Subspecialty Day Meetings
An Insider’s Guide
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CENTURION® VISION SYSTEM

IMPORTANT PRODUCT INFORMATION

CAUTION:
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INDICATION:
The Centurion® Vision System is indicated for emulsification, separation, irrigation, and aspiration of cataracts, residual cortical material and lens epithelial cells, vitreous aspiration and suturing associated with anterior vitrectomy, bipolar coagulation, and intravascular lens injection. The AutoSert® IOL Injector Handpiece is intended to deliver qualified AcrySof® intracorneal lenses into the eye following cataract removal. The AutoSert® IOL Injector Handpiece achieves the functionality of injection of intracorneal lenses. The AutoSert® IOL Injector Handpiece is indicated for use with the AcrySof®-lens SN6OWF, SN6AD1, SN6AT3 though SN6AF9, as well as approved AcrySof® lenses that are specifically indicated for use with this inserter, as indicated in the approved labeling of those lenses.

WARNINGS:
Appropriate use of Centurion® Vision System parameters and accessories is important for successful procedures. Use of low vacuum limits, low flow rates, low bottle heights, high power settings, extended power usage, power usage during occlusion conditions (beeping tones), failure to sufficiently aspirate viscoelastic prior to using power, excessively tight incisions, and combinations of the above actions may result in significant temperature increases at incision site and inside the eye, and lead to severe thermal eye tissue damage. Good clinical practice dictates the testing for adequate irrigation and aspiration flow prior to entering the eye. Ensure that tubes are not included or pinched during any phase of operation. The consumables used in conjunction with ACIM® instrument products constitute a complete surgical system. Use of consumables and handpieces, other than those manufactured by Alcon may affect system performance and create potential hazards.

AES/COMPLICATIONS:
Inadvertent actuation of Prime or Tune while a handpiece is in the eye can create a hazardous condition that may result in patient injury. During any ultrasonic procedure, metal particles may result from inadvertent touching of the ultrasonic tip with a second instrument. Another potential source of metal particles resulting from any ultrasonic handpiece may be the result of ultrasonic energy causing micro abrasion of the ultrasonic tip.

ATTENTION:
Refer to the Directions for Use and Operator’s Manual for a complete listing of indications, warnings, cautions and notes.

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FOR THE RECORD

ANNUAL BUSINESS MEETING. Notice is hereby given that the Annual Business Meeting of the American Academy of Ophthalmology will be held in conjunction with the Opening Session on Sunday, Oct. 28, from 8:30-10:00 a.m., in Lakeside E354 at the McCormick Place Convention Center in Chicago. Candidates for membership will be approved during this meeting.

For the full list of candidates, visit aao.org/member-services. To see the full order of business, refer to the “Opening Session” page of the AAO 2018 Meetings Program.

CALLING ALL VOTING MEMBERS AND FELLOWS. Election materials will be sent to all voting Academy fellows and members. Voting opens on Monday, Oct. 29, and closes Tuesday, Nov. 27, at noon EST. Results will be posted on the Academy’s website at aao.org/about/governance/elections by Dec. 6, 2018.

The candidates’ stated goals are as follows:
President-Elect: Anne L. Coleman, MD, PhD. “To help Academy members achieve our mutual goals to protect and restore sight and empower lives, and to enhance AAO programs for professional and personal improvement.”
Trustee-at-Large: Judy E. Kim, MD. “To be the voice of our members with integrity and passion and to work with all stakeholders through communication and collaboration.”
Senior Secretary for Clinical Education: Christopher J. Rapuano, MD. “I feel strongly that the backbone of the organization is education. My goal for the Academy is to continue to provide the best ophthalmic education in the United States and around the world.”

For candidates’ full statements, visit aao.org/about/governance/elections, or visit the candidate display in the Main Concourse of McCormick Place during AAO 2018.

NOTICE: This publication was printed in advance of Subspecialty Day and AAO 2018. For the most up-to-date information, check the Program Search (aao.org/programs search) or the Mobile Meeting Guide (aao.org/mobile). American Academy of Ophthalmic Executives®, EyeNet®, EyeSmart™, IRIS® Registry, ONE®, and Preferred Practice Patterns® are trademarks of the American Academy of Ophthalmology. All other trademarks are the property of their respective owners. © 2018 American Academy of Ophthalmology.

From the Editor
Welcome to Subspecialty Day 2018!

This year’s Subspecialty Day features presentations on the latest developments in diagnosis, treatments, and procedures. The Subspecialty Day lineup features refractive surgery on Friday and retina on both Friday and Saturday. On Saturday, there will be Subspecialty Day meetings in cornea, glaucoma, ocular oncology and pathology, oculofacial plastic surgery, pediatric ophthalmology, and uveitis. I urge you to take time to explore disciplines other than your own. Often, pearls from one subspecialty can be applied to a completely different arena in surprising and useful ways. Check out this year’s “Program Directors Talk About What’s Hot at Subspecialty Day” (page 4) to find topics that might interest you. Look for the second edition of AAO 2018 News on Sunday and check your email each evening for AAO 2018 Daily, a roundup of news from Subspecialty Day and AAO 2018. The content can also be found at aao.org/eyenet/daily.

Ruth D. Williams, MD
Unofficial tour guide (see page 14) and Chief Medical Editor, EyeNet Magazine
PROGRAM SUBSPECIALTY DAY

Program Directors Talk About What’s Hot at Subspecialty Day

From Cornea to Uveitis

To provide an inside look at Subspecialty Day, AAO 2018 News contacted the program directors from each meeting and asked the following questions: 1) Which presentations will have broad appeal across subspecialties? 2) Which presentations might cause subspecialists to reconsider an area of their clinical practice? 3) Which presentations address particularly novel or exciting developments within the field? Here are those answers, with descriptions provided by the program directors.

Most Subspecialty Day meetings take place on Saturday. However, Refractive Surgery Subspecialty Day is Friday only, allowing refractive surgeons to register for the Saturday Cornea Subspecialty Day—or any other Saturday program. As always, Retina Subspecialty Day takes place over Friday and Saturday.

Note: All summaries were written in advance of Subspecialty Day. Be sure to check the Mobile Meeting Guide (aao.org/mobile) for any last-minute changes to the Subspecialty Day schedules.

Of Interest Across Subspecialties

CORNEA

Grand Ballroom S100ab

These Pigment on the Conjunctiva: When to Worry, presented by Carol L. Shields, MD (Saturday, 10:55-11:03 a.m.)

All ophthalmologists see patients with pigment on their conjunctiva. This is an everyday occurrence. The question is: When should you worry, and when should you watch? The differential includes benign complexion-associated melanosis (racial melanosis), nevi, primary acquired melanosis with risk for malignant transformation, and frank melanoma. Carol L. Shields, MD, will engage the audience with cases and a salient algorithm for approaching these lesions. The session will also offer several examples of lesions commonly seen in practices, and will help clinicians of all subspecialties diagnose and develop a treatment plan. Come to this session and develop expertise in how to manage these lesions you see every day; learn when you need to observe versus take action!

—Carol L. Karp, MD, Cornea program director

OCULAR ONCOLOGY AND PATHOLOGY

Room E350

Pro and Con Debate and Roundtable on Retinoblastoma, moderated by Dan S. Gombos, MD, and Miguel A. Materin, MD (Saturday, 9:15-10:05 a.m.)

Uveal Melanoma: Hot and Spicy Topics, moderated by Paul J. Bryant, MD, and Carol L. Shields, MD (Saturday, 1:16-1:51 p.m.)

Uveal Melanoma—Pro and Con Debate, moderated by Arun D. Singh, MD (Saturday, 1:51-2:41 p.m)

Gender Research in Ocular Tumors, moderated by Mary E. Aronow, MD, and N. Grace Lee, MD (Saturday, 3:58-4:33 p.m)

This year’s Subspecialty Day in ocular oncology and pathology will cover rapidly evolving advances in the field. Vigorous debates and roundtables will highlight areas of consensus and disagreement.

In a morning session, experts will discuss the medium- and long-term risks of intra-arterial chemotherapy for retinoblastoma, which is approaching its first decade of use in some U.S. centers. Personalized care is now standard in oncology, and, accordingly, in 2 afternoon sessions devoted to uveal melanoma, experts will evaluate how ophthalmic tumors have benefited significantly from prognostic testing and mutational analysis. The impact on patient survival will also be debated.

And, new this year will be a session on gender disparity research.

—Patricia Chavez-Barrios, MD, and Dan S. Gombos, MD, Ocular Oncology and Pathology program directors

OCULOFACIAL PLASTIC SURGERY

Room S406a

The Crying Game—Lacrimal, moderated by Andrea N. Kossler, MD (Saturday, 4:05-5:27 p.m.)

The tearing patient is no stranger to the oculoplastic surgeon, comprehensive ophthalmologist, or any other eye care provider. The fact that a multitude of factors can cause tearing often results in the involvement of many subspecialists for diagnosis.

“The Crying Game” is our last session of the day and will explore the many facets of the evaluation and workup of the patient with tearing. Stephen C. Pflugfelder, MD, will discuss the approach to tearing from the ocular surface specialist’s point of view, while Roger A. Dailey, MD, Meredith S. Baker, MD, and Erin M. Shriver, MD, will discuss the benign as well as malignant causes of lacrimal outflow obstruction. The expert panel will also review a number of complex cases of tearing.

—Richard C. Allen, MD, PhD, Oculofacial Plastic Surgery program director

CORNEA

A 56-year-old white woman with unilateral conjunctival and corneal pigmentation, highly suggestive of primary acquired melanosis with atypia and foci of melanoma.

PEDIATRIC OPHTHALMOLOGY

Grand Ballroom S100c

Here Comes the Sun: Myopia Prevention, moderated by Nils K. Mungan, MD (Saturday, 1:55-2:31 p.m.)

