OPHTHALMOLOGY

GUIDE FOR AUTHORS

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A. INTRODUCTION – Basic Information

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B. DETAILED SPECIFICS

ABBREVIATIONS/ACRONYMS

Please be sure all abbreviations/acronyms are spelled out at first use in the abstract and again at first use in text. An abbreviation/acronym should appear first in parentheses immediately after the term or phrase to which it refers. Every abbreviation used in any table or figure should be defined in each corresponding legend.

The following abbreviations have been deemed as accepted and understood abbreviations without any further clarification needed. With these acronyms, no definitions are required at any point in the text (not even first use) and they are also acceptable in titles:

AIDS	acquired immune deficiency syndrome
cDNA	copy deoxyribonucleic acid
CNS	central nervous system
DNA	deoxyribonucleic acid
HLA	human leukocyte antigen
IM	intramuscular(ly)
LASIK	laser in situ keratomileusis
mRNA	messenger ribonucleic acid
RNA	ribonucleic acid

ABSTRACT

Abstracts are required for Manuscripts, AAO Meeting Papers, Evidence Based Studies and Translational Science Reviews. Abstracts serve many purposes; one is to draw readers to your manuscript. Another is to allow a summary of your manuscript to be reproduced in a stand-alone format. Manuscripts without the required structured abstract will not be reviewed until the required abstract is received. Please spend extra time to develop a simple, clear and concise abstract. All abbreviations in abstracts must be defined at first use except for those found in Abbreviations.

Abstracts for Manuscripts and AAO Meeting Papers should not exceed 350 words and should be submitted on a separate page in the text. Deletion of any required section of the abstract must be justified in the "Enter Comments" section of the submission process. The following seven sections must appear in your abstract, the author may select the more appropriate heading for each section:

1. Objective or Purpose: concisely states the study goal.

2. Design: identifies the study design using a phrase such as cross-sectional study, clinical trial, evidence based study, etc. Study design types are available in the Study Design Schemes section of this guide. Please select a study design from the choices listed there. Worksheet #1 (modified CONSORT agreement) for randomized controlled trials has been required since 1996 and is available online.
3. Participants and/or Controls: states the number of persons or eyes studied and the number of controls if a separate control group is included. If a single case is being described, the study design section should indicate it as a Case Report, modified by "interventional" or "observational", as appropriate. The Participant section may be deleted for a single case report.
4. Intervention or Methods or Testing: describes the principal treatment(s), procedure(s), test(s), or observation(s) performed.
5. Main Outcome Measures: defines the main parameter(s) being measured (e.g., IOP, vision, ERG, inflammation, etc.)
6. Results: briefly summarizes the principal measurements (data) obtained.
7. Conclusions: states the conclusion(s) derived from the data analysis.

Abstracts for Evidence-based Studies must be limited to 250 words and include the following five sections:

1. Topic: identify the specific clinical problem and therapy to be evaluated.
2. Clinical relevance: characterize the magnitude/importance of the problem/disorder and define the current standard of care.
3. Methods/literature reviewed: describe the sources of peer-reviewed materials utilized and dates of publication.
4. Results: summarize the materials identified and obvious contrasts with prior and current standards of care.
5. Conclusion: summarize the strength of evidence for the recommended therapy or test.

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The Academy's journal, *Ophthalmology*, is eager to receive manuscripts based on Annual Meeting presentations. Although speakers are no longer required to submit a manuscript to the Journal; the Academy and the Journal retain an indefinite legal right of first refusal for the primary manuscript based on any paper or poster presentation (this does not include items presented at subspecialty days). You are encouraged to submit a manuscript to the Journal before, during or after the Annual Meeting. *Be sure to note* on the cover page of the manuscript that it is an Annual Meeting paper or poster. Since the Journal holds a right of first refusal, these manuscripts can only be submitted elsewhere if the Journal declines to accept them or a waiver is granted from the Editor-in-Chief. Documentation that the manuscript has been declined will be in the form of a "rejection" letter or e-mail from the Journal office granting the waiver. For ANY manuscript based on a paper or poster presentation from an Academy Meeting, be sure to select "AAO Meeting Paper" for the document type; DO NOT USE "Manuscript" in these instances.

ACKNOWLEDGMENTS
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The Journal will also acknowledge those who reviewed, discussed, edited scientific content, referred patients, translated references, provided extensive statistical assistance, or provided essential tissue, equipment, or other materials without which the study could not have been completed. (See: Lichter PR. The author wishes to thank [editorial]. Ophthalmology 1988;95:293-4**.)** In such cases written permission from the person being acknowledged is required.

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AUTHORSHIP

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Category 2: drafting the manuscript and or critical revision of the manuscript.
Category 3: statistical analysis, obtaining funding, administrative, technical or material support, or supervision
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1) If an individual is authoring for a group (e.g., a chairman) it should be listed as
Henry A. Fiddle, MD for the Laser ROP Study Group

2) Small study groups (≤ 10 members) can author as the group or they can list writing committee members names "and the XYZ Study Group" as long as all the members actually qualify as authors, otherwise only those that do qualify should be listed and the remainder can be acknowledged if they had significant, but not qualifying for authorship, input. Anyone listed as an author must complete the authorship criteria form and conflict of interest form and submit them to their corresponding author.
Debra L Hanson, MS; Susan y. Chu, PhD; Karen M. Farizo, MD; John W. Ward, MD; ***and*** *the Adult and Adolescent Spectrum of HIV Disease Project Group*

3) Large study groups (>10 members) should not author a paper as an entity. In large groups it is not likely that every single member of the group or network contributed as required by authorship criteria mentioned above. Large study groups should either list the writing committee members as authors and then "for the XYZ Study Group" or list "Writing committee for the XYZ Study Group*" as the author and the names of the writing committee members will be listed at the end of the article with the asterisk. Either way, members of the writing committee must qualify as authors and complete the authorship criteria forms and conflict of interest forms and submit them to their corresponding author.
Debra L Hanson, MS; Susan y. Chu, PhD; Karen M. Farizo, MD; John W. Ward, MD ***for*** *the Adult and Adolescent Spectrum of HIV Disease Project Group*
OR The Writing Group for the DISC Collaborative Research Group OR The DISC Collaborative Research Group Writing Committee**

The first preference is to list the names of the members of the Writing committee and then say for the XYZ group. Alternatively, you can just mention the writing group as a whole with asterisk which further in the text lists names of the writing committee members. Full study group membership can be listed as online appendix.

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CANCER CLASSIFICATIONS

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As of July 1, 2006, the Journal requires reporting of clinical trial registration in all submitted trial-related manuscripts. Human clinical trials beginning enrollment on or after March 1, 2006 should be registered prior to enrollment. Please state in the methods section of the manuscript that this was done and where the registration information is publicly available.

The Editor expects that phase 3 trials will be registered and many phase 2 trials are appropriate to register. Most phase 1 trials need not be registered.

