

# ARCHIVES OF OPHTHALMOLOGY

The ARCHIVES OF OPHTHALMOLOGY is a member of the consortium of AMA journals listed below. The complete text of all AMA journals is available online directly from AMA as well as the following aggregators: Dialog Information Services, Proquest, Ovid Technologies, Inc, Gale Research, and EBSCO.

## The Journal of the American Medical Association (JAMA)

Archives of Dermatology  
Archives of Facial Plastic Surgery  
Archives of General Psychiatry  
Archives of Internal Medicine  
Archives of Neurology  
Archives of Ophthalmology  
Archives of Otolaryngology-Head & Neck Surgery  
Archives of Pediatrics & Adolescent Medicine  
Archives of Surgery

The ARCHIVES OF OPHTHALMOLOGY (ISSN 0003-9950) is published monthly by the American Medical Association, 515 N State St, Chicago, IL 60610-0946, and is an official publication of the Association. The ARCHIVES OF OPHTHALMOLOGY reaches more than 18 600 readers in over 94 countries each month. Periodicals postage paid at Chicago, IL, and at additional mailing offices. GST registration number 12622 5556 RT. Canada Post International Publications Mail (Canadian Distribution) Sales Agreement No. 318957. Printed in the USA.

Continuing the Publication Founded by Herman Knapp, MD, in 1869. The objective of the ARCHIVES OF OPHTHALMOLOGY is education: To inform its readers of progress, problems, and pertinent research in the practice of ophthalmology through the publication of original contributions and observations.

### SUBSCRIPTION RATES—

	Individual Print	Individual Print & Online	Individual Online Only
US	\$190	\$200	\$150
Americas	\$245	\$260	\$195
Rest of World	£170	£180	£135
	Institution Print	Institution Print & Online	Institution Online Only
US	\$355	\$375	\$285
Americas	\$465	\$490	\$370
Rest of World	£300	£315	£240

Rates for residents and medical students available.

**CHANGE OF ADDRESS—**POSTMASTER, send all address changes to ARCHIVES OF OPHTHALMOLOGY, c/o Subscriber Services, American Medical Association, 515 N State St, Chicago, IL 60610. Please notify us of address change at least 6 weeks in advance to ensure uninterrupted service. Include both old and new addresses, a recent mailing label, and new ZIP code. For mailing addresses outside the United States and the Americas, see below.

**SUBSCRIPTION INFORMATION—**For information about subscribing to any of the AMA publications, change of address, missing issues, or purchasing back issues in the US and the Americas please contact Unified Services Center, American Medical Association, PO Box 10946, Chicago, IL 60610-0946, or call (800) 262-2350 or (312) 670-SUBS (670-7827) between 8:30 AM and 4:30 PM CST. Fax: (312) 464-5831. E-mail: ama-subs@ama-assn.org. For mailing addresses in the Rest of the World contact JAMA & Archives Journals, American Medical Association, Tower House, Sovereign Park, Market Harborough, Leicestershire LE15 9EF, England. Telephone: +44 (0) 1858-438880. Fax: +44 (0) 1858-434958. E-mail: amasubscription.co.uk.

**REPRINTS—**Authors place their reprint order at the time the edited typescript is reviewed and should allow 4 to 6 weeks for delivery following publication. Requests for individual reprints should be sent directly to the author at the address shown in the article.

For bulk reprint orders for distribution by commercial organizations, please contact Wanda Bartolotta, 2441 84th St, Brooklyn, NY 11214. Phone: (718) 946-7424. Fax: (718) 946-7372. E-mail: wanda\_bartolotta@ama-assn.org. For reprint orders in limited quantities for distribution by educational organizations and for author reprints, please contact Reprints Coordinator, 515 N State St, Chicago, IL 60610. Phone: (312) 464-4594. Fax: (312) 464-4849.

**PERMISSIONS—**Contact Rhonda Bailey, Permissions Assistant, 515 N State St, Chicago, IL 60610. Phone: (312) 464-2513.

**ADVERTISING PRINCIPLES—**Each advertisement in this issue has been reviewed and complies with the principles governing advertising in AMA scientific publications. A copy of these principles is available on request. The appearance of advertising in AMA publications is not an AMA guarantee or endorsement of the product or the claims made for the product by the manufacturer.