Comprehensive ophthalmologists and pediatric ophthalmologists all encounter patients who are anxious to slow down—or even reverse—the progression of their myopia. Experts in myopia will share the latest research in myopia prevention and how it applies to their clinical practice. After hearing talks on topics such as “Atropine for Myopia” and “Contact Lens Therapies for Myopia Control,” every attendee will take home new perspectives and insights on myopia that will be helpful in their everyday clinical practice.

Wondering if low-dose atropine is currently the best treatment for preventing myopia progression? After this session you will be better able to answer this question and others, treat the condition, and counsel your patients with myopia.

—Jonathan M. Holmes, MD, and Scott A. Larson, MD, Pediatric Ophthalmology program directors

REFRACTIVE SURGERY

Room E354

Keynote Lecture, presented by Margarette B. McDonald, MD (Friday, 8:05-8:20 a.m.)

Advances in Refractive Surgery, moderated by William B. Trattler, MD, and Kendall E. Donaldson, MD (Friday, 8:20-10:15 a.m.)
INDICATION FOR USE. The iStent inject® Trabecular Micro-Bypass System Model G2-M-IS is indicated for use in conjunction with cataract surgery for the reduction of intraocular pressure (IOP) in adult patients with mild to moderate primary open-angle glaucoma.

CONTRAINDICATIONS. The iStent inject is contraindicated in eyes with angle-closure glaucoma, traumatic, malignant, uveitic, or neovascular glaucoma, discernible congenital anomalies of the anterior chamber (AC) angle, retrobulbar tumor, thyroid eye disease, or Sturge-Weber Syndrome or any other type of condition that may cause elevated episcleral venous pressure.

WARNINGS. Gonioscopy should be performed prior to surgery to exclude congenital anomalies of the angle, PAS, rubeosis, or conditions that would prohibit adequate visualization of the angle that could lead to improper placement of the stent and pose a hazard.

MRI INFORMATION. The iStent inject is MR-Conditional, i.e., the device is safe for use in a specified MR environment under specified conditions; please see Directions for Use (DFU) label for details.

PRECAUTIONS. The surgeon should monitor the patient postoperatively for proper maintenance of IOP. The safety and effectiveness of the iStent inject have not been established as an alternative to the primary treatment of glaucoma with medications, in children, in eyes with significant prior trauma, abnormal anterior segment, chronic inflammation, prior glaucoma surgery (except SLT performed > 90 days preoperatively), glaucoma associated with vascular disorders, pseudoxfoliative, pigmentary or other secondary open angle glaucomas, pseudophakic eyes, phakic eyes without concomitant cataract surgery or with complicated cataract surgery, eyes with medicated IOP > 24 mmHg or unmedicated IOP < 21 mmHg or > 36 mmHg, or for implantation of more or less than two stents.

ADVERSE EVENTS. Common postoperative adverse events reported in the randomized pivotal trial included stent obstruction (6.2%), intraocular inflammation (5.7% for iStent inject vs. 4.2% for cataract surgery only), secondary surgical intervention (5.4% vs. 5.0%) and BCVA loss ≥ 2 lines ≥ 3 months (2.6% vs. 4.2%).

CAUTION: Federal law restricts this device to sale by, or on the order of, a physician. Please see DFU for a complete list of contraindications, warnings, precautions, and adverse events.


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SUBSPECIALTY DAY

Management and Prevention of Complications in Refractive Surgery, moderated by Marcony R. Santhiago, MD (Friday, 10:55 a.m.-12:10 p.m.)

The Refractive Surgery Subspecialty Day program will kick off with a keynote lecture by Marguerite McDonald, MD, who will reflect on 30 years of laser vision correction and the challenges of getting laser vision correction started.

The first session, moderated by William B. Trattler, MD, and Kendall E. Donaldson, MD, will focus on corneal and intraocular refractive procedures. This session will include talks by Renato Ambrosio Jr., MD, who will discuss “Advances in Preoperative Assessment for Corneal Refractive Surgery,” by George O. Waring IV, MD, who will discuss “Refractive Index Reshaping of the Lens,” and others, who will give insightful presentations of interest to refractive surgeons and comprehensive ophthalmologists alike.

Later, Marcony R. Santhiago, MD, will moderate a session on complications in refractive surgery, which will include “Pearls and Pitfalls in Biometry Following Corneal Refractive Surgery or Keratoplasty,” presented by Jack T. Holladay MD, MSE, FACS, and “Managing the Dissatisfied Refractive Surgery Patient,” presented by Vance Michael Thompson, MD. —William B. Trattler, MD, and Marcony R. Santhiago, MD, Refractive Surgery program directors

Diabetic macular edema will be one of many topics covered in the Retina Dissatisfied Refractive Surgery Patient, “Managing the Complications of Selective Laser Trabeculoplasty,” by Michael J. Brown, MD, and “Managing the Complications of Selective Laser Trabeculoplasty,” by Lawrence J. Singerman, MD (Saturday, 11:20 a.m.-12:24 p.m.)

The Diabetic Retinopathy Clinical Research network (DRCR.net) has undertaken numerous clinical trials, including the Protocol I, S, T, and U studies. The presentation on lessons learned from these protocols should be of interest to all ophthalmologists—for retina specialists to comprehensive ophthalmologists—as the findings have implications for providing optimal care to patients with diabetic macular edema (DME) and proliferative diabetic retinopathy (PDR). Other presentations, focusing on diabetic retinopathy, DME, and PDR, look at various questions and findings related to anti-VEGF therapy. During a panel discussion, leading experts in the field will provide further perspective on this disease that affects so many patients.

—Richard F. Spaide, MD, and Mark S. Honavar, MD, PhD, Retina program directors

UVEITIS

Room E450

Basic Blues, moderated by Albert T. Vitale, MD (Saturday, 8:05-9:10 a.m.)

The 2018 Uveitis Subspecialty Day, Uveal Blues, takes a combined approach, beginning with a return to the basics in the diagnostic and therapeutic approach to the uveitis patient; followed by case-based presentations highlighting both the fundamentals and nuances of diagnosis and treatment of anterior and posterior segment uveitis. The day will end with late-breaking developments in existing trials and a glimpse into the future of uveitis.

The initial section on fundamentals, or the “Basic Blues,” is intended to provide the nonuveitis specialist with a structured and logical approach to intraocular inflammatory disease with particular emphasis on the generation of a differential diagnosis, appropriate testing, and the formulation of a treatment plan. Highlights of this section will include presentations on epidemiology, diagnostic approaches to uveitis, and practical treatment paradigms for both local and systemic therapies.

—H. Nida Sen, MD, MHSc, and Albert T. Vitale, MD, Uveitis program directors

Clinical Practices to Reconsider

CORNEA

Grand Ballroom S100ab

Descemet Stripping Only (DSO)—Can We Do Without a Graft? presented by Kathryn A. Colby, MD, PhD (Saturday, 9:44-9:52 a.m.)

Corneal transplantation surgery has evolved rapidly over the past 10 years. We have expanded our surgical techniques from full-thickness corneal transplantation to all forms of selective lamellar keratoplasty, and, in particular, Descemet-stripping and Descemet membrane endothelial keratoplasty. As we look forward 10 years, we cannot help but wonder what will be the next step in this evolutionary process.

During Cornea Subspecialty Day, Kathryn A. Colby, MD, PhD, will address just what we should be expecting. Her talk, entitled “Descemet Stripping Only (DSO)—Can We Do Without a Graft?” will provide insight into how this procedure may change our approach to treating patients with Fuchs corneal endothelial dystrophy (FCE). Given that FCE accounts for nearly half of all endothelial keratoplasties in the United States, the advent of a technique that would be easier and safer to perform, would eliminate rejection, and would decrease our dependency on donor corneal tissue would truly be another Copernican Revolution.

—Jennifer Li, MD, Cornea program director

GLAUCOMA

Room E354

Surgical Complications, moderated by Malik Y. Kahook, MD, and Dale K. Heuer, MD (Saturday, 4:47-5:33 p.m.)

New shunt and stent devices as well as traditional glaucoma procedures all have their complications and challenges. This session will focus on questions that arise when the surgeon is faced with an unexpected complication. Should one proceed with planned ab interno angle surgery if the posterior capsule tears and vitreous comes forward? How should a ciliary body cleft be managed by an anterior chamber after suprachoroidal shunt implant? What should one do if there is a conjunctival buttonhole during implantation of an ab interno shunt? What are solutions for covering a tube or trabeculectomy when the conjunctiva doesn’t want to cooperate? How should one manage blood reflux and hyphema in angle surgery? You will hear from surgeons who deal with such cases frequently. They will discuss their mistakes and what they’ve learned, providing attendees with new perspectives on these surgeries. The session will wrap up with a discussion in which audience members can bring their own surgical questions.

—JoAnn A. Giaccone, MD, Glaucoma program director

OCTULAR ONCOLOGY AND PATHOLOGY

Room E450

Multicenter Trials in Ocular Oncology—2018 Update, moderated by Dan S. Gombos, MD, Sander Dubovy, MD, and Amy C. Schefer, MD (Saturday, 3:21-3:58 p.m.)

The Children’s Oncology Group has spent much of the last decade sponsoring a series of prospective multicenter trials within the field of retinoblastoma. It has investigated the role of adjuvant chemotherapy for advanced unilateral disease, looked at modified therapies for various stages of intraocular retinoblastoma, and assessed new approaches for treating metastatic disease. Many of these trials have now completed accrual and have data available for analysis. We have invited the principal investigators of these high-impact studies to present their data and provide context for clinical care.

—Patricia Chavez-Barron, MD, and Dan S. Gombos, MD, Ocular Oncology and Pathology program directors

OCULOFACIAL PLASTIC SURGERY

Room S406a

Orbitology, moderated by Chrisfouad R. Ababadi, MD (Saturday, 8:05-9:25 a.m.)

The Oculofacial Plastic Surgery Subspecialty Day will kick off with a session...
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PEDIATRIC OPHTHALMOLOGY

Grand Ballroom 5100c
Weathering the Storm: Surgical Approaches to Vertical Strabismus, moderated by Jonathan M. Holmes, MD (Saturday, 8:00-9:30 a.m.)