Satisfactory public databases include the NIH's at http://www.clinicaltrials.gov/ and the site from the International Standard Randomized Controlled Trials at http://www.controlled-trials.com/

For additional information, please consult:
Registration of Clinical Trials, Leonard A. Levin; Justin L. Gottlieb; Roy W. Beck; Daniel M. Albert; Thomas J. Liesegang; Creig S. Hoyt; Andrew Dick; Robert Bhisitkul; Andrew P. Schachat, Arch Ophthalmo 2005;123:1263 -4

The International Committee of Medical Journal Editors (ICJME) has information at http://prsinfo.clinicaltrials.gov/icmje.html

Our policies are intended to be very similar to those of The Journal of the American Medical Association (JAMA) and The New England Journal of Medicine (NEJM). The JAMA policy can be viewed at http://jama.ama-assn.org/misc/authors.dtl. The NEJM summarizes their policy in two editorials: Is this Clinical Trial Fully Registered? N Engl J Med 2005;352:2436-8 and Clinical Trial Registration: A Statement from the International Committee of Medical Journal Editors N Engl J Med 2004;351:1250-1

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For further insight, please refer to Liesegang TJ, Schachat AP. Enhanced Reporting of Potential Conflicts of Interest: Rationale and New Form (Editorial). Am J Ophthalmol 2011:151(3): 391-393.

As of January 2012, all submissions must have the ICMJE Conflict of Interest Form completed and uploaded for each author preferably as part of the initial submission process, but absolutely no later than first revision. The form posted on the ICMJE Web site (http://www.icmje.org/coi_disclosure.pdf) and enclosed in our guide as a downloadable form includes instructions to help authors provide the correct information. For nonnative English speakers, there is a glossary of the terms used in the form. Guidelines for translation of the form's instructions into multiple languages is planned, recognizing that some nuances may not be understood or well known in some cultures.[1]

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Every published manuscript will have a blanket statement, inserted by the publisher, within the abstract box.; either "None of the authors have any conflicts of interest to disclose." OR "Authors with financial interests or relationships to disclose are listed after the references." Corresponding authors will be asked to confirm or update conflict of interest statements as part of the final steps of manuscript acceptance with the journal office, prior to transmittal to the publisher.

Ophthalmology will be vigilant in the quest to ensure that the public continues to trust that the medical literature and our authors are not inappropriately influenced by their financial relationships with industry or other prejudices. If allegations arise, the journals must and will react.[2]

1. Drazen JM, de Leeuw PW, Laine C, et al. Toward More Uniform Conflict Disclosures. The Updated ICMJE Conflict of Interest Reporting Form. N Engl J Med 2010;363(2):188-9.

2. DeAngelis CD, Fontanarosa PB. Resolving unreported conflicts of interest. JAMA, 2009;302(2):198-9

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Ophthalmology publishes color photographs and images on the cover of the printed journal. The Cover Page Editor for the journal is James D. Brandt, M.D. of the University of California, Davis.

Our cover pages are usually generated from figures in articles appearing in a given issue, but our criteria are that images considered for the cover be visually striking and technically excellent (and fit on the cover layout). In case there are no appropriate images among the articles slated to appear in a given issue, we then turn to photographs submitted by ophthalmic photographers and

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The device name is permitted in the title, abstract and text. However after the device has been identified at first use in the abstract and text, thereafter refer to it generically. In the case of equipment, include the manufacturer's name, city, state and/or country parenthetically at the first use in the text.

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General: A two-page editorial is usually published in each issue of Ophthalmology. Editorials are generally solicited by the Editor- in-Chief, although unsolicited submissions will also be considered.

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EVIDENCE BASED STUDIES – ADDITIONAL GUIDELINES

The journal is eager to receive evidence-based studies. These papers incorporate a systematic review of the literature and summarize clinical recommendations using the structured format outlined below. Authors interested in submitting these manuscripts are encouraged to correspond with the Editor-in-Chief in advance to be sure that the topic is of interest. The main text of these articles will conclude with summary recommendations for testing or therapy of the clinical problem discussed. Each recommendation will include author-designated and peer reviewed ratings displayed in superscripts (see definitions below) indicating the importance of recommendations to clinical outcome (A, B, C) and the overall strength of evidence of supporting literature (I, II, II I). The strength of evidence ratings will be based on author judgment as to the quality and validity of the existing fund of peer-reviewed or other published literature. Authors and co-author methodologists with special expertise in the topic may be recruited by the Journal Editor to write these summary updates.

Authors will be expected to conduct thorough literature searches (systematic reviews) of national and international peer-reviewed publications utilizing available databases and other sources as necessary. In many topic areas no recent high-quality studies may be available, in which case the discussion should emphasize to clinicians what studies are needed and the inadequacy of the evidence that justifies current management.

Completed articles will be reviewed using the usual Journal peer-review process, including author-assigned ratings for the importance of clinical recommendations and the strength of supporting evidence. Publication may be scheduled, after revisions as indicated through peer-review, and articles will be placed in regular forthcoming issues at the discretion of the Editor-in-Chief.

Definitions of Superscript Ratings:

Superscript ratings for clinical recommendations:

"A" indicates that the recommendation is considered very important or crucial to a good clinical outcome

"B" that the recommendation is considered moderately important to clinical outcome

"C" that the recommendation may be relevant but cannot be definitely related to clinical outcome.

Superscript ratings for peer reviewed or other cited evidence:
"I" indicates strong evidence in support of the statement. In general, the study or studies cited used designs which allowed the issue to be addressed, were performed in the population of interest, were executed in a manner to produce reliable and accurate data, and were analyzed using appropriate statistical methods. The study or studies produced either statistically significant differences between control and experimental groups or showed no statistically significant differences, despite a design, which had high statistical power to detect differences and/or narrow confidence limits on the parameters of interest.

Strong evidence includes well-done randomized controlled clinical trials designed to address the issue in question, especially regarding the efficacy of treatment or the superiority of one treatment over another. Well-done meta-analyses (retrospective reviews of previously published randomized controlled trials) may also constitute level "I" supporting evidence.

"II" indicates there is substantial evidence in support of the statement but the evidence lacks some qualities, thereby preventing its justifying the statement without qualification. Deficiencies might include unavailability of well-done randomized trials, or studies lacking other elements of high-quality evidence such as adequate control groups, sufficiently long follow up, good compliance with therapy, or acceptable loss to follow up.

Nonrandomized comparative trials involving sufficient subjects to demonstrate statistically significant differences between study and control groups might provide strong evidence for the efficacy of a therapy. Noncomparative case series or case reports might be justifiably included as strong evidence for linking complications or adverse events to a specific therapy without stating the probability of their occurrence.

Observational studies, including control groups such as Cohort studies and Case-control studies, might provide strong evidence for or against therapy in terms of longitudinal data about disease natural history, outcome of therapy, adverse events, or specific anatomical or functional outcomes. Well-done cross-sectional studies might provide strong evidence for the importance of the clinical problem. Well-done systematic literature reviews or meta-analyses might also provide moderately strong evidence for or against a test or therapy.