**WORLD WIDE WEB ADDRESS—**<http://www.ama-assn.org>

**OPHTHALMOLOGY HOME PAGE—**<http://www.archophthalmol.com>

## Publication Staff

Offices: 515 N State St, Chicago, IL 60610

### Editorial Processing Department

**Division Director:** Cheryl Iverson  
**Department Director:** Paula Glitman  
**Copyediting Manager:** Brenda Gregoline  
**Freelance Copyediting Manager:** Diane L. Cannon  
**Freelance Copyediting Coordinators:** Lauren B. Fischer  
Connie Manno

### Electronic Editing Specialist:

Paul Frank  
**Assistant Electronic Editing Specialist:** Monica Mungle

### Senior Copy Editor:

Vickey Golden

### Copy Editors:

Juana N. Llorens  
Rachel Novickas  
Cheryl L. Tobey

### Editorial Assistant:

Wanda Hill

### Scientific Publications & Multimedia Applications

**Assistant to the Editor:** Helga Fritz

### Scientific Online Resources

**Director:** Margaret Winker, MD  
**Electronic Media Department Director:** Michelle Kurzynski  
**Associate Web Editors:** Katherine Behar  
Erin M. Giannini  
**Web Office Manager:** Marla A. Hall

### Specialty Journal Division Office

**Manager, Marketing Services:** Geoffrey A. Flick  
**Assistant to the Publisher:** Christine Hearne

### Circulation & Content Marketing Division

**Administrative Assistant:** Millette Jackson-Bates

### Circulation Processing Department

**Director:** Karen Howes  
**Circulation Systems Manager:** Alfred Tomaselli  
**Circulation Specialists:** Reginald Jordan  
Kathryn Osten  
**Assistant Application Administrator:** Julie Burton

### Circulation Development Department

**Director:** Bina Oza  
**Circulation Marketing Managers:** Vida Damijonaitis  
Donna Goldman  
Michael McGraw  
**Circulation Marketing Specialist:** Sandra Garzon

### Licensing & Permissions Department

**Director:** Norman Frankel  
**Permissions:** Rhonda Bailey

### Production & Distribution Division

**Directors:** Karen Adams-Taylor, Paul Gasecki, Vanessa Hayden  
**Managers:** David Antos, Karen Branham, Debbie Camp, Diane Darnell, Karl Elvin, Betty Frigerio, Terri Hanley, Mary Ellen Johnston, Carole Piszker, Susan Price, Charl Richey, Carmela Ware  
**Production Assistant:** Kristy Kambanis  
**Production Associates and Specialists:** Advertising and Production Services:

LaWanda Brown, Susan Chiara, Mary Anne Donley, Brian McCartney, Sarah Powell, Denise Steinhauser, Ellen Yoshihara

**Composition:** Rebecca Aiken, Brenda Chandler-Grayer, Amy Evers, Fred Furtner, Mary Ann Kuranda, Sandra Lopez

### Database & New Media:

Bruce McGregor (indexer), Clifford O. Barrett, Gail Barrett, Regina Brownlee, Rowena F. Dagang, John Marcinek, La'son Diggs Sledge, Angela Smits

**Distribution:** Linda Alexander, Michelle Robinson

**Graphics:** Joe Amft, Noel Chaparro, Carolyn Hall, Maria Kowalkowski, Chris Meyer, JoAnne Weiskopf

### Proofreading:

Daniel James, Teresa H. Omiolek, Mary Kay Tinerella, Barbara Wojtowicz, Agnes A. Zarkadas

### Advertising

**Director, Advertising Sales:** Peter G. Messina  
**AMA Classified Advertising Department:** Thalia Moss, 800-262-2260  
**Advertising Office:** J. P. Cahill & Associates  
341 S Waiola Ave  
La Grange, IL 60525  
(708) 352-0322



# ARCHIVES

OF

# OPHTHALMOLOGY

OCTOBER 2001 VOLUME 119, NUMBER 10 PAGES 1409-1584

## CLINICAL SCIENCES

**A Randomized, Placebo-Controlled, Clinical Trial of High-Dose Supplementation With Vitamins C and E, Beta Carotene, and Zinc for Age-Related Macular Degeneration and Vision Loss: AREDS Report No. 8** 1417  
*Age-Related Eye Disease Study Research Group*