Strabismus surgeons will enjoy an exciting back-and-forth discussion of 4 challenging cases. For each case, 2 experienced strabismus surgeons will present their preferred surgical approach with clinical pearls and tips. This will be followed by a panel discussion. Audience members will vote on their preferred approach for each case, both before and after the presentations. Attendees will take home ideas for improving their own previously preferred technique—and, perhaps, practical recommendations for an alternative technique that they are not using.

One clinical scenario to be discussed is a moderate angle hypertropia, which could either be treated simply with an inferior oblique recession or by adding an inferior rectus recession on adjustable sutures. Panelists will share clinical advice and the reasons they prefer one technique over another, with practical step-by-step illustrations of how to perform each specific type of procedure.

—Jonathan M. Holmes, MD, and Scott A. Larson, MD, Pediatric Ophthalmology program directors

REFRACTIVE SURGERY

Room E354
ISRS Member Lunch: Presbyopic IOLs, moderated by John So-Min Chang, MD (Friday, 12:10-1:30 p.m.)

Video-Based Master Complications, moderated by Amar Agarwal, MD, Jennifer M. Loh, MD, and Sathish Srinivasan, MBBS (Friday, 1:30-2:25 p.m.)

ESCRS Symposium—Will Small Lenticule Extraction Replace LASIK? moderated by Beatrice Cochrane, MD (Friday, 2:25-3:10 p.m.)

A special members’ lunch will be available to current International Society of Refractive Surgery members. During the lunch, John So-Min Chang, MD, will moderate a focused session on optimizing success with presbyopic lenses.

Immediately following lunch, meeting attendees will be treated to one of the highlights of the meeting: the “Video-Based Masters Complications” session. An extensive list of cases will be presented, ranging from management of intraoperative challenges during LASIK by A. John Kanellopoulos, MD, to how to manage phakic IOL complications by Alan M. ElDanasyoury, MD.

The European Society of Refractive & Cataract Surgeons will then host a mini symposium on small-incision lenticule extraction, with the title “Will Small Lenticule Extraction Replace LASIK?” Beatrice Cochrane, MD, will moderate this informative session.

—William B. Trattler, MD, and Marc Morley, MD, Retina program directors

RETINA

Arie Crown
Imaging, moderated by Brandon J. Lujan, MD, and Amani Fawzi, MD (Saturday, 8:05-9:08 a.m.)

The Saturday morning program will start with a bang: Jay S. Duker, MD, will present on the clinical utility of optical coherence tomography angiography (OCT-A) technology—a modality that is relatively

on orthoribology, including a discussion of thyroid eye disease and idiopathic orbital inflammation, both of which have seen a paradigm shift in treatment. Don O. Kikkawa, MD, will discuss thyroid eye disease, including the latest medical and surgical treatments. Additionally, Harj R. Bill, MD, will address the workup and treatment of idiopathic orbital inflammation. Recent advances in monoclonal antibody therapy have resulted in a number of agents showing promise in treating these diseases. These agents include teprotumumab, rituximab, infliximab, adalimumab, and tocilizumab. The lecturers and expert panel will discuss the efficacy of these agents as well as their indications and risks.
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References:
new to clinicians but that is evolving quickly and starting to find a place in retina practices. Just as OCT is evolving and providing clinicians with new diagnostics, so too is fundus autofluorescence imaging. Frank G. Holz, MD, will provide an overview of this growing field. In addition, Ursula M. Schmidt-Erfurth, MD, will give an intriguing talk about a potentially relevant biomarker for macular disease activity: hyper-reflective foci. These are only 3 presentations among many in this strong, exciting session.

—Richard F. Spaide, MD, and Mark S. Humayun, MD, PhD, Retina program directors

UVEITIS
Room E450
Modal Blues Variations—Imaging in Uveitis, moderated by Sunil K. Srivas-tava, MD (Saturday, 3:00-3:55 p.m.)
Operational Blues—Surgery in Uveitis, moderated by Emil Mitchel Opremcak, MD (Saturday, 3:55-4:30 p.m.)

This year’s program will include a new section on multimodal imaging in uveitis, which will highlight the utility of cutting-edge technology in diagnosis and management of complex cases for providing new insights and approaches for uveitis subspecialists.

Many sessions will present a progression of cases from basic to more complex to provide educational value for both the generalist and the uveitis specialist. This case-based learning system is intended to be engaging and interactive, simulate real-life clinical decision-making, and underscore the nuances involved in uveitic patient care.

The surgical management of uveitis’ complications requires special attention and will be addressed separately in the “Operational Blues” section. A presentation on the fundamentals in the surgical management of patients with uveitic cataract and glaucoma will be followed by “Diagnostic Fluid, Tissue Sampling, and Processing in Uveitis,” presented by Thomas A. Albini, MD, and Mark S. Humayun, MD, PhD, Retina program directors.

In addition, for the first time this year, Uveitis Subspecialty Day will adopt interactive audience questions for a livelier panel discussion.

—H. Nida Sen, MD, MHSc, and Albert T. Vitale, MD, Uveitis program directors

Exciting Developments
CORNEA
Grand Ballroom S100ab
Zoster: Give It a Shot, presented by Keith Hugh Baratz, MD (Saturday, 4:14-4:22 p.m.)

Keith H. Baratz, MD, will discuss herpes zoster. This is a serious health problem in the United States, with over 1 million new cases annually. Approximately 20% of all cases are the subtype herpes zoster ophthalmicus, and up to 20% of these cases develop potentially serious ocular sequelae, including keratitis, uveitis, glaucoma, or neurotrophic disease. Performed acutely, prompt, systemic antiviral therapy can decrease but not eliminate the ocular risks.

Previously, an attenuated live vaccine, Zostavax, had been advocated for use on immunocompetent patients 60 years and older. In early 2018, the Centers for Disease Control and Prevention made recommendations to begin vaccination of immunocompetent people 50 years and older with Shingrix, a new vaccine containing a zoster glycoprotein subunit and an immune-stimulating adjuvant. Shingrix is more effective than Zostavax and is predicted to provide protection over a longer period. Vaccination at an earlier age will greatly decrease the burden of disease, as the mean age of incidence of zoster is currently below age 60 years.

—Sanjay V. Patel, MD, FRCOphth, Cornea program director
GLAUCOMA
Room E354
Exciting New Research, moderated by Albert S. Khouri, MD, and Harry A. Quigley, MD (Saturday, 3:40-4:47 p.m.)

Anyone taking care of patients with glaucoma will be excited to learn new clinical and basic research is providing more effective and innovative tools to treat patients with glaucoma. This is news to take back to patients to give them hope about their future. Some of the exciting topics to be presented include virtual reality in glaucoma, use of pluripotent stem cells, neural stimulation to promote retinal ganglion cell regeneration, Schlemm’s canal and collector channel imaging, artificial intelligence, in vivo imaging of apoptosis, and teleglaucoma. Your patients will thank you for attending this session because now you will have a satisfactory answer to their question, “What research is happening to cure my glaucoma?”

—JoAnn A. Giaconi, MD, Glaucoma program director

OCULAR ONCOLOGY AND PATHOLOGY
Room E350
Pro and Con Debate and Roundtable on Retinoblastoma, moderated by Dan S. Gombos, MD, and Miguel A. Materin, MD (Saturday, 9:15-10:05 a.m.)

Uveal Melanomas: Hot and Spicy Topics, moderated by Paul J. Bryar, MD, and Carol L. Shields, MD (Saturday, 10:30-11:20 a.m.)

Uveal Melanomas—Pro and Con Debate, moderated by Arun D. Singh, MD (Saturday, 1:51-2:41 p.m.)

A roundtable of experts will discuss and debate 2 of the most significant advances in the field.

First, intra-arterial chemotherapy for the treatment of retinoblastoma has now reached a decade of use in some U.S. centers, yet the short- and long-term impacts of this therapy, including the risk of secondary cancers, remain a concern to many.

Second, uveal melanomas can now be biopsied for metastatic risk with one of the most accurate prognostic tests available within oncology, yet the impact of the test on patient morbidity and mortality and the test’s overall utility remain in question.

—Patricia Chévez-Barrios, MD, and Dan S. Gombos, MD, Ocular Oncology and Pathology program directors

OCULOFACIAL PLASTIC SURGERY
Room S406a
Without the Knife: Nonsurgical Aesthetics, moderated by Jose R. Montes, MD (Saturday, 9:55-10:45 a.m.)

With the Knife: Surgical Aesthetics, moderated by Robert M. Schwarz, MD (Saturday, 11:00 a.m.-12:25 p.m.)

This year, Oculofacial Plastic Surgery Subspecialty Day will include a diverse group of international and U.S. experts who will challenge our current thinking on the approach to the cosmetic patient.

In addition, renowned facial plastic surgeon Michael J. Lee, MD, will discuss face and neck lifts. These sessions will provide the latest developments in treatment of the cosmetic patient, including incisional and nonincisional techniques.

—Richard C. Allen, MD, PhD, Oculofacial Plastic Surgery program director

PEDIATRIC OPHTHALMOLOGY
Grand Ballroom S100c
Sudden Showers—Late Breaking RCTs and Observational Studies, moderated by Scott A. Larson, MD (Saturday, 9:31-10:29 a.m.)

Raining Cats and Dogs—Challenges of Applying Evidence-Based Medicine, moderated by Michael F. Chiang, MD (Saturday, 10:59-11:53 a.m.)

Alcon is reimagining eye care. We are the forefront of innovation, pursuing new technologies and techniques to help surgeons address unmet patient needs. Our mission is clear: discover new ways to enhance sight and improve people’s lives.

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We are fortunate this year to have new data from randomized clinical trials that are just being completed. Lisa C. Verderber, MD, will unveil the results of the randomized clinical trial comparing the new Dig Rush binocular game (played on a handheld tablet) with continued optical treatment (spectacles) for children with amblyopia. Many of us were disappointed by the results of the previous randomized clinical trial comparing a falling-blocks binocular game with part-time patching. Children wouldn’t play the game. They found it too boring! Dr. Verderber will reveal whether treatment with the more engaging binocular game (Dig Rush) was any more successful.