Even an otherwise well-done randomized controlled trial dealing with the issue of interest might have been performed using too select a population and may not be clearly applicable to a broader population of interest, or it might have produced only marginally statistically significant differences between control and experimental groups. A large consecutive case series might also fit in to this category if it compares outcome only to a historical control group from the same clinical setting.

"III" indicates a weak body of evidence insufficient to provide support for or against the efficacy of a test or therapy and would generally apply to panel consensus or individual opinions, small noncomparative case series, and individual case reports. Non-comparative studies (without controls), cohort studies with variable follow up across the patient population studied, retrospective chart reviews with missing data, or even randomized controlled trials evaluating highly subjective outcome data would be examples of weak forms of evidence.

Authors of evidence-based manuscripts should follow the guidelines outlined in the Instructions for authors unless specifically stated below:

Title Page - The title should clearly describe the main topic and indicate the manuscript is an evidence-based summary. (Example: Management of nonsymptomatic retinal tears and lattice degeneration: an evidence-based summary.) The title should include the phrase: evidence-based review or evidence-based update.

Précis - The précis should indicate what new insight the article offers or what principal controversy persists.

Structured Abstract Abstracts for evidence-based manuscripts must be limited to 250 words and include the following five sections:
1. Topic: identify the specific clinical problem and therapy to be evaluated.
2. Clinical relevance: characterize the magnitude/importance of the problem/disorder and define the current standard of care.
3. Methods/literature reviewed: describe the sources of peer-reviewed materials utilized and dates of publication.
4. Results: summarize the materials identified and obvious contrasts with prior and current standards of care.
5. Conclusion: summarize the strength of evidence for the recommended therapy or test.

Text - The text should utilize standard Journal formatting as described in *Ophthalmology's* Instructions for Authors and be divided into five distinct sections:

1. The introduction/background (unlabeled) should clarify the magnitude of the clinical problem, (prevalence or incidence) and provide perspectives on the importance of its management to patient well-being and quality of life.

2. The Sources and Methods of Literature Search (titled) should identify the databases and/or specific journals searched and the dates of publication. The methodology of the literature search, including criteria utilized for selection and inclusion, should be listed insufficient detail to permit duplication of the effort. If only poor quality supporting evidence exists, author comments should emphasize this in the discussion, in addition to assigning appropriate overall ratings for the strength of supporting literature.

> Suggested sources for literature searches include, for example, PubMed (http://www.pubmed.com) and Medical Matrix (http://www. medmatrix.org).
>
> The Cochrane Library is an additional excellent source of high quality reviews of general medical information, systematic reviews, and meta-analyses, including some eye topics (http://www.cochranelibrary.com).

3. Summary of Evidence (titled) should summarize the findings in text or tables.

4. The Clinical Recommendation(s) (titled) should be listed in order of importance, and each separate recommendation accompanied by bracketed superscripts "A,""B," or "C," indicating the author's impression as to its importance to clinical outcome. Superscripts "I,""II," or "III" will also be used to indicate the author's judgment about the overall (average) veracity of supporting literature. When appropriate, recommendations should include typical clinical scenarios. (Example of clinical recommendation and author-designated superscripts: A symptomatic superior horseshoe retinal tear with a cuff of surrounding subretinal fluid should be promptly encircled by several rows of laser burns. [A, I]). Please indicate appropriate

crosschecking with AAO products (PPPs, Pro-Vision Series, Focal Points, Basic and Clinical Science Course Books) to avoid or acknowledge inconsistencies in clinical recommendations.

5. References should be limited to the highest quality studies available, regardless of the study type. One set of complete copies of all cited references should be included. Duplicates will be sent to peer reviewers upon request. For reference formatting examples, please go to References and Reference Style Guide

FIGURES (illustrations, graphs, photos for all submission item types)
Whether submitting individual images or a composite, please note the artwork guidelines that follow. Figures will be included in the final PDF but the figure file names will not be visible to reviewers. Figures, that are not a composite, should be loaded to individual files and clearly identified. For all figures the figure number must be entered in the file description field before the figure is uploaded. This can be done on the "attach files page" by choosing "figure" in the pull down menu. Below it there is the “Description” box; enter the figure number to the right of the word "Figure" before opening and attaching each figure file. Do not enter legends here, just the figure number. For linear art created by MSOffice or similar type software, the figure number should also be typed on the figure page.

The Journal may provide one page of color illustrations per calendar year for each first author without charge, at the discretion of the Editor-in-Chief. The criterion generally used is whether the color illustration best conveys the information being illustrated. Additional color pages may be published at the author’s expense. Formatting requirements may lead to illustration placement on more than one page, although we try to avoid this as much as possible. The cost varies from $650 to $1200 per additional page and you will be advised of the cost when you receive your proofs.

If a manuscript has been reviewed and accepted with color photos, it must be published with color photos. The author is responsible for page charges for color photos that occupy more than one page, and cannot opt to have them printed in black and white without the permission of the journal office. Please check with the Journal office or the publisher for information.

Clinical photographs (including those generated electronically from machines such as MRIs, fluorescein angiography, visual fields, etc.) must be masked to prevent identification of the patient. Clinical photographs that permit identification of an individual (those exposing anything more than just the eyes) must be accompanied by a signed statement by the patient or guardian granting permission for publication of the pictures for educational purposes. All graphics, including composites (such as clinical photographs, fluorescein angiography, CT, MRI, x-ray, photomicrographs, etc.) should be submitted at the actual size that they would be presented in the journal, 100 % of their print dimensions so that no scaling is necessary, but remember that very few pictures are full page pictures. The width should be no more than 7 inches.

The publisher will not re-draw or rework your photographs or illustrations. Submit all figures in the order they appear in the legends. If there are six or more color pictures, a composite maybe preferred so they fit on a standard journal page and potentially decrease your color figure costs. However, be sure to do this only if the quality of what you are attempting to portray with the figures is not compromised. The completed composite must meet the guidelines for artwork submission. Composites must also be labeled using typed text in a corner of the each image. Composite are encouraged for multipanel figures (e.g., Fig 1A, 1B, 1C, 1D, 1E).

	BLACK & WHITE LINE ART*	COLOR LINE ART*	LINE ART/PHOTO COMBINATION	BLACK & WHITE PHOTO	COLOR PHOTO
TIFF	YES YES		YES	YES	YES
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PDF FILE	YES YES		NO	NO	NO
COL OR MODE IN PHOTOSHOP	BITMAP RGB			GRAYSCALE	RGB
RESOLUTION (PIXELS/INCH)	150 300**		600 (will be large file size)	300 300	
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***** Line art can be submitted in the original file format that it was created (e.g., Word, Excel, PowerPoint, etc.)
****** If very little or no text – otherwise, print to a PDF

General

- The physical dimensions of any artwork must fit within the dimensions of the pages within the Journal. (i.e., width no more than 7 inches)
- Be consistent in the font type and size used in the artwork.
- Artwork must use recomm ended nam ing conventions. Som e exa mples include fig1.tif (figure 1 in TIFF format). Always ensure that the file extension is present to ensure quick and easy format identification.

