankara, Türkiye

### **Oya Donmez, MD**

Izmir Tinaztepe University, Ophthalmology, Izmir, Türkiye

### **Sema Oruc Dundar, MD**

Adnan Menderes University Faculty of Medicine, Ophthalmology,  
Aydin, Türkiye

### **Sait Egrilmez, MD**

Private Practice, Ophthalmology, Izmir, Türkiye

### **Sinan Emre, MD**

Ekol Eye Hospital, Ophthalmology, Izmir, Türkiye

### **Muhsin Eraslan, MD**

Marmara University Faculty of Medicine, Ophthalmology, Istanbul, Türkiye

### **Korhan Fazil, MD**

Beyoglu Eye Research and Training Hospital, Ophthalmology, Istanbul, Türkiye

### **Sirel Gur Gungor, MD**

Baskent University Faculty of Medicine, Ophthalmology, Ankara, Türkiye

### **Murat Hasanreisoglu, MD**

Koc University Faculty of Medicine, Ophthalmology, Istanbul, Türkiye

### **Sibel Kadaiyifcilar, MD**

Hacettepe University Faculty of Medicine, Ophthalmology, Ankara, Türkiye

### **Mahmut Kaya, MD**

Dokuz Eylul University Faculty of Medicine, Ophthalmology, Izmir, Türkiye

### **Ozcan Kayikcioglu, MD**

Celal Bayar University Faculty of Medicine, Ophthalmology, Manisa, Türkiye

### **Tolga Kocaturk, MD**

Adnan Menderes University Faculty of Medicine, Ophthalmology,  
Aydin, Türkiye

### **Bengu Ekinci Koktekir, MD**

Selcuk University Faculty of Medicine, Ophthalmology, Konya, Türkiye

### **Tuncay Kusbeci, MD**

Bozyaka Research and Training Hospital, Ophthalmology, Izmir, Türkiye

### **Jale Mentes, MD**

Ege University Faculty of Medicine, Ophthalmology, Izmir, Türkiye

### **Serhad Nalcaci, MD**

Ege University Faculty of Medicine, Ophthalmology, Izmir, Türkiye

### **Huseyin Onay, MD**

Multigen Genetic Diseases Assessment Center, Medical Genetics,  
Izmir, Türkiye

### **Altan Atakan Ozcan, MD**

Cukurova University Faculty of Medicine, Ophthalmology, Adana, Türkiye

### **Taylan Ozturk, MD**

Dokuz Eylul University Faculty of Medicine, Ophthalmology, Izmir, Türkiye

### **Gozde Sahin, MD**

Balikesir University Faculty of Medicine, Ophthalmology, Balikesir, Türkiye

### **Ali Osman Saatci, MD**

Dokuz Eylul University Faculty of Medicine, Ophthalmology, Izmir, Türkiye

### **Ozlem Barut Selver, MD**

Ege University Faculty of Medicine, Ophthalmology, Izmir, Türkiye

### **Hande Taylan Sekerooglu, MD**

Hacettepe University Faculty of Medicine, Ophthalmology, Ankara, Türkiye

### **Huseyin Cem Simsek, MD**

Mugla Sitki Kocman University Faculty of Medicine, Ophthalmology,  
Mugla, Türkiye

### **Didar Ucar, MD**

Cerrahpasa University Faculty of Medicine, Ophthalmology, Istanbul,  
Türkiye

### **Onder Uretmen, MD**

Ege University Faculty of Medicine, Ophthalmology, Izmir, Türkiye

### **Canan Asli Utine, MD**

Dokuz Eylul University Faculty of Medicine, Ophthalmology, Izmir, Türkiye

### **Ayse Yagci, MD**

Private Practice, Ophthalmology, Izmir, Türkiye

### **Banu Yaman, MD**

Ege University Faculty of Medicine, Medical Pathology, Izmir, Türkiye

### **Yusuf Yildirim, MD**

Beyoglu Eye Research and Training Hospital, Ophthalmology,  
Istanbul, Türkiye

### **Mehmet Ozgur Zengin, MD**

Izmir Katip Celebi University, Ophthalmology, Izmir, Türkiye



## CONTENTS

Editorial .....	VII
-----------------	-----

### ORIGINAL ARTICLES

<b>Visual and refractive effects of collagen cross-linking in keratoconus</b> <i>Koksaldi S, Utine CA, Kayabasi M, Ozbek Z</i> .....	147–152
<b>Evaluation of the optic disk and macular vessel density in inactive thyroid eye disease using optical coherence tomography angiography</b> <i>Berk Z, Dirim AB, Turker IC, Sendul SY, Demir M, Akbas Ozyurek EB, Guven D</i> .....	153–159
<b>Optical coherence tomography angiography evaluation of retinochoroidal and optic disc microvascular morphology in thyroid ophthalmopathy</b> <i>Erogul O, Gobeka HH, Akdogan M, Dogan M, Kasikci M, Caliskan A, Eryigit Erogul L</i> .....	160–166
<b>Treatment results of standalone XEN-45 implantation in patients with primary and secondary open-angle glaucoma</b> <i>Erbey M, Esen Baris M, Ates H, Guven Yilmaz S</i> .....	167–172
<b>Visual outcome of macular hole surgery based on pre-operative hole configuration in optical coherence tomography from a developing country-Nepal</b> <i>Piya S, Singh S, Gurung J, Khadka S, Thapa BB, Gurung S</i> .....	173–179

### REVIEW

<b>The revival of an old term with optical coherence tomography: Bacillary layer detachment</b> <i>Durmaz Engin C, Saatci AO</i> .....	180–188
---	---------

### CASE REPORTS

<b>Scedosporium apiospermum keratitis treated with voriconazole</b> <i>Yildirim N, Oz Y, Aydin Yaz Y</i> .....	189–193
<b>Recovery of visual field in early treated optic nerve sheath meningioma: A case report</b> <i>Serefli Gunes S, Gokmen H</i> .....	194–198
<b>Bilateral herpes simplex epithelial keratitis in a patient with pemphigus foliaceus</b> <i>Mammadov T, Utine CA</i> .....	199–202
<b>Thanks to the reviewers .....</b>	203