On the theme of randomized clinical trials, Michael F. Chiang, MD, will moderate a subsequent session entitled “Raining Cats and Dogs—Challenges of Applying Evidence-Based Medicine,” in which experts will debate whether, and how, recently published studies can or cannot be applied to everyday patients in their clinics. Attendees will leave with a practical approach to applying the evidence to patients with amblyopia, intermittent exotropia, and retinopathy of prematurity.

—Jonathan M. Holmes, MD, and Scott A. Larson, MD, Pediatric Ophthalmology program directors

REFRACTIVE SURGERY
Room E354
JRS: Hot, Hotter, Hottest—Late-Breaking News, moderated by J. Bradley Randleman, MD (Friday, 3:55-5:20 p.m.)

The final session of this information-rich day will feature new and innovative techniques and technologies in the area of refractive surgery. The session will kick off with the Troutman Prize lecture by Yumeng Wang, MD, PhD, titled “Histological and MicroRNA Signatures of Corneal Epithelium in Keratoconus.” Subsequent presentations will include: “Corneal Allogeneic Instralomal Ring Segments (CAIRS) Combined With Corneal Cross-linking for Keratoconus,” by Soosan Jacob, FRCS; “Customized Corneal Cross-linking Using Different UVA Beam Profiles,” by Rohit Shetty, MBBS; “Ciliary Muscle Extracellular Stimulation to Restore Accommodation in Patients With Early Presbyopia,” by Luca Gualdi, MD; and “Outcomes of Re-treatment by LASIK After SMILE,” by Dan Z. Reinstein, MD. —William B. Trattler, MD, and Marcovy R. Santhiago, MD, Refractive Surgery program directors

RETINA
Arie Crown

Innovative Retinal Interventions, moderated by Yale L. Fisher, MD, and Rajendra S. Apte, MD, PhD (Saturday, 1:39-2:21 p.m.)

Late-Breaking Developments, Part I, moderated by Mark S. Humayun, MD, PhD (Friday, 4:20-5:08 p.m.)

Late-Breaking Developments, Part II, moderated by Hugo Quiroz-Mercado, MD (Saturday, 9:08-9:38 a.m.)

Machine Interpretation of Fundus Photographs, presented by Dale Webster, PhD (Friday, 12:00-12:12 p.m.)

The field of retina continues to move forward at a rapid pace. The session “Innovative Retinal Interventions,” last year, was very well received. Accordingly, we are bringing it back this year, featuring presentations on nanoretina; gene therapy; results from 2 phase 3 trials on an injectable fluorocinolone implant for posterior uveitis; TIE2 activation for diabetic retinopathy and diabetic macular edema; blockade of angiopoietin-2 and VEGF with RG7716 for diabetic macular edema and neovascular age-related macular degeneration; and Nd:YAG vitreolysis.

But this session on innovations is only one of many exciting sessions, including the very popular “Late-Breaking Developments,” which delivers the latest on various emerging treatments.

Brand new this year is the “Special Lecture” during Retina Subspecialty Day. Google technical lead Dale Webster, PhD, will give this inaugural talk, titled “Machine Interpretation of Fundus Photographs.” Considering that artificial intelligence has been getting much attention recently, this lecture should have broad appeal and provide insight into the future of our field.

—Richard F. Spalte, MD, and Mark S. Humayun, MD, PhD, Retina program directors

UVEITIS
Room E450
Avant-Garde Blues, moderated by H. Nida Sen, MD (Saturday, 4:30-5:32 p.m.)

The final session of the program, “Avant-Garde Blues,” will give the audience a glimpse into the exciting and rapidly evolving future of the field of uveitis. Speakers will present on SITE-2 study results and on late-breaking developments, including the POINT, FAST, Fluocinolone Acetonide Intravitreal Implant, and Phase 3 PEACHTREE (on suprachoroidal delivery of CLS-TA for uveitic macular edema) Trial results.

Towards the end of the session, C. Stephen Foster, MD, one of the founding figures of uveitis, will deliver a speech reflecting on a career in uveitis, entitled “Where We Have Been and the View Forward.”

—H. Nida Sen, MD, MHSc, and Albert T. Vitale, MD, Uveitis program directors

ONCOLOGY AND PATHOLOGY: Macroscopic photograph of retinoblastoma after intra-arterial chemotherapy with persistent retinal detachment involving the macula.

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Learn about Interventional Glaucoma at AAO 2018

Join us at AAO 2018 Exhibit #1044 for a series of physician-led initiatives featuring Dr. Khaimi (Dean McGee Eye Institute, University of Oklahoma) to see first-hand how Ellex’s interventional glaucoma technologies can help you to prioritize proactive glaucoma care. SLT Selective Light Therapy with the Ellex Tango™ and ABiC™ canal-based glaucoma surgery, performed with the iTrack™ surgical system, give you the ability to intervene across the full spectrum of the glaucoma disease process.

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MAHMOUD KHAIMI, MD

*These sessions are not affiliated with the official program of AAO 2018
Chicago is a spectacular city, and October is its best month because the weather is predictably lovely and the summer revelers have quieted. I love my city, and even though we live in the western suburbs, my family and I regularly visit downtown. Here is my personal “top 10” insider’s guide to America’s very best city.

Chicago Riverwalk
The recently completed Chicago Riverwalk is a path along the Chicago River that begins at Lake Shore Drive and extends for over a mile. The Riverwalk is accessible by stairs adjacent to the main bridges and the River Theatre section, where coliseum-like steps connect the street level to the river level. Walk along the river and take in some of Chicago’s iconic architecture and vibrant city mood.

Outdoor cafés and ice cream kiosks line the pedestrian path. City Winery is a popular spot for enjoying a glass of wine and absorbing the riverfront vibe. Alternatively, cross to the other side of the river for dinner at River Roast or The Kitchen on a terrace that overlooks the river for dinner at River Roast or The Kitchen on a terrace that overlooks the river.

The Architectural Boat Tour is a favorite with visitors to Chicago, and I suggest a do-it-yourself tour along the same waterway. Rent a boat for a dozen colleagues at Chicago Cycleboats or the Chicago Electric Boat Company, or rent a kayak at Urban Kayaks.

The Field Museum
The Field Museum is worth a visit, especially this year, because Sue, the world-famous T. rex, has been replaced in the Eocene hall. (Random fact: Sue is finding a new home in the Near West Side, formerly the famed meatpacking district (and former home of Harpo Studios—now the just-opened headquarters for McDonald’s), hosts several blocks of hip restaurants. A few casual spots with outdoor seating are Rick Bayless’ Cruz Blanca Brewery & Taqueria, Stephanie Izard’s Little Goat Diner (since her Girl and the Goat is always booked), and bellyQ, a modern take on Korean barbeque. Another favorite outdoor eatery is Mott Street in Wicker Park, which serves up tapas-style Asian fusion food. And for lovers of pie, Bang Bang Pie in Wicker Park has a backyard with picnic tables.

Lyric Opera
Let me convince you to take in an opera while in Chicago. Opera is the most extravagant art form because it combines orchestral music, exquisite singing, poetry, acting, costumes, and sets. “The Lyric,” one of the world’s great opera houses, is the perfect venue for first-time opera-goers. Idomeneo is a Mozart opera with 2 performances during Academy week (however, the Sunday performance conflicts with the even better choice of the Academy Foundation’s Orbital Gala!). The Lyric Opera hall is an opulent, gold-toned Art Deco space and is a contrast to the cool, silver, elegant hall of the Chicago Symphony Orchestra, which has 2 concerts during Academy week.

Bike or Hike Along the Lake
The Chicago Lakefront Trail is a 19-mile path for walking, jogging, and biking. The trail begins several miles south of McCormick Place, so theoretically one could beat the traffic to the annual meeting by jogging or biking from downtown. The most popular section of the trail is around Navy Pier, but perhaps the most beautiful section is heading south from Buckingham Fountain. I’ve often rented bikes at the McDonald’s Cycle Center in the northeast corner of Millennium Park. A fun biking route begins at Millennium Park and goes north by Navy Pier, includes a stop at Oak Street Beach for a soda, crosses over Lake Shore Drive on a pedestrian bridge, and ends at Lincoln Park Zoo.

Shopping
Chicago shopping is truly glorious, and Michigan Avenue has the usual favorite stores. Bargain shoppers should detour to the Old Town neighborhood or Michigan Avenue to visit the storefront for Luxury Park Zoo. The Lincoln Park Zoo is intimate and charming. This urban oasis evokes the mood of a lasonic Sunday afternoon Parisian stroll. My favorite is the lion den with its plexiglass viewing wall where Sabar, the zoo’s 8-year-old male lion, sometimes takes a nap on the other side. The Farm-in-the-Zoo is especially adapted for toddlers and little children. Additionally, I recommend the Nature Boardwalk, which winds through a prairie ecosystem along a pond. The Chicago skyline is a reminder that this serene walk is in the middle of an urban landscape.

The Spitting Fountains
Officially they’re the Crown Fountains, but my family has called them “The Spitting Fountains” ever since our first visit when Millennium Park opened. The tall sculptures are great examples of interactive video art. Children of all ages play in the zero-depth pool surrounding the sculptures and shriek when the fountains spit out streams of water from pursed lips.

Chicago Shakespeare Theater
Chicago Shakespeare Theater, located at the far end of Navy Pier, is known for innovative and dynamic productions. Nell Gwynn was premiered at London’s Globe Theater and made its American debut this October at Chicago Shakespeare Theater.

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03/2016
US-OPH-11013
As an ophthalmologist, you are at particular risk of musculoskeletal disorders (MSDs), said Jeffrey L. Marx, MD, who cochaired an annual session on ergonomics, with this year’s event taking place on Monday afternoon (see “Wellness Events,” on page 18).

Dr. Marx, a vitreoretinal specialist in Massachusetts, noted that interest in ergonomics is growing, particularly among young ophthalmologists (YOs): “Last year, we had more YOs at our session than ever before—and I think that is both good and bad.”