We have upgraded our electronic submission system. You may now choose to load each figure file individually or to take all the individual figures files and zip them into a single zip file, which will reduce the size of your upload (and hence the time) it takes to upload your files and complete your submission. This does not mean you can load everything in one file – each piece needs to be in a separate file and those individual files can then be zipped and uploaded. The system will unzip them for you.

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Identify all funding sources, public and private. On the title page please state "Financial Support: None" or provide the agency name and city, company name and city, fellowship name, and grant number. If there is financial support, please provide also one of the two following statements: "The sponsor or funding organization had no role in the design or conduct of this research."
OR "The sponsor or funding organization participated in (list those that are appropriate: the design of the study, conducting the study, data collection, data management, data analysis, interpretation of the data, preparation, review or approval) of the manuscript."

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As of September 1, 2007, manuscripts are automatically available on line as "in press" articles after completing the proofing process. This early online release is not a draft version since it is

produced after all editorial and author corrections are made; however there is a disclaimer in case a critical error is found. No routine editing will occur once this is online. The “in press" version is not meant to be a last editing opportunity for authors, however if a major, critical error is found we may be able to make corrections prior to publication or an erratum will be published in a future issue. This "in press" version is removed as soon as the monthly issue is available online.

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INSTITUTIONAL REVIEW BOARD/ETHICS COMMITTEE APPROVAL (IRB)

If the study being reported involved human subjects, human derived materials, or human medical records, please include one of the two following statements in the Materials/ Patients and Methods section: Institutional Review Board (IRB)/Ethics Committee approval was obtained OR IRB/Ethics Committee ruled that approval was not required for this study.

LEGENDS

Figure legends (photos, drawings, graphs) should follow figures. Figures must be numbered consecutively as they appear in text. Histological figures, stains and magnifications should be noted in the legends. Any figure that has been published elsewhere should have an acknowledgment to the original source; a copy of the release to publish the figure, signed by the copyright holder, must also be submitted. Legends must identify all symbols, abbreviations, acronyms or letters that appear on the prints. Table legends should be within the table. All abbreviations in each table must be defined even when repetitive to each other.

LETTERS TO THE EDITOR AND ASSOCIATED REPLIES

General: Letters to the Editor should be concise comments focusing on an article published in the Journal within the last six months. The letter should offer alternative perspective, elucidate a flaw in methodology or a perceived misinterpretation of data, addressing no more than two major points. The letters should start with “Dear Editor” and the article being commented on should be referenced in the first paragraph of the letter. Gratuitous comments such as “… I commend the author for their fine study” or overly critical remarks are not necessary or appropriate. Letters should end with the name, degree and location(city, state or city, country) for each author. For example Andrew P. Schachat, MD, Cleveland, Ohio.

Format: Letters should be limited to 700 words, double-spaced and no more than five references. Please note that letters do not have tables or figures published but they are put up as online only supplemental material. The figures or tables will not appear in the printed version but will be archived with the online version on the publisher's website www.ophsource.com/periodicals/ophtha and accessible through Medline and other online databases. Therefore, in the appropriate location where you mention your table, graph, figure or chart please insert "(available at http://aaojournal.org).” Although figures (photos, charts, graphs, tables) are not included in publication, the online version needs to conform to the same requirements regarding legends and identifying all abbreviations in each figure.

Submission: The text of the letter, a signed copyright(s) and ICMJE conflict of interest form(s) need to be submitted. These should be uploaded into the system with your initial submission. You can add information you wish the editor to know in the “enter comments”

section of the submission process. The title should be limited to 40 characters.

Process: Upon receipt, a letter to the editor is reviewed by the Editor in Chief, and, in some instances, by outside reviewers. If the letter is to be accepted for publication, it is forwarded to the corresponding author of the article which it addresses for the opportunity to respond. If the invitation is accepted, both letter and reply are edited and reference checked and published together. If the invitation to reply is declined the original letter will be processed and published by itself. The titles of all letters are limited to 40 characters. If needed, the Editor will create titles to fit this limit.

When the journal office receives a Letter to the Editor addressing an article, the corresponding author of the article being discussed usually will receive an email entitled "Invitation to Reply to a Letter to Editor". It is imperative that you log onto the system as an author and accept this invite immediately and then upload and submit your reply letter within 21 days to the Editorial Office.

Occasionally, you may be told by the Editorial Office that a manuscript is rejected but the option to reformat and resubmit it as a letter is suggested. This can only be done at the Editor's discretion. If you decide to reformat your paper as a letter, you should send it as a new, separate submission. In these scenarios only, WHEN UPLOADING, USE THE "MS TO LTR" SELECTION AS THE TYPE OF SUBMISSION. Also be sure in the "Additional Comments" section to advise us of the manuscript number of this original paper you are reformatting so we can make reference to it if necessary. All other Letter to the Editor guidelines (700 words, double-spaced, etc) apply including the need for a copyright and ICMJE conflict of interest forms to be uploaded.

LITERATURE REVIEWS

Literature reviews have great teaching value, but the focus of Ophthalmology is on "new" material. Reviewing the past literature tends not to add "new" information to the current literature. But, if you incorporate new knowledge into the review by aggregating past information to create new knowledge, such reviews are considered. For example, a metanalysis combines old data in a way that teaches new knowledge. Better literature reviews tend to be highly structured with inclusion and exclusion criteria for which papers will be included and they involve more than, e.g., "we searched PubMed on 'cataract'." There is excellent information on metanalyses and structured and methodical literature reviews available at the Cochrane Collaboration website (cochrane.org). In addition, the Journal will consider and may accept so called "evidence-based" reviews. There are detailed instructions in this Guide for "evidence based studies – additional guidelines."

MANUSCRIPT TEXT FORMAT

Double space the entire manuscript after the title page. Line numbering will be automatically inserted into your manuscript text file by the system when it builds the PDF. The average published manuscript in Ophthalmology, including references, is up to printed 6 pages in length. This corresponds, depending on font size and printing, to between 16-20 pages of double-spaced draft.

1. Title Page

The title page should include the following information.

a) Title: The title should be meaningful and as brief as possible. No longer than 135 characters, including spaces. Declarative titles should not be used. Do not use abbreviation in titles other than

those approved in Abbreviations. Please do not include any lecture titles or award titles in the manuscript title. Recognition of such can be made with an asterisk at the end of the title and the award/lecture noted in the footnotes.

b) Authors: Provide first name, middle initial, last name and no more than two advanced degrees or professional certifications. The Journal does not print society affiliations. Also indicate each author's affiliation during the course of the study in footnotes on the title page using superscript numbers, not symbols (e.g., Ronald Smith[1]). Specifically identify the corresponding author.