ARCHIVES EXPRESS

**A Randomized, Placebo-Controlled, Clinical Trial of High-Dose Supplementation With Vitamins C and E and Beta Carotene for Age-Related Cataract and Vision Loss: AREDS Report No. 9** 1439  
*Age-Related Eye Disease Study Research Group*

ARCHIVES EXPRESS

**Risk Factors for Age-Related Maculopathy: The Visual Impairment Project** 1455  
*Catherine A. McCarty, PhD, MPH; Bickol N. Mukesh, PhD; Cara L. Fu, GradDip (IT); Paul Mitchell, FRACO; Jie Jin Wang, Mmed, MBBS; Hugh R. Taylor, MD, FRACO*



**Light Exposure and the Risk of Age-Related Macular Degeneration: The Pathologies Oculaires Liées à l'Age (POLA) Study** 1463  
*Cécile Delcourt, PhD; Isabelle Carrière, MSc; Alice Ponton-Sanchez, MSc; Sylvie Fourrey, BSc; Annie Lacroux, MSc; Laure Papoz, PhD; for the POLA Study Group*



**One-Year Follow-up of Blood-Retinal Barrier and Retinal Thickness Alterations in Patients With Type 2 Diabetes Mellitus and Mild Nonproliferative Retinopathy** 1469  
*Conceição L. Lobo, MD, MSc; Rui C. Bernardes, MSc; J. R. Faria de Abreu, MD, PhD; José G. Cunha-Vaz, MD, PhD*



**Initial Stages of Posterior Vitreous Detachment in Healthy Eyes of Older Persons Evaluated by Optical Coherence Tomography** 1475  
*Eisuke Uchino, MD; Akinori Uemura, MD; Norio Ohba, MD, PhD*



**Symptoms Predictive for the Later Development of Retinal Breaks** 1483  
*Koen A. van Overdam, MD; Marijke Wefers Bettink-Remeijer, MD; Paul G. Mulder, PhD; Jan C. van Meurs, MD*



**Topical Treatment of Acute Adenoviral Keratoconjunctivitis With 0.2% Cidofovir and 1% Cyclosporine: A Controlled Clinical Pilot Study** 1487  
*Jost Hillenkamp, MD; Thomas Reinhard, MD; Rudolf S. Ross, MD; Daniel Böhringer, MD; Olaf Carlsburg, MD; Michael Roggendorf, MD; Erik De Clercq, MD, PhD; Erhard Godehardt, PhD; Rainer Sundmacher, MD*



**JAMA**  
&  
**ARCHIVES**  
**JOURNALS**  
American Medical Association

All articles published, including editorials, letters, and book reviews, represent the opinions of the authors and do not reflect the policy of the American Medical Association, the Editorial Board, or the institution with which the author is affiliated, unless this is clearly specified.

**Catherine D. DeAngelis, MD, MPH**  
Editor in Chief, Scientific Publications  
& Multimedia Applications

**Robert A. Musacchio, PhD**  
Senior Vice President,  
Publishing & Business Services

**Peter L. Payerli**  
Interim Vice President, Publishing  
Publisher

**Cheryl Iverson**  
Managing Editor

Copyright 2001 by the American Medical Association. All rights reserved.  
Reproduction without permission is prohibited.

**Optic Disc and Visual Field Changes in a Prospective Longitudinal Study of Patients With Glaucoma: Comparison of Scanning Laser Tomography With Conventional Perimetry and Optic Disc Photography**

Balwantray C. Chauhan, PhD;  
Terry A. McCormick, BA;  
Marcelo T. Nicolela, MD;  
Raymond P. LeBlanc, MD

1492



**Effects of Cyclosporin A on Human Conjunctival Fibroblasts**

Andrea Leonardi, MD;  
Giuseppe DeFranchis, MD;  
Iva A. Fregona, PhD;  
Daniele Violato;  
Mario Plebani, MD;  
Antonio G. Secchi, MD

1512



**“Masked” Pseudoexfoliation Syndrome in Unoperated Eyes With Circular Posterior Synechiae: Clinical–Electron Microscopic Correlation**

Christian Y. Mardin, MD, EBOD;  
Ursula Schlötzer-Schrehardt, PhD;  
Gottfried O. H. Naumann, MD

1500



**Pharmacokinetics and Toxicity of Intravitreal Chemotherapy for Primary Intraocular Lymphoma**

Gisela Velez, MD, MPH; Peng Yuan, PhD;  
Cynthia Sung, PhD; Ginger Tansey, DVM;  
George F. Reed, PhD; Chi-Chao Chan, MD;  
Robert B. Nussenblatt, MD;  
Michael R. Robinson, MD