The good news is that they’re actively interested in trying to keep themselves healthy throughout their career, he said. “But the bad news is that even the youngest ophthalmologists are being affected by the significant burdens that we see in our clinical lives—seeing more and more patients and perhaps being at greater risk over time because of those increased burdens of everyday practice.”

Why Ophthalmologists Are at Increased Risk for Injury

Ophthalmologists are facing a “perfect storm” of risk factors. Ergonomics experts agree that a long list of MSDs of the back, shoulders, neck, and upper extremities can develop when there is a perfect storm of occupational risk factors. Some to consider:

- Repetitive tasks, especially under stressful circumstances.
- Tasks that require fine motor control and close visual focus. These raise muscle tension in the head, neck, and upper extremities.
- Prolonged maintenance of awkward body positions while working.
- This set of risk factors “pretty much defines almost everything ophthalmologists do every day,” said Martin Wand, MD, a Farmington, Conn., ophthalmologist, now retired, whose focus was glaucoma and cataract.

Many ophthalmic tasks can result in fatigue and inflammation. Tasks that can potentially put you at risk for MSDs include use of a slit lamp, especially if it is necessary to hold a contact lens against a patient’s eye; all laser procedures; and all surgery requiring an operating microscope. Prolonged stretching or compression during these tasks causes fatigued and overexerted muscles. Non-neutral postures can pull and stretch tendons, blood vessels, and nerves over ligaments or bone, pinching, restricting, and inflaming them.

There are multiple pathways to injury. Some of the injury pathways toward MSDs of the trunk and extremities include the following:

- Back. Maintaining an unbalanced posture for long periods of time produces static loading of the soft tissues and ischemic accumulation of metabolites in them. This can accelerate disk degeneration and lead to disk herniation.
- Neck. Repeated flexion or extension of the neck while at the slit lamp, operating microscope, or computer terminal can cause chronic pain and severe spasms.
- Arms and shoulders. Extended periods of holding bent arms too high, too low, or unsupported while with a patient, or while entering data into a computer, can produce shoulder pain, swelling of tendons and ligaments in the carpal tunnel, and tingling and numbness of the fingers and hands from tendinitis and tenosynovitis.
- Arms. Repeatedly resting the elbows or forearms on a hard surface during procedures, or on Malpositioned arm rests, can lead to ulnar neuropathy.

Frequently, those pathways interact. Those interactions can lead to a complex collection of symptoms that can worsen and/or become chronic over time. Your symptoms can vary from day to day, depending on the work activity.

Injuries can sneak up on you. An absence of apparent symptoms today is no guarantee of what tomorrow will bring, experts in ergonomics say. MSDs are multifactorial, potentiated by everything from lifestyle and psychological stress to small changes in the way the office or surgical suite is arranged. Often, people say they were fine until their normal routines changed because of a new job, new equipment, or expanded duties. Some studies have linked MSDs to personal factors—such as gender, height and genetic predisposition—but others have not.

Consider All Aspects of Your Operating Room

“My concern is ergonomics in the operating room,” said Kenneth L. Cohen, MD, a cornea specialist. “The issue is microsurgery, which limits movements and causes awkward postures and movements for fixed and repetitive periods of time.”

Dr. Cohen listed several problems:

- Restricted freedom of movement
- Static posture
- Minimal muscle activity
- Lack of body balance caused by using foot pedals while also using the microscope to view the operative field
- Mismatch between the height and design of the operative bed and the surgeon’s height, compounded by issues with the support and comfort of the surgeon’s chair
- The combined positioning of the surgeon’s chair, microscope base, and foot pedals, along with the design of the operating table, inhibits proper positioning for comfortable and safe access to the operating field
- Tripping hazards caused by cables

“All of these issues lead to occupational musculoskeletal injuries, due to restricted movement, minimal muscle activity, and awkward positions resulting in muscle fatigue and injury,” said Dr. Cohen, who is the Sterling A. Barrett Distinguished Professor of Ophthalmology at the University of North Carolina in Chapel Hill. “In my opinion, there is need to make ergonomic improvements to operating room design, instrument design, and equipment design to minimize the nonergonomic, repetitive positioning of our bodies during microsurgery, which limits muscular movements and places us in unnatural positions.”

Know the Risk Factors, and the Solutions

Work-related MSDs have a multifactorial nature and variable presentation, which means it might not be obvious which combination of possible solutions will halt, or prevent, the pain cycle for an individual ophthalmologist. Some of the major risk factors for ophthalmologists are described below.

Avoid Neck Injuries

Risk factor—the slit lamp. In other occupations, especially those involving data entry, neck pain is caused by improper posture and/or improperly adjusted equipment. The head, neck, and torso should be aligned vertically in a
SATURDAY, OCTOBER 27, 2018

9:30 AM
You’ll Never Believe What Happened to Me in the OR Today! Pearls for Mastering Complicated Cases
Lisa Nijm, MD

10:00 AM
Multifactorial Approaches to DME and RVO
David Callanan, MD

10:30 AM
A Minimally Invasive Approach to IOP Control: Introduction to the Technology and Outcomes
Arsham Sheybani, MD

11:00 AM
The Science Behind Neurostimulation and Ophthalmology
Preeya Gupta, MD

11:30 AM
Multifactorial Approaches to DME and RVO
Brian Chan-Kai, MD

12:00 PM
Advances for Complex Cataracts
David Chang, MD

12:30 PM
Nasty Cataracts: Prevention and Management of Complications
Robert Osher, MD

1:00 PM
A Minimally Invasive Approach to IOP Control: Introduction to the Technology and Outcomes
Davinder Grover, MD

1:30 PM
New Techniques and Technologies in Cataract Surgery
Eric Donnenfeld, MD, FACS

2:00 PM
Multifactorial Approaches to DME and RVO
Jeremy Wolfe, MD

2:30 PM
A Minimally Invasive Approach to IOP Control: Introduction to the Technology and Outcomes
Manjool Shah, MD

3:00 PM
70th Anniversary Toast

3:30 PM
The Key Elements of Effective Intravitreal Injection Reimbursement
Dave Baczewski, MD

SUNDAY, OCTOBER 28, 2018

9:30 AM
Multifactorial Approaches to DME and RVO
David Lally, MD

10:00 AM
A Minimally Invasive Approach to IOP Control: Introduction to the Technology and Outcomes
Nathan Radcliffe, MD

10:30 AM
IOL Exchange From Mundane to Insane
Brandon Ayres, MD

11:00 AM
Multifactorial Approaches to DME and RVO
John Huang, MD, MBA, CPE

11:30 AM
A Minimally Invasive Approach to IOP Control: Introduction to the Technology and Outcomes
Steven Sarkesian, MD

12:00 PM
Techniques for Your Surgical Presbyopic Patient
George Waring IV, MD

12:30 PM
The Key Elements of Effective Intravitreal Injection Reimbursement
Dave Baczewski, MD

1:00 PM
The Key Elements of Effective Gel Stent Reimbursement
Sharon DeCanio, MD

1:30 PM
Mastering DALK: Top 10 Surgical Pearls
Neda Shamie, MD

2:00 PM
Multifactorial Approaches to DME and RVO
Robert Kwun, MD

2:30 PM
A Minimally Invasive Approach to IOP Control: Introduction to the Technology and Outcomes
Inder Paul Singh, MD

3:00 PM
The Science Behind Neurostimulation and Ophthalmology
John Sheppard, MD, MMSc

3:30 PM
The Key Elements of Effective Gel Stent Reimbursement
Sharon DeCanio, MD

Visit Booth 1308
Avoid Arm and Hand Injuries

Risk factor—use of the keyboard. With the high prevalence of electronic health records, physicians might be spending more time typing on a computer keyboard. In addition to the risks from repetitive use of the keyboard, certain tasks require the exertion of concentrated force, during which hand and arm muscles work continually (e.g., when the mouse is so sensitive that the pointer is hard to control).

Solution. With every new terminal you encounter, adjust the chair, table, monitor, keyboard, and mouse to provide the best posture with the least amount of muscle strain. You also can modify the sensitivity of your mouse.

Risk factor—contact stress. Contact stress can cause tingling and numbness if a tendon, nerve, or blood vessel is stretched over a bone or tendon. Tendons can be damaged when repeated finger motions are performed with a bent wrist. The external version of this occurs when the forearms or wrists/palms come into contact with sharp edges on a table or wrist rest.

Solution. Do not lean your forearms or elbows on unpaddded surfaces. Keep your palms, wrists, and forearms in a straight line, roughly parallel to the floor. Watch for sharp edges on accessories like wrist rests.

In the Exhibit Hall: Here’s What to Ask Vendors

Make sure you schedule time for the exhibit hall, where you can meet with ophthalmology’s full range of vendors, request hands-on demos, and compare competing products.

Caveat emptor—safeguard your long-term health. Before you get your wallet out, consider the ergonomic impact of any prospective purchase.
will it help extend your working life or cut it short?

Q. Ask the vendor to describe any ergo-friendly features. Dr. Marx urges you to ask whether ergonomic features were incorporated into the design and manufacture of the equipment. For example, does the design give careful attention to elbow support? Will the physician have to overreach? As an ophthalmologist, you are very familiar with the ergonomic limitations of your current equipment, and “you should let vendors know that you won’t buy equipment unless it is attempting to address those problems,” said Scott E. Olitsky, professor of ophthalmology at the University of Missouri–Kansas City School of Medicine. Issues you might consider include the following:

Indirect ophthalmoscopes. Where is the center of gravity? With some products, said Dr. Olitsky, “the weight is being placed forward and causing neck problems. Manufacturers could have designed the analysis looked to at the loading forces placed on the neck.”