Please carefully review the very extensive "Authorship" section of this guide. It carefully addresses authorship criteria, group/writing committee authorship, guest authors, ghost authors, corresponding authors and related responsibilities, numbers of authors, and entering authors into the system.

c) Meeting Presentation: If the material is under consideration for presentation or has been previously presented, supply the name, place, and date of the meeting. (e.g., the American Academy of Ophthalmology Annual Meeting, November, 2003). This is especially important for AAO Meeting papers as we have first right of refusal on these papers.

d) Financial Support: - Identify all sources, public and private. On the title page please state "Financial Support: None" or Provide the agency name and city, company name and city, fellowship name, and grant number. If there is financial support, please provide also one of the two following statements: "The sponsor or funding organization had no role in the design or conduct of this research."

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"The sponsor or funding organization participated in (list those that are appropriate: the design of the study, conducting the study, data collection, data management, data analysis, interpretation of the data, preparation, review or approval of) the manuscript."

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f) Running head: The running head, also known as the short title, which appears on the top of each right hand published page of your manuscript, should be no longer than 60 characters.

g) Address for reprints

2. <u>Abstract</u> – see separate "Abstract" section

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a. Introduction: Without a heading, the introduction should refer only to the most pertinent past publications and should not be an extensive review of the literature.

b. Intervention or Methods or Testing: This section should be written with sufficient detail to permit others to duplicate the work. Also required are the following, as appropriate within the methods section:

FOR HUMAN SUBJECTS:

- Informed Consent - Manuscripts reporting the results of experimental investigation on human subjects must include a statement to the effect that informed consent was obtained.
- HIPAA - For studies conducted in the United States a statement that the work is HIPAA-compliant is required (See Ophthalmology 2003; 110:1074-5.)
- IRB/Ethics Committee - Human subjects/materials/medical records - If the study being reported involved human subjects, human derived materials, or human medical records, please include one of the two following statements in the Materials/ Patients and Methods section:

Institutional Review Board (IRB)/Ethics Committee approval was obtained
OR
IRB/Ethics Committee ruled that approval was not required for this study.

- Declaration of Helsinki - A statement is required that described research adhered to the tenets of the Declaration of Helsinki
- Clinical Trial Registration – A statement should be provided in the methods section of the manuscript that this was done and where the registration information is publicly available. (see Clinical Trial Registration for more detailed information)
- We encourage authors to use the American Joint Commission on Cancer TNM Classification scheme when describing patients with ophthalmic malignancies (American Joint commission on Cancer. AJCC Cancer Staging Manual. 7th ed. New York, NY: Springer; 2009.) This classification scheme can also be found at http://www.cancerstaging.org/mission/whatis.html

FOR ANIMAL SUBJECTS:

If animals were used in a study, the notice of approval by the appropriate Institutional Animal Care and Use Committee should be included in the methods section of the manuscript.

c. Results: Results must be concise.

d. Discussion: The discussion should be restricted to the significant findings presented. Digressions and theorizing are not appropriate. NOTE: Discussion is the final section of a manuscript. Please do not insert a conclusion section; only the abstract has a conclusion section.

ONLINE ONLY PUBLICATIONS

Some manuscripts are not accepted due to lack of space rather than lack of science and in some cases an author may be given an option of having their entire manuscript printed "online only." If the Editor deems it appropriate, you will be given the option of having your manuscript published online only. There will be no printed version of this manuscript BUT it will appear in the table of contents under a new section called "Online Only Publications"[1] and it shall be citable just like any other online resource. We are told that Pub Med and other similar databases will pick it up as an online citation. Submission guidelines are the same as they would be for acceptance in the print edition. Color figures in an online only publication will be at no cost to the author.

ONLINE SUPPLEMENTAL MATERIALS

Space in Ophthalmology is highly competitive and sometimes good manuscripts or data cannot be published due to space limitations. For articles that ARE ACCEPTED for publication in the journal but whose authors have agreed to cut back on the amount of material provided due to space considerations, we now offer online only supplements to printed articles. Such supplements will generally include tables, charts, figures, etc. that would further enhance a published article but for which there is insufficient room in a given issue to print it. The availability of this additional information will be noted in the Table of Contents by an icon. The information will not appear in the printed version but will be archived with the online version on the publisher's website http://www.ophsource.com/periodicals/ophtha and accessible through Medline and other online databases. In the printed manuscript, on the cover page and in the appropriate, corresponding section of your text, there will be a notation that "Supplemental materials are provided at the end of the online version of this manuscript".

If you opt for an online supplement, add a reference to it in parenthesis after the mention of the information to appear online: For example, "…as shown in Table N (available at http://aaojournal.org)." Online tables or figures should be numbered consecutively as they appear in the text, in the same sequence as printed figures or tables. Also, add a statement to the title page that should read similar to: "This article contains additional online-only material. The following should appear online-only: Figures X, Y, Z and Table N." The materials will not appear in the printed version but will be archived with the online version on the publisher's website http://www.ophsource.com/periodicals/ophtha and accessible through Medline and other online databases.
In some cases, when the Editor decides there are too many figures, tables or other supplemental information (e.g. study group listings) to publish in print, an author may be given the option of providing a PDF of the item(s) for online only release versus removing them completely from the submission.. These are not proofed or edited in any way by the publisher thus eliminating cost and not counting to a limited budget of online only supplemental pages. These figures need to have their legends included in the figure file along with the figure number.

All supplemental materials must follow the same rules and regulations as if they were to appear in print. For example, tables must be able to stand alone with all abbreviations, references, etc. identified. Table legends would include definitions for the abbreviations, if any. Color figures that might appear online only are at no cost to the author.

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PRÉCIS

All manuscripts must include a précis of 35 words or less summarizing the main finding/outcome of the study. The précis should not duplicate the abstract conclusion. Please respect the 35-word limit as formatting requirements lead to strict application of the word limit. If the paper is published, the précis will appear under the title in the Table of Contents. The précis is submitted as a separate file and should not be included the manuscript file. Try not to use abbreviations/acronyms in the précis so that the words are not used up in defining them; remember the précis has a 35 word limit.

PRIOR AND REPETITIVE PUBLICATION:

The Journal will not consider manuscripts that have appeared, in part or in total, in other publications, except in special circumstances approved by the Editor-in-Chief. Likewise, updates of previously published studies that add little data to an existing publication will not be considered. Overlap between patient groups described in serial manuscripts must be acknowledged, and references to previous publications that include the same patients must be provided. Authors uncertain as to whether or not specific data represent prior or repetitive publication should alert the Editor-in-Chief in the author/additional comments section of the submission process and reference copies of the publications in question.