1518



**LABORATORY SCIENCES**

**Gelatinase B in Vernal Keratoconjunctivitis**

Ahmed M. Abu El-Asrar, MD, PhD;  
Ilse Van Aelst, BLT;  
Samir Al-Mansouri, MD;  
Luc Missotten, MD, PhD;  
Ghislain Opdenakker, MD, PhD;  
Karel Geboes, MD, PhD

1505



**EPIDEMIOLOGY AND BIostatISTICS**

**Ocular Manifestations in Children Born After In Vitro Fertilization**

Irene Anteby, MD; Evelyne Cohen, CO;  
Eyal Anteby, MD; David BenEzra, MD, PhD

1525



**SPECIAL ARTICLE**

**Thomas Colledge: A Pioneering British Eye Surgeon in China**

James G. Ravin, MD

1530



**ARCHIVES**  
OF  
**OPHTHALMOLOGY**

*Editor:*

**Daniel M. Albert, MD, MS**  
Suite 102  
2870 University Ave  
Madison, WI 53705  
(608) 262-7769  
Fax: (608) 265-5896  
lchayes@facstaff.wisc.edu

*Associate Editors:*

**Justin L. Gottlieb, MD**  
**Leonard A. Levin, MD, PhD**  
Madison, Wis

*Editorial Manager:*

**Laura Hayes Hoffman**  
Madison, Wis

*Office Manager:*

**Eleanor Albert, MA**  
Madison, Wis

*Ophthalmic Molecular Genetics:*

**Edwin M. Stone, MD, PhD**  
Iowa City, Iowa

*Socioeconomics and Health Services:*

**Paul P. Lee, MD**  
Durham, NC

*Clinicopathologic Reports, Case Reports, and Small Case Series:*

**W. Richard Green, MD**  
Baltimore, Md

*Controversies:*

**Andrew P. Schachat, MD**  
Baltimore, Md

*Book and Software Reviews:*

**Barbara A. Blodi, MD**  
Madison, Wis

*Online Editors:*

**Jon P. Gieser, MD**  
Chicago, Ill

**Stephen D. McLeod, MD**  
San Francisco, Calif

*ARCHIVES CME:*

**William F. Mieler, MD**  
Houston, Tex

*Editorial Board:*

**Neil M. Bressler, MD**  
Baltimore, Md

**Elisabeth J. Cohen, MD**  
Philadelphia, Pa

**Karen J. Cruickshanks, PhD**  
Madison, Wis

**Thaddeus P. Dryja, MD**  
Boston, Mass

**Robert A. Goldberg, MD**  
Los Angeles, Calif

**Eve J. Higginbotham, MD**  
Baltimore, Md

**Douglas H. Johnson, MD**  
Rochester, Minn

**Dan B. Jones, MD**  
Houston, Tex

**Simmons Lessell, MD**  
Boston, Mass

**Peter J. McDonnell, MD**  
Los Angeles, Calif

**Stephen A. Obstbaum, MD**  
New York, NY

**Annabelle A. Okada, MD**  
Tokyo, Japan

**Michael B. Raizman, MD**  
Boston, Mass

**James G. Ravin, MD**  
Toledo, Ohio

**Arthur L. Rosenbaum, MD**  
Los Angeles, Calif

**Robert N. Weinreb, MD**  
La Jolla, Calif

**M. Roy Wilson, MD, MS**  
Omaha, Neb

**EDITORIALS**

**Antioxidants, Zinc, and Age-Related Macular Degeneration: Results and Recommendations**

*Lee M. Jampol, MD*

1533

**ARCHIVES EXPRESS**

**Ophthalmology in Israel**

*Shlomo Melamed, MD*

1535



**Ophthalmology in Russia**

*Galina Babich, MD*

1537



**Ophthalmology in the Kingdom of Saudi Arabia**

*Michael D. Wagoner, MD;*

*Ali A. al-Rajhi, MD*

1539



**CLINICOPATHOLOGIC REPORTS, CASE REPORTS, AND SMALL CASE SERIES**

**Ultrasound Biomicroscopy of an Implantable Miniaturized Telescope**

*Julián García-Feijoó, MD, PhD;*

*Sonia Durán-Poveda, MD;*

*Ricardo Cuiña-Sardiña, MD;*

*Carmen Méndez-Hernandez, MD;*