Loupes. What is the declination angle of the loupe’s? What is the angle of flexion users must have at their necks to place their hands in a comfortable and balanced position? “If the manufacturer does not know, you could have some take a photograph [of you at the loupe] and measure your neck angle with a goniometer app that is easy to use on a phone,” said Dr. Olitsky. “Doing this will also let the manufacturers know that ophthalmologists are aware of this issue and will measure the angle before we purchase.” (Note: On Sunday, 12:45-1:45 p.m., visit the Scientific Posters area in Hall A, where Donny Who Suh, MD, will be on hand to chat about Poster Poli83, Surgical Loupe Customization to Improve Ergonomics Among Ocular Surgeons. Also on Sunday, at 2:30 p.m., he will deliver the opening talk at the Poster Theater’s pediatric ophthalmology session.)

Slit lamps. Has the front end of the slit lamp been shortened so that the doctor does not need to lean forward? Does the stool have legs that stick out and hit the footrest of the exam chair, preventing the stool from being used? “We should be asking about the safety of the equipment we buy.”

Q. If a product claims to be ergonomic, where’s the evidence? “What I see is that many chairs, etc., are labeled as ergonomic with absolutely no data to back that claim,” said Dr. Olitsky. If a product is labeled as being ergonomic or advertises ergonomic features, the manufacturer should be able to provide detailed information to justify that claim, including data provided by specific testing.

Q. Will the vendor teach you how to use its product ergonomically? Find out what, if any, service the vendor provides. For example, does it help practices set up equipment and plan the workflow in a way that reduces risk factors for injury? If it has been helping practices set up their offices and work lanes, ask if you can talk to one of those practices.

Q. What is the vendor’s return policy? Will you be able to return equipment if ergonomic issues develop? Similarly, if the purchase is being made to address existing ergonomic issues, can you return the equipment if those issues aren’t resolved?

Make Sure You Are Talking to a Legitimate Vendor

When you do business at a convention, follow these precautions.

• Beware of individuals who approach you outside of an exhibit booth. Exhibitors are not permitted to canvas outside their exhibit area.

• Obtain business cards from individuals such as lasers and biometry-measuring devices are frequently mounted on tables that “are not designed for patients who have protruding abdomens and chests,” said Dr. Cohen. This can make treatment and examination difficult for both physician and patient. “Comfortable positioning for the ophthalmologist is impossible, and a third party is needed to push and keep the patient in position against the headrest so accurate focusing is possible,” said Dr. Cohen. “The ophthalmologist must apply constant forward pressure against the patient’s abdomen and chest. This causes undue discomfort to the ophthalmologist and patient.” What can be done to address this?

Q. Did the vendor take ergonomics into consideration? Were ergonomic specialists consulted in the equipment design and/or in recommending how the equipment should be set up in offices? If so, ask for a copy of the specialist’s report. “We ask for safety reports about cars before we buy them,” said Dr. Olitsky. “We should be asking about the safety of the equipment we buy.”

AAO 2018

Visit the EyePlay Experience. Take a time out to recharge your batteries—both yours and your phone! 5 ways to relax and de-stress. At the EyePlay Experience, you can:

• enjoy a seated massage, 

• play iPad games, 

• relax with therapy animals (during set times), 

• watch football (10:00 a.m.-5:00 p.m. on Saturday and Sunday), and 

• assemble hygiene kits for charity (during set times).

Note: Check the Mobile Meeting Guide (aaao.org/mobile) for the Fun Zone, pet therapy, beer, popcorn, and hygiene kit assembly schedules.

Get tech help. Internet access, and more. While at the EyePlay Experience, you also can:

• visit the Tech Bar to get technical assistance with the Mobile Meeting Guide or any other technology-related question, 

• use your own device to access WiFi, 

• use one of the available computers to go online, and 

• use the concierge service to recharge your mobile device.

When: Exhibit hall hours: Saturday-Monday, 9:00 a.m.-5:00 p.m.; Tuesday: 9:00 a.m.-1:00 p.m.

Where: Booth 2581.

Access: Free.

Wellness Corner at the Young Ophthalmologist (YO) Lounge. Unwind with a massage. When: Saturday-Monday, 8:00 a.m.-5:00 p.m.; Tuesday, 8:00 a.m.-1:00 p.m.

Where: YO Lounge (Grand Concourse, Level 3, Lobby).

Access: Ophthalmologists who are in training or in their first 5 years of access.

Friends of Bill W. Don’t lapse this week. Visit this nontoxic space where you can enjoy mutual support and candid exchange. When: Saturday-Monday, 12:45-1:45 p.m.

Where: Room 5501.

Access: Free.

physician wellnesS suPPort

From handy apps to articles in the peer-reviewed literature, what resources are available to help safeguard physician well-being? Visit aaowellness.org for 2 lists of resources—the first focuses on what the individual can do, the second focuses on what can be done at the practice level.

physician wellnesS at aaO.ORG

From handy apps to articles in the peer-reviewed literature, what resources are available to help safeguard physician well-being? Visit aaowlness.org for 2 lists of resources—the first focuses on what the individual can do, the second focuses on what can be done at the practice level.

Dr. Fung is a retired retina specialist and former president of the Retina Society.

Dr. Marx is a vitreoretinal specialist at Lahey Medical Center in Burlington, Mass.

Dr. Olitsky is professor of ophthalmology at the University of Missouri-Kansas City (UMKC) School of Medicine.

Dr. Wand is a retired glaucoma and cataract specialist.

Financial disclosures: Drs. Cohen, Fung, Marx, Olitsky, and Wand: None.

This article includes excerpts from 3 Eyenet articles written by Linda Roach: “Ophthalmic Ergonomics: Continuing Challenges and New Insights” (Practice Perfect, April 2018), “Seven Risk Factors for Injury, and Seven Solutions” (Practice Perfect, September 2009), and “Is the Job You Love a Pain in the Neck?” (Practice Perfect, July/August 2009).
Winning Photography Is on Display

The photos shown here were selected from among the First Place winners—in both the print and stereo categories—at the 2017 Ophthalmic Photographers' Society (OPS) Scientific Exhibit during AAO 2017 in New Orleans. To see this year's winners, stop by the 2018 OPS Scientific Exhibit (Booth 2556), and enter the raffle. Prizes include: 1 mounted print, 2 1-year OPS memberships, which includes 2 certification-oriented webinars (the CRA and OCT-C*), and 3 2019 OPS calendars. Calendars will also be for sale for $15 at the booth. Proceeds help fund the OPS scholarship program to assist photographers in getting started in the field by funding part of their travel to and registration for the OPS annual meeting, which takes place simultaneously with the Academy's annual meeting. Learn more about the OPS at opsweb.org.

2017 OPS Exhibit Winners.
From left to right, and top to bottom.


Fundus Photography, High Magnification. Retinal Hamartoma. Noelle Pensec, CRA, Columbia University Medical Center.


*Certified Retinal Angiographer and Optical Coherence Tomographer-Certified.
EYENET'S AAO 2018 NEWS

EXHIBIT HALL PHOTO CONTEST


T
he honorary lectures are easy to fit into your schedule, as they are free and usually between 15 and 35 minutes long. Preview the highlights of these lectures below, and in the Sunday AAO 2018 News.

FRIDAY, Oct. 26

RETINA
Charles L. Schepens, MD, Lecture: Developing Therapies for AMD: The Art and Science of Problem-Solving, presented by Joan W. Miller, MD.


“Innovative solutions to problems often seem intuitively obvious in hindsight, yet we frequently find current problems insurmountable. In the 1990s, age-related macular degeneration (AMD) was an ugly problem, with only destructive therapies for advanced disease. Now, we complain about treatment burden, and we are even more frustrated by the lack of therapies for early AMD and geographic atrophy. In this lecture, we will revisit the pathway to past successes, and then explore the hurdles and potential strategies needed to develop a new generation of therapies.”

Retina Subspecialty Day 2018: The Art + Science of Retina + Vitreous (Friday, 8:00 a.m.–5:36 p.m., and Saturday, 8:00 a.m.–5:28 p.m.) is organized in conjunction with the American Society of Retina Specialists, the Macula Society, the Retina Society, and Club Jules Gorn.

REFRACTIVE SURGERY
Troutman Award: Histological and MicroRNA Signatures of Corneal Epithelium in Keratoconus, presented by Yumeng Wang, MD, PhD.

When: Friday, 4:00-4:15 p.m., during Refractive Surgery Subspecialty Day 2018.

Where: Room E354.

“Keratoconus has long been described as a corneal stromal disease. However, in vivo confocal images have shown abnormal features in every layer of the cornea, including abnormal epithelial keratocytes. This leads us to ask: What is the histological structure of keratoconic corneal epithelia? What mechanism leads to corneal epithelial thinning? How does one collect epithelium from keratoconus patients in addition to the surgical specimens? Does a novel, nonsurgical method of collecting epithelium from keratoconus patients have potential for clinical practice? This lecture aims to throw light on these questions through the lens of our novel findings on histopathology of keratoconic corneal epithelia and its miRNA regulation.”

Refractive Surgery Subspecialty Day 2018: Better Together—Lens- and Cornea-Based Surgery (Friday, 7:15 a.m.–5:20 p.m.) is the annual meeting of the International Society of Refractive Surgery.

SATURDAY, Oct. 27

GLAUCOMA
The American Glaucoma Society Subspecialty Day Lecture: The Future of Sensors in the Diagnosis and Monitoring of Glaucoma, presented by Marlene R. Motsen, MD.


Where: Room E354.

“The MIKS (minimally invasive glaucoma surgery) revolution is now playing a positive role in allowing us to treat glaucoma at earlier stages, as the surgery may afford less risk with acceptable efficacy. However, even with easier access to these miniature shunts or devices, it is still difficult to know what the patient’s pressure is at different times of the day. What happens to the intraocular pressure (IOP) at night, with exercise, and with different medications? One answer to this dilemma is to surgically place an intraocular sensor in the eye to monitor the IOP. This lecture will focus on the evolution of IOP monitoring and how sensors will affect the way we practice ophthalmology.”

Glaucoma Subspecialty Day 2018: A New Renaissance (Saturday, 8:00 a.m.–5:33 p.m.) is organized in conjunction with the American Glaucoma Society.