PRECEDENCE

Authors who claim precedence for an idea, observation, or therapy are well advised to review existing literature thoroughly and also to include an appropriate disclaimer on the cover page of the manuscript --"We were unable to find any previous report of this in the literature" or "As far as we are aware, this has not been previously reported." Some widely read journals might not currently be included in databases, such as that of the National Library of Medicine.

REFERENCES

Our manuscripts are not intended to be review articles nor do we expect encyclopedic referencing. In keeping with our overall preference for clarity, simplicity and brevity, please limit the number of references. Most papers can be adequately referenced with up to 20 to 30 citations. Some need 40 or 50; **please justify in your cover letter if you find it necessary to offer more than 50.** This limitation does not apply to Evidence Based Study submissions.

If you use automated reference numbering software or bibliography software, **turn it off before submitting the manuscript.**

1. References section should follow text and begin on a separate page.
2. Unpublished data, submitted articles, abstracts oral or poster presentations should be noted in parentheses within the text
3. They should be double-spaced and numbered consecutively in order of appearance in the text.
4. In text, designate references by superscript numbers following all punctuation (except semicolons).
5. If there are 4 or fewer authors, all authors should be listed. If there are more than 4 authors, list the first three and then "et al".
6. Journal abbreviations should conform to those used by the National Library of Medicine (http://www.nlm.nih.gov/tsd/serials/lji.html). If in doubt as to the correct abbreviation, cite the complete journal name.
7. Include subtitles (Title: subtitle.)
8. Use volume numbers. Do not use issue numbers or months unless pagination is not consecutive throughout a year. Add (suppl) if supplement.
9. Delete digits when in the same range: 231-7 or 1800-27 (NOT 231-237; 1800-1827)
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JOURNAL ARTICLES

Journal:
Davis JT, Allen HD, Powers JD, et al. Population requirements for capitation planning in pediatric cardiac surgery. Arch Pediatr Adolesc Med 1996;150:257-9.

With no volume #:
Taulbee P. Maryland Quality Project puts new focus on processes of care. Rep Med Guideline Outcomes Res. June 1994;10-1.

Supplements:
Davis JT, Allen HD, Powers JD, et al. Population requirements for capitation planning in pediatric cardiac surgery. Arch Pediatr Adolesc Med 1996;150(suppl):257-9.

In Press (accepted by a journal):
Davis JT, Allen HD, Powers JD, et al. Population requirements for capitation planning in pediatric cardiac surgery. Arch Pediatr Adolesc Med. In press.

A discussion:
Allo MD. In discussion of: McKindley DS, Antibiotic pharmacokinectics following fluid resuscitation from traumatic shock. Arch Surg 1994;272:1825-31.

Foreign titles:
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Kolmos HJ. Antibiotika i almen praksis [Antibiotics in general practice]. Ugeskr Laeger. 1996;158:258-60.

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Journal available only online:
Hussain N, Clive J, Bhandari V. Current incidence of retinopathy of prematurity, 1989-1997. Pediatrics [serial online] 1999;104:e26. Available at http://www.pediatrics.org/cgi/content/full/104/3/e26. Accessed July 12, 2002.

Letter:
Davis JT, Allen HD, Powers JD, et al. Population requirements for capitation planning in pediatric cardiac surgery [letter]. Arch Pediatr Adolesc Med 1996;150:257-9.

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Crist WM, Garnsey L, Beltangady MS, the Intergroup Rhabdomyosarcoma Committee. Prognosis in children with rhabdomyosarcoma: a report of the intergroup rhabdomyosarcoma studies I and II. J Clin Oncol 1990;8:443-52.

No authors listed other than the study group:
Fluorouracil Filtering Surgery Study Group. Fluorouracil filtering surgery study: one-year follow-up. Am J Ophthalmol 1990;109:613-6.

BOOKS

Book:
Miller NR. Walsh and Hoyts Clinical Neuro-Ophthalmology. Baltimore, MD: Williams & Wilkins; 1991:xx-xx. (include specific inclusive pagination for material being referenced)

Article or chapter in book:
Hollis S, Rozakis GW. Complications, special cases and management. In: Rozakis GW, ed. Refractive Lamellar Keratoplasty. Thorofare, NJ: SLACK Inc.; 1994:111-22.

Edited book:
Letheridge S, Cannon CR, eds. Bilingual Education: Teaching English as a Second Language. Vol. 1. 3rd ed. New York: Praeger; 1980:xx-xx.

Article in edited book, reprint from another source:
Sluzki CE, Beavin J. Symmetry and complementarity. In: Watzlawick P, Weakland JH, eds. The Interactional View. New York: Norton; 1977:711-30. Reprint from: Acta Psiquiatr Psicol Am Lat 1965;11:321-30.

Proceedings published as a book:
Chaddock TE. Gastric emptying of a nutritionally balanced liquid diet. In: Daniel EE, ed. Proceedings of the Fourth International Symposium on Gastrointestinal Motility. Ames, IA: Mitchell Press; 1974:83-92.

Book without authors or editors:

College Bound Seniors. Princeton, NJ: College Board Publications; 1979:xx-xx.

Several volumes in a multi-volume edited work:
Wilson JG, Fraser FC, eds. Handbook of Teratology. Vol. 1-4. New York: Plenum Press; 1977-88.

English translation of a book:
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Health Care Financing Administration. 1996 statistics at a glance. Available at: http://www.hcfa.gov/stats/stathili.htm. Accessed December 2, 1996.

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Software Manual cite in references: Dean AG, Jean JA. Epi Info, Version 6: A Word-processing Database. Atlanta, GA: Centers for Disease Control and Prevention; 1994:xx-xx.

GOVERNMENT DOCUMENTS

Klein R, Klein BE. Beaver Dam Eye Study. Manual of Operations (Revised). Report for 16 Jun 87 - 31 May 92. Springfield, VA: US Dept of Commerce; 1991:xx-xx. NTIS Publication PB91-149823.

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Comparing previous exposure(s) between a group of patients with a given disease or outcome and a group without the given disease or outcome?	*CASE-CONTROL STUDY	
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Consort Agreement is mandatory for a Randomized Controlled Trial
Cover Art Copyright Form

D. MISCELLANEOUS INFORMATION

1. Developing a Manuscript

Authors are well advised to plan for eventual publication early in the conduct of their research, including the choice of journal and the order of authorship. The most current Guide/Instructions for Authors for the intended journal should be obtained and read carefully in preparation for eventual manuscript submission. The order of authorship, assuming more than one individual is involved, should be established by mutual consent early in the manuscript preparation process to avoid subsequent conflicts. In rare instances, authors ask for changes in authorship after submission and do not agree themselves what they want. In such cases, the Editor will withdraw the manuscript from consideration and allow the authors to resubmit once they agree, with new and correct copyright transfer forms. For *Ophthalmology*, a listing as an author implies a substantial intellectual contribution to the conduct of research and preparation of the manuscript (see Guide for Authors regarding authorship, group authorship, and acknowledgments).