*Julián García-Sánchez, MD, PhD;*

*Miguel Zato Gómez de Liaño, MD, PhD*

1544



**Traumatic Hyphema and Factor XI Deficiency (Hemophilia C)**

*Nawal Al-Fadhil, MD, MSc;*

*Anil Pathare, MD;*

*Anuradha Ganesh, MD, MRCOphth*

1546



**Hereditary Motor and Sensory Neuropathy Associated With Juvenile Glaucoma**

*Kazuhiko Unoki, MD, PhD;*

*Yushi Sakamoto, MD;*

*Norio Ohba, MD;*

*Takashiro Kiwaki, MD;*

*Fujio Umehara, MD, PhD;*

*Yasushi Isashiki, MD, PhD;*

*Masanori Nakagawa, MD, PhD;*

*Mitsuhiro Osame, MD, PhD*

1547



**Retinal Periphlebitis as Zoster Sine Herpete**

1550

*Yasuko Noda, MD;*

*Mitsuru Nakazawa, MD, PhD;*

*Daisuke Takahashi, MD, PhD;*

*Tomoko Tsuruya, MD, PhD;*

*Makoto Saito, MD; Miho Sekine, MD*



**Bilateral Central Retinal Vein Occlusion in a Patient With Occult Colon Cancer**

1552

*Fani Segev, MD; Amit Segev, MD;*

*Avraham Livne, MD; Ehud I. Assia, MD;*

*Yoseph A. Mekori, MD*



**Japanese X-linked Juvenile Retinoschisis: Conflict of Phenotype and Genotype With Novel Mutations in the XLR51 Gene**

1553

*Makoto Nakamura, MD; Sei Ito, MD;*

*Hiroko Terasaki, MD; Yozo Miyake, MD*



**PHOTO ESSAYS**

**Wilson Disease**

1556

*Anil D. Patel, MD, FRCSC;*

*Miloslav Bozdech, MD*



**Transcorneal Tube Erosion of an Ahmed Valve Implant in a Child**

1558

*Abdullah Al-Torbak, MD, FRCSC;*

*Deepak P. Edward, MD*



**“Eye-Tooth”: A Case of Orbital Dentigerous Cyst After Trauma**

1560

*Bola Odufuwa, MS, FRCSC;*

*Geoffrey E. Rose, MS, FRCSC*



**CORRESPONDENCE**

**Women in Ophthalmology at Wills Eye Hospital**

1562

*Elisabeth J. Cohen, MD*



**The Presence of Cataract as a Predictor of Mortality**

1562

*Michael E. Yablonski, MD, PhD*



**In Reply**

1563

*William G. Christen, ScD;*

*Robert J. Glynn, ScD*



**Renal-Coloboma Syndrome  
in a Brazilian Family**

Patricia Ioschpe Gus, MD;  
Carolina Fischinger M. de Souza, MD;  
Sarah Porteous; Michael Eccles, PhD;  
Roberto Giugliani, MD, PhD

1563



**BOOK AND SOFTWARE REVIEWS**

**Neuro-Ophthalmology Review Manual**

Lanning B. Kline, MD;  
Frank J. Bajandas, MD  
Reviewed by Jeffrey L. Bennett, MD, PhD

1566



**The Wilmer Ophthalmological Institute,  
1925-2000**

Robert B. Welch, MD  
Reviewed by Stephen J. Ryan, MD

1566



**On the Shoulders of Giants: The Story  
of the Washington University  
Department of Ophthalmology  
and Visual Sciences**

Benjamin Milder, MD  
Reviewed by Larry Halperin, MD

1567



**REGULAR DEPARTMENTS**

ARCHIVES Web Quiz Winner	1462
100 Years Ago in the ARCHIVES	1436, 1486, 1503
Notice to the Authors of Reports From Clinical Trials	1536
Correction	1565
Notice to Authors: Submission of Manuscripts	1568
ARCHIVES CME	1569
Continuing Medical Education	1571
Products & Services	1573
Classified Advertising	1574
Index to Advertisers	1584

Instructions for authors are available on our Web  
site: <http://www.archophthalmol.com>. If you do  
not have access to the Web, contact Laura Hayes  
Hoffman at (608) 262-7769.