SUNDAY, Oct. 28

RETINA
Jackson Memorial Lecture: Lessons Learned From Avastin and OCT: The Great, the Good, the Bad, and the Ugly, presented by Philip J. Rosenfeld, MD, PhD.

When: Sunday, 9:33-9:58 a.m., during the Opening Session.

Where: Room E354.

“Optical coherence tomography (OCT) and anti-VEGF therapy have been great, revolutionary developments for diagnosing and managing neovascular and exudative eye diseases, particularly for age-related macular degeneration. During the introduction and evolution of these imaging and treatment strategies, many good, admirable individuals and organizations contributed to the overall acceptance and success of these technologies. At the same time, other individuals attempted to block access to Avastin and prevent its widespread use in the United States and abroad. Even when the situation grew ugly, our profession and government preserved access to this low-cost, effective therapy that has prevented blindness worldwide. Together, OCT and Avastin have saved Medicare and patients over $30 billion since 2006.”

The Opening Session (8:30-10:00 a.m.).

CORNEA
Whitney G. Sampson Lecture: Re-thinking Fuchs Dystrophy in the Era of Successful Descemet Stripping, presented by Kathryn A. Colby, MD, PhD.

When: Sunday, 11:18-11:43 a.m., during Sym12, Hot Topics of the Ocular Surface.

Where: Room S406a.

“Fuchs endothelial corneal dystrophy (FECD) is the most common indication for corneal transplantation, and it affects up to 4% of ophthalmology patients in the United States. First described over 100 years ago, FECD remains an enigmatic disease. The revolution in surgical treatment of FECD over the past 15 years, including the recent demonstration that Descemet stripping only (DSKO) can be used as...
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a treatment in certain FECD patients, has led to renewed interest in this common corneal condition. This talk will present a framework to tease apart the cause(s) of FECD, as well as review the current state of endothelial keratoplasty and DSO, and look at the future for nongraft therapies.

**REFRACTIVE SURGERY**

**Barraquer Lecture: Lenticular Implantation and Refractive Eye Banking as a New Frontier in Refractive Surgery**, presented by Ronald R. Krueger, MD.  
**When:** Sunday, 11:23-11:43 a.m., during Sym25, The Era of Femtosecond Lasers.  
**Where:** Room E450.  
“Jose I. Barraquer, MD, is known as the father of modern-day refractive surgery. Dr. Barraquer’s earliest procedures and his first publication in 1949 involved refractive keratoplasty as a tissue addition approach. The advent of small-incision lenticular extraction (SMILE) over the past 9–10 years has reintroduced the possibility of tissue addition in refractive surgery by reimplanting the precision laser-shaped lenticules that are extracted. So far, lenticular implantation has been proposed for the correction of hyperopia, presbyopia, and keratoconus.

“Reimplanting SMILE lenticules into a pocket (in femtosecond intrastromal lenticular implantation) or mechanically-shaped donor lenticules under a flap (in lenticular implantation keratoplasty) offers correction of higher hyperopia with greater stability and natural asphericity than the tissue subtraction in hyperopic LASIK.

“Central implantation of small, 1- to 3-mm–diameter alloplastic lenticules, shaped with a femtosecond laser (in Prébysyopic Allogenic Refractive Lenticule, or PEARL) or with an excimer laser (by Allotex), offers a safer, more biocompatible solution to pseudophysein the synthetic implantation of corneal inlays.

“Sutureless lenticular implantation in keratoconus offers the possibility of enhancing the biomechanical instability and irregular refractive shape of keratoconus in a manner safer than penetrating keratoplasty and quicker than deep anterior lamellar keratoplasty.

“With each of these indications, the well-regulated environment of an eye bank offers surgeons safe and reliable access to refractive-shaped lenticules, creating not only a new frontier in refractive surgery but also an exciting new dimension in the area of refractive eye banking.”

**The Era of Femtosecond Lasers** | 10:15-11:45 a.m. | is cosponsored by the International Society of Refractive Surgery.

**OCULOPLASTICS/PROSTHETICS**

**Ruedemann Lecture: Choosing the Ideal Implant Size, an Ocularist’s Perspective**, presented by Joseph A. LeGrand Jr., BCO.  
**When:** Sunday, 11:29-11:44 a.m., during Sym11, Moving Target: Advances in Prosthetic Eyes and Mobility.  
**Where:** Room E350.  
“I have seen a trend toward bigger implants being used for enucleation and evisceration surgery. This is a positive development, as larger implants help to reduce problems of superior sulcus depression and enophthalmos. However, very large implants can also create fitting and fabrication challenges for the oculist. In a survey, members of the American Society of Ocularists were asked, ‘What is the ideal thickness of a prosthetic eye?’ The results indicate a wide range of preferences. I will discuss implant size from an oculist’s perspective.”
Moving Target: Advances in Prosthetic Eye and Motility (10:15-11:45 a.m.) is cosponsored by the American Society of Ocularists.

**UVEITIS AND IMMUNOLOGY**

C. Stephen and Frances Foster Lecture on Uveitis and Immunology: The Eye Fights Back: Immune Defense in a Dangerous World, presented by Janet L. Davis, MD.

**Where:** Room S406a.

“Uveitis is usually categorized as being due to either infection or autoimmunity. The reality is more complicated than that. The immune defenses of the eye are not only highly regulated but also highly responsive to any perceived threat, including both endogenous and exogenous antigens. Regaining the null point of no inflammation requires a better understanding of both the inciting event and immune mechanisms. We see uveitis as a bad thing, but the immune system is often just doing its job. Modulating and ultimately stopping destructive processes, whether infectious, autoinflammatory, or autoimmune in etiology, is the key to preserving sight.”

C. Stephen and Frances Foster Lecture on Uveitis and Immunology (12:45-1:45 p.m.).

**GLAUCOMA**

Robert N. Shaffer Lecture: At the Technological Confluence of Glaucoma Clinical Care and Research, presented by Sayako E. Moroi, MD, PhD.

**Where:** Room E450.

“We are amidst a confluence of great advances in knowledge about clinical risk factors, glaucoma genes, new drugs, novel surgical approaches, biological pathways, biomechanics, augmented reality for vision and visual field testing, data science analytics, and population health. Currently, glaucoma management is predominantly an event-based endeavor. However, under this approach, some patients progress to blindness. In order to change glaucoma care from event-based management to precision-based prevention of glaucoma-related blindness, we need to overcome barriers; in order to embrace precision-based prevention of glaucoma-related blindness, we need to identify and validate biomarkers.”

Robert N. Shaffer Lecture: Practical Guides to the Dilemma of Managing Cataract in Glaucoma Patients (2:00-3:30 p.m.) is cosponsored by Prevent Blindness.

**OCULOPLASTICS**

Wendell L. Hughes Lecture: The Evolution and Revolution of Oculofacial Plastic Surgery, presented by Don O. Kikkawa, MD.

**Where:** Grand Ballroom S100c.

“Oculofacial plastic surgery is a specialty in its infancy. The field evolved out of need for reconstructive surgeons trained to protect sight and knowledgeable about the intricate structure and function of the surrounding regions of the orbit and face. Within the last decade, there have been revolutionary advances placing oculofacial plastic surgery at the forefront of precision medicine. This lecture will highlight recent advances and historical perspectives.”

The Nuances of the Lower Eyelid and How to Treat Malposition (3:45-5:15 p.m.) is cosponsored by the American Society of Ophthalmic Plastic and Reconstructive Surgery.

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Best-Read Journal Highlights

Don’t Miss These Hot Topics

Generating Personalized Target IOPs for Patients With OAG
April 2018

In secondary analyses of longitudinal data from 2 randomized controlled trials, Kazemian et al. forecasted the progression of open-angle glaucoma (OAG) at different levels of intraocular pressure (IOP) to help establish personalized IOP goals for patients. The tool they derived from real-world experience may improve clinical decision-making.

For their study, the authors developed and validated Kalman filter (KF) models for fast-, slow-, and nonprogressing disease among participants with moderate or advanced OAG in the Collaborative Initial Glaucoma Treatment Study (CIGTS) or the Advanced Glaucoma Intervention Study (AGIS).

The KF can generate personalized and dynamically updated forecasts of OAG progression for different IOP targets. For each participant, the authors determined the expected change in mean deviation (MD) if the patient was to maintain IOP at 1 of 7 levels (6, 9, 12, 15, 18, 21, or 24 mm Hg) for 5 years. In addition, the authors modeled and predicted MD changes for the same time frame if IOP was increased or decreased by 3, 6, and 9 mm Hg from the level attained in the trials.

Main outcomes were personalized estimates of the change in MD under the various target IOP levels.

The authors concluded that the T&E approach is not inferior to the monthly regimen. (This originally appeared in the January 2018 issue.)

Primary Tube or Trabeculectomy for Glaucoma: 1-Year Outcomes
May 2018

Gedde et al. reviewed 1-year treatment outcomes of the primary tube versus trabeculectomy (PTVT) study and found that trabeculectomy plus mitomycin C (MMC) achieved greater success than did tube-shunt surgery.

This multicenter randomized study included 242 patients (242 eyes) with medically uncontrolled glaucoma and no previous incisional ocular surgery.

Patients were enrolled at 1 of 16 centers and were assigned randomly to receive a tube shunt (350-mm² Baerveldt glaucoma implant; n = 125) or trabeculectomy and MMC (0.4 mg/mL for 2 minutes; n = 117). Outcome measures were intracocular pressure (IOP), number of glaucoma medications, visual acuity, visual field findings, surgical complications, and treatment failure. Failure was defined as any of the following: IOP > 21 mm Hg or reduced by 20% or less from baseline on 2 consecutive follow-up visits after 3 months; IOP ≤ 5 mm Hg on 2 consecutive follow-up visits after 3 months; reoperation for glaucoma; or loss of light-perception vision.

The cumulative probability of failure in the year of follow-up was 17.3% for the tube group and 7.9% for the trabeculectomy group. At 1 year, the mean (± standard deviation [SD]) IOP was 13.8 (4.1) mm Hg for those with a tube shunt and 12.4 (4.4) mm Hg for those with trabeculectomy. The number of glaucoma medications (± SD) at 1 year was 2.1 (1.4) in the tube group and 0.9 (1.4) in the trabeculectomy group.