Clinical or basic science investigations must be designed (planned) properly and executed rigorously to permit meaningful analysis of resulting data. Appropriate study design experts, biostatisticians, or other advisors as indicated should be incorporated in both the initial planning and/or the authorship for all research publications.

It is strongly recommended that you plan the research, obtain appropriate IRB and or regulatory approval, do the research and then write the manuscript. In other words, prospective research is favored.

A. *Ophthalmology's* Study Design Scheme

As part of the Structured Abstract, authors are required to describe the design of their study. The specific designation of a "study design" serves several purposes. It forces authors to give careful thought to what they have actually done, it provides an important shortcut for editors and reviewers to use in categorizing the submission, and it provides the busy reader with a useful capsule of the type of study that was performed.

The worksheet (modified CONSORT agreement) for randomized controlled trials has been required since 1996 and is available online. The chart below provides basic information regarding the direction we are heading with the new designs.

STUDY	DESIGN	OPTIONAL MODIFIERS
Reporting observation on a single patient?	CASE REPORT	
Reporting observations on multiple patients, with similar findings, or treated in a similar way, but without a comparison group?	CASE SERIES	
Comparing observations or results on similar patients who have been treated in more than one way? Comparing a treated and untreated group?	COMPARATIVE CASE SERIES	

Comparing previous exposure(s) between a group of patients with a given disease or outcome and a group without the given disease or outcome?	*CASE-CONTROL STUDY	
Determining the prevalence of a symptom, sign, or disease in a group of individuals or examining associations between factors at one point in time?	CROSS-SECTIONAL STUDY	Clinic-based, hospital-based, community-based, population-based
Reporting on a group of individuals with defined characteristics before developing a condition or undergoing a procedure, and then observing them over time for the appearance of a disease or surgical result or complication.	COHORT STUDY	
Reporting the results of a clinical experiment that you have registered with clinicaltrials.gov or a similar database, in which defined groups of subjects receive different treatments, placebo, or no treatment?	CLINICAL TRIAL	Randomized, non-randomized, masked, multicenter
Evaluating a diagnostic test or comparing more than one diagnostic test?	EVALUATION OF DIAGNOSTIC TEST OR TECHNOLOGY	
Developing a questionnaire or interviewing instrument?	QUESTIONNAIRE DEVELOPMENT	
No human subjects studied (only tissue, biopsies, and animals)?	EXPERIMENTAL STUDY	
Reporting the available data addressing a specific clinical question?	EVIDENCE-BASED MANUSCRIPT	Systematic review, meta-analysis
Reporting on a phase 4 open-label study, a registry or surveillance system, or an administrative database?	DATABASE STUDY	

*Case-control study design must meet these criteria. If you have simply compared a group of cases and selected a control group, the design is most likely "Comparative case series".

B. Literature Review

A thorough review of available literature with appropriate data bases (Index Medicus, PubMed, MEDLINE, Cochrane Central Register (Cochrane Library), EMBASE, LILACS, etc.) is mandatory during the planning phases of a research project to avoid unnecessary duplication of effort and errors in acknowledging credit due others. When you allude to your interpretation of the previous literature, e.g., "we report the first case of …" in the methods section or discussion section be sure to explain the depth and breadth of your search strategy – where you searched, on what search terms,

when the search was undertaken, and whether any more than a basic computer search was conducted. Non-English literature should be included with help from library resources as necessary. *Ophthalmology* requests that authors include only essential references that relate directly to the work being reported and that they verify their accuracy. Refer to references for formatting of various types of references.

To expedite processing, if you are asked to revise your manuscript, you will also be asked to provide a photocopy of the title page (that include publication information—journal name, vol. year, page numbers) of any work cited that was published prior to 1970 in the United States. You will also be asked to submit the title page for all work cited that was published outside of the United States regardless of year. Also include for any books referenced, the book's copyright page and the first page of any chapters referenced. Although not required upon first submission, it is strongly suggested that you make copies of these items during the researching of your manuscript so they are readily available if needed.

C. Organizing Research Data

The Study Design should be defined clearly before data collection is carried out with pre-designed forms/methodology to enable proper preservation and eventual analysis of data collected, regardless of whether data collection is retrospective or prospective.

D. Epidemiological and Statistical Considerations

Definitions of relevant terms are provided in the Glossary of Terms.

Generally, statistical tests should be applied appropriately with consideration for potentially confounding variables. P-value and/or confidence intervals should be provided as appropriate.

Two key questions should be answered prior to submission of the manuscript:

1. Is the information adequate to permit interpretation of the results?
2. Are the conclusions justified?

Cautionary notes about terminology:

1. Ensure proper use of "procedures" vs. "eyes" vs. "patients" vs. "subjects".
2. Clarify whether or not the "last" follow-up information or a summary of "interval" information is presented. Interval follow up is preferred. (DiLoreto DA Jr, Bressler NM, Bressler SB, Schachat AP. Use of best and final visual acuity outcomes in ophthalmological research. Arch Ophthalmol. 2003;121:1586-90.)
3. Univariate and multivariate analyses are frequently misused in current literature. Their appropriateness should be verified by expert consultation as necessary.
4. P-values are frequently misused.
5. "Incidence" describes new cases over some interval of time
6. "Prevalence" describes cases at one defined interval in time.
7. Remember to distinguish accurately between "standards" and "standardized" and "computed" and "computerized"
8. The terms "safety" and "efficacy" are hackneyed and often misused. Please review a pertinent editorial on this: Schachat AP, Chambers WA, Liesegang TJ, Albert DA. Safe

and Effective. Ophthalmology.2003;110-2073-4.

2. EQUIVALENT VISUAL ACUITY CONVERSION CHART

The *Journal* publishes articles from around the world, where standards for measuring visual acuity vary. This table will help readers interpret visual acuity findings in familiar units.

Table of Equivalent Visual Acuity Measurements

Snellen Visual Acuity				
4 Meters	6 Meters	20 Feet	Decimal Fraction	LogMAR
4/40	6/60	20/200	0.10	+1.0
4/32	6/48	20/160	0.125	+0.9
4/25	6/38	20/125	0.16	+0.8
4/20	6/30	20/100	0.20	+0.7
4/16	6/24	20/80	0.25	+0.6
4/12.6	6/20	20/63	0.32	+0.5
4/10	6/15	20/50	0.40	+0.4
4/8	6/12	20/40	0.50	+0.3
4/6.3	6/10	20/32	0.63	+0.2
4/5	6/7.5	20/25	0.80	+0.1
4/4	6/6	20/20	1.00	0.0
4/3.2	6/5	20/16	1.25	-0.1
4/2.5	6/3.75	20/12.5	1.60	-0.2
4/2	6/3	20/10	2.00	-0.3

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3. GLOSSARY OF TERMS

- **adverse event** Complication of therapy or disease occurring during a study.
- **analysis** Comparison of study and control groups or examination of outcomes in non-controlled studies. Assessment of data, including primary and secondary comparisons of interest.
- **assignment** Designation of individuals as study or control subjects.
- **assessment** Determination of the results of the investigation.
- **bias** A non-chance event arising from faults in study design or measurement or data collection. Bias may prejudice results in that traditional statistical analysis may be precluded or unreliable. Bias may be introduced into a study by many factors including subject selection, follow-up, study factor choice, unmasked data collection, temporal trends in disease, co-management of disease if not concurrent in time, ecological fallacy, retrieval methods, play of chance, publication choice or prejudice of investigators.
- **case-control study** An observational (non-interventional, usually retrospective) study that begins by identifying individuals with a disease (cases) for comparison to individuals without a disease (controls or reference group), in which analysis proceeds from effect to cause.