Postoperative complications occurred in 29% of tube recipients and 41% of trabeculectomy cases. Serious complications resulting in reoperation or a loss of at least 2 Snellen lines occurred in 1 patient (1%) in the tube group and 8 (7%) in the trabeculectomy group.

The authors stressed that selecting a suitable glaucoma operation involves considering risk/benefit profiles on a case-by-case basis. (This originally appeared in the May 2018 issue.)
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13 (54%) of the patients were on anti-coagulation therapy for stroke prevention (n = 9), stroke history (n = 3), or atrial fibrillation (n = 1). Main outcome measures included frequency and extent of SMH displacement and postoperative VA, retinal thickness, and complications. Based on image review, SMH was considered subretinal in 5 patients, sub-RPE (retinal pigment epithelium) in 2, and both subretinal and sub-RPE in 17. Hemorrhage size was small (not reaching arcades) in 6 patients, large (extending to the arcades) in 2, extensive (extending past the arcades) in 9, and massive (extending to 2 arcades and/or past the equator) in 7. With regard to retinal thickness, the hemorrhages were < 500 μm in 7 patients and > 500 μm in 17. All patients underwent pars plana vitrectomy (with induction of a posterior vitreous detachment, if necessary), followed by subretinal injection of iPA and filtered air. Most (n = 25) of the patients also received bevacizumab as part of the surgery or treatment. They were then followed for an average of 12.5 months (range, 3-28 months).

At 3 months postoperatively, there was complete displacement of SMH in all eyes. Although 13 eyes experienced no complications, 5 had a recurrent subretinal SMH that was successfully displaced with the same treatment. The remaining 6 eyes had a nonclearing vitreous hemorrhage (n = 3), retinal detachments (n = 2), or macular hole (n = 1). Mean retinal thickness improved from 463.7 (range, 3-28 months).

In the remaining 76 cases, the POAG/DM group included 55 eyes (32 patients) and the POAG-only group included 142 eyes (111 age-matched patients). Participants with type 2 DM were identified by self-reporting a history of DM and use of medication for diabetes. Univariate and multivariable mixed-effects models were applied to compare rates of VF loss and RNFL loss between the study groups. Median follow-up time was 5.7 years. Results showed that the mean rate of global RNFL loss was 2.04 field changes in the POAG/DM group (−0.40 vs. −0.83 μm per year; p = .01). The POAG/DM group also had slower rates of VF mean deviation and pattern standard deviation loss, but the between-group differences were not significant.

There is long-standing debate on the role of type 2 diabetes mellitus (DM) in primary open-angle glaucoma (POAG). With this in mind, Hou et al. compared rates of visual field (VF) loss and retinal nerve fiber layer (RNFL) thinning for patients with POAG and found no difference in VF progression between patients without type 2 DM and those who had type 2 DM with undetectable diabetic retinopathy. They also found that treated DM was linked to significantly slower loss of RNFL thickness. This study included 197 eyes. The POAG/DM group consisted of 55 eyes (32 patients) and the POAG-only group included 142 eyes (111 age-matched patients). Participants with type 2 DM were identified by self-reporting a history of DM and use of medication for diabetes. Univariate and multivariable mixed-effects models were applied to compare rates of VF loss and RNFL loss between the study groups. Median follow-up time was 5.7 years. Results showed that the mean rate of global RNFL loss was 2.04 field changes in the POAG/DM group (−0.40 vs. −0.83 μm per year; p = .01). The POAG/DM group also had slower rates of VF mean deviation and pattern standard deviation loss, but the between-group differences were not significant. The global and sectoral RNFL thinning rates for metformin users and nonusers in the POAG/DM group were compared to determine whether metformin could have a protective effect, but no significant difference was observed. Most subjects in the POAG/DM group (84.4%) were taking metformin.

**References**


**AcrySof® IQ ReSTOR® Family of Multifocal IOls Important Product Information Caution:** Federal (USA) law restricts this device to the sale by or on the order of a physician. **Informations:** The AcrySof® IQ ReSTOR® Posterior Chamber Intraocular Multifocal IOls include AcrySof® IQ ReSTOR® and AcrySof® IQ ReSTOR® Toric and are intended for primary implantation for the visual correction of aphakia secondary to removal of a cataractous lens in adult patients with and without presbyopia, who desire near, intermediate and distance vision with increased spectacle independence. In addition, the AcrySof® IQ ReSTOR® Toric IOL is intended to correct pre-existing astigmatism. The lenses are intended to be placed in the capsular bag. **Warnings/Precuations:** Careful preoperative evaluation and sound clinical judgment should be used by the surgeon to decide the risk/benefit ratio before implanting a lens in a patient with any of the conditions described in the Directions for Use labeling for each IOL. Physicians should refer emmetropia, and ensure that IOL centration is achieved. Care should be taken to remove viscoelastic from the eye at the close of surgery. The ReSTOR® Toric IOL should not be implanted if the posterior capsule is ruptured, if the zone(s) are damaged, or if a primary posterior capsular opacity is planned. Rotation can reduce astigmatic correction; if necessary lens repositioning should occur as early as possible prior to lens encapsulation. Some patients may experience visual disturbances and/or discomfort due to multifocality, especially under dim light conditions. A reduction in contrast sensitivity may occur in low light conditions. Visual symptoms may be significant enough that the patient will request explantation of the multifocal IOL. Spectacle independence rates vary; some patients may need glasses when reading small print or looking at small objects. Posterior capsule opacification (PCO), when present, may develop earlier than clinically significant PCO with multifocal IOls. Prior to surgery, physicians should provide prospective patients with a copy of the Patient Information Brochure available from Alcon informing them of possible risks and benefits associated with the AcrySof® IQ ReSTOR® Toric IOL. Do not resterilize; do not use over 45°C. Use sterile irrigating solutions such as BSS® or BSS PLUS® Sterile Intraocular Irrigating Solutions. **Attention:** Reference the Directions for Use labeling for each IOL for a complete list of indications, warnings, and precautions.
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Introducing Ophthalmology Glaucoma

Meet the newest member of the Ophthalmology journal family: Ophthalmology Glaucoma.

“The goal of Ophthalmology Glaucoma is to publish the highest quality research specifically targeted to the glaucoma community,” said Editor-in-Chief Henry D. Jampel, MD, MHS, at Wilmer Eye Institute in Baltimore.

“The articles published may not be of broad enough interest for the highly diverse audience for the parent journal Ophthalmology, but they should meet the same rigorous standards for acceptance.”

Ophthalmology Glaucoma, which is being published in collaboration with the American Glaucoma Society, will be published on a bimonthly basis. For information, contact saojournal@aoa.org.

Ophthalmology Glaucoma
Selected by Henry D. Jampel, MD, MHS

Artificial Intelligence and Glaucoma Detection
July/August 2018

Using monoscopic fundus photos, Liu et al. developed a deep learning-based algorithm to detect glaucomatous optic discs. They found that their artificial intelligence (AI) algorithm was highly accurate in identifying glaucomatous discs. In addition, they concluded that, as it is relatively easy to obtain monoscopic images, the algorithm has potential in screening large populations.

For this database study, the researchers obtained fundus photos (n = 3,768) from several previous clinical studies and images from publicly available online databases (n = 626), including the High-Resolution Fundus (HRF) database. They then merged the databases, with the exception of the HRF database, and divided the images into a training set that comprised 80% of all cases and a testing set that comprised 20% of all cases. The HRF images were used as an additional testing set.

Both healthy and glaucomatous eyes were represented in all datasets.

The researchers tested their AI model and found that its accuracy was 92.7% and that it achieved 89.3% sensitivity and 92% specificity. When the HRF dataset was used for additional testing, the AI model again was highly accurate and achieved 86.7% in both sensitivity and specificity.

In order to compare the AI model’s accuracy with the diagnostic skill of experienced clinicians, the researchers randomly selected a series of monoscopic images and submitted them to a panel of 18 ophthalmologists. They also submitted the HRF images to 3 of the 18 ophthalmologists. The clinicians’ overall accuracy rate was 65%; those who evaluated the HRF images achieved a higher level of accuracy (77%).

In previous studies, clinician accuracy has been found to be higher when stereoscopic fundus images are used, and the authors noted that stereoscopic images tend to provide better inter- and intraobserver reproducibility.

The monoscopic images used in this study varied in terms of quality and resolution, and the testing set included a considerable number of images of anomalous optic discs. (This originally appeared in the August 2018 issue.)

OTHER JOURNALS
Selected by Deepak P. Edward, MD

Visual Structure and Function of Athletes in Collision Sports
Journal of Neuro-Ophthalmology
Published online Sept. 6, 2017

In a comparison study of athletes in collision sports and matched controls, Leong et al. noted substantial retinal axonal and neuronal loss in the athletes, along with reduced visual function and quality of life (QOL). Patterns were similar to those of several neurologic diseases, including Alzheimer disease, multiple sclerosis, and Parkinson disease.

In their cross-sectional study, the authors compared 46 professional athletes (active or retired) with 104 age- and sex-matched healthy controls who had not participated in collision sports. All study participants received spectral-domain optical coherence tomography to measure thickness of the peripapillary retinal nerve fiber layer (RNFL) and the macular ganglion cell complex. High-contrast visual acuity (100% level) and low-contrast letter acuity (1.25% and 2.5% levels) were determined, and the King-Devick test of rapid number naming was administered. Vision-specific measures of QOL also were assessed.

On average, the RNFL of athletes (14 boxers, 29 football players, and 3 ice hockey players) was 4.8 μm thinner than that of controls. RNFL thinning was highest for boxers (10.8 μm vs. controls). Binocular and monocular low-contrast letter acuity at 2.5% contrast, as well as vision-specific QOL, differed significantly between athletes and controls. Performance time for rapid number naming was similar for the study groups. (This originally appeared in the March 2018 issue.)

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