- **case series** Case series include those studies describing more than one consecutive or non-consecutive case, studied retrospectively or prospectively, usually with regard to the outcome of an intervention for its efficacy, safety, and complications. Non-comparative case series generally have no control group included but outcome may be compared to that in the literature.

- **case report** Usually a retrospective report of a single interventional or observational case experience, often with clinical-pathological correlation.

- **clinic-based** Term used to define the population studied derived from a single clinic population or set of populations

- **cohort** A group of individuals (subjects) who share a common experience or condition.

- **cohort study** An observational (usually prospective) study that begins by identifying individuals with (study group) and without (control group) a factor being investigated to observe over time with regard to disease outcome; study and control groups may be concurrent or non-concurrent but must be derived from the same well defined cohort; almost always prospective with regard to data collection. Almost always longitudinal in that a particular group of patients is followed forward from a point in time. May or may not be population-based.

- **comparative study** Study including two or more defined groups, compared one to another, to make a judgment about the influence of some factor or treatment.

- **confounding variables** Risk factors that may affect the relationship between a risk factor and an outcome.

- **control group** Reference group or group of individuals similar to treatment group except for exposure to study intervention.

- **crossover design** This type of study compares two or more treatments or interventions in which the subjects or patients, upon completion of one therapy, are switched to the alternative(s).

- **cross-sectional study** An observational study that identifies individuals with and without the condition or exposure being studied at the same time (synonymous with prevalence study). May or may not be population-based.

- **double-masked study** At the times of data collection and analysis, neither evaluators nor subjects know which intervention or test is applied.

- **ecological fallacy** This term applies to summary data which misrepresent a relationship within a larger group. Risk cannot be inferred for an individual based on group results.

- **epidemiology study** Prospective or retrospective observational investigation of disease or characteristics; ideally according to pre-determined protocol; includes prevalence, incidence, and cross-sectional studies.

- **experimental study** No human subjects involved.

- **extrapolation** Drawing conclusions about the meaning of the study for individuals or situations not included in the study.

- **external validity** A study's conclusions may be valid only for a specified external population; (how general are the findings?).

- **frequency** The number of occurrences of an event or the proportion of members of a population or statistical sample falling into a particular class; the number of occurrences of a periodic or recurrent process per unit time or per sample.

- **genetic terminology** Terminology used in genetics manuscripts should conform to Human Gene Nomenclature (HGNC) Guidelines. Please visit the HGNC website for the most current draft version of the guidelines http://www.gene.ucl.ac.uk/nomenclature. Do not submit scrambled pedigrees. If a scrambled pedigree is required, please correspond with the Editor-in-Chief at the time of manuscript submission for a waiver of this policy. Base sequences, such as for PCR primers, should not be included in the text of a manuscript. Authors may opt for an online supplement or provide a URL where the primers can be found or an email address for interested readers. Human or animal tissue examination employing traditional morphologic methods including light, scanning, and transmission electron microscopy.

- **historical controls** A collection of patients used as a comparison group, who were identified and treated or observed in the past in a period that predates the time covered by other study groups.

- **historical manuscript** A manuscript describing prior events, usually in chronological order, or the history of individuals or organizations.

- **incidence** The rate of event or disease occurrence in those at risk in a defined population per unit time.

- internal validity The observed differences between index and comparison groups are attributable to the independent variables under study.

- **interpretation** Drawing conclusions about the meaning of similarities and differences found between study and control groups or between studies.

- **intervention** Manipulation(s), treatment(s), test(s), or observation(s) employed to generate data for purposes of achieving the study goals.

- **interventional study** A study that includes an attempt to alter the course of disease by medical or surgical or other therapy.

- **matched controls** Subjects who have specific characteristics similar to cases (study subjects). Commonly used matching characteristics include age, gender, race, and socioeconomic status.

- **meta-analysis** Data gathered entirely from existing literature using statistical methodology to integrate and summarize results of several studies. The data from individual studies may be weighted by the degree of variance or other study characteristics to arrive at a pooled estimate of the relation between a factor and an outcome. Usually now applied only to analysis of previously published randomized controlled trials.

- **modifiers** Terms used to specify details about a study: (comparative, prospective, retrospective, interventional, non-interventional, observational, randomized, non-randomized, controlled, non-controlled, histopathologic, experimental, human, non-human, primate, etc.)

- **multicenter clinical trial** A clinical (human) trial involving two or more clinical centers, a common study protocol, a data center, and a data coordinating center, or coordinating centers to receive, process and analyze study data.

- **observational study** No intervention or attempt to alter the natural course of disease or physical condition.

- **ocular trauma terminology** Terminology used in descriptions of ocular trauma should conform to the recommendations of the United States Eye Injury Registry and the International Society of Ocular Trauma. (See: Kuhn F, Morris R, Witherspoon CD, et al. A standardized classification of ocular trauma. Ophthalmology 1996; 103:240- 3).

- **odds (of an event)** Odds = $\frac{\text{\# of patients fulfilling endpoint criterion}}{\text{\# of patients not fulfilling endpoint criterion}}$

- **odds ratio (relative odds, cross product)** = ad/bc where:

	Exposed	Unexposed
Disease	a	b
No Disease	c	d

- **phase I, II, III, IV (FDA)** [US FDA Classifications: (modifiers) applicable to new human therapies, including drugs and devices, under consideration for marketing approval]

- **Phase I**: Safety and dose testing in humans (usually without controls) (Studies a small number of patients to determine tolerated doses [dose escalation] and side effects for risks of new agents, devices)

- **Phase II**: Testing of safety (with or without controls) and efficacy (requires controls) in affected subjects,

- **Phase III**: Testing of efficacy and safety (with controls) (randomized controlled trial)

- **Phase IV**: Post-market surveillance (with or without controls)]

- [retrospective, comparative studies of interventions, drugs, devices]

- **placebo** An inert (pharmacologically inactive) medication, which lacks a therapeutically active ingredient.

- **population-based** A study including all individuals in a defined geographical area or otherwise clearly defined subgroup of the population. A study conducted on a randomly selected representative group (10%, 20% etc.) of the population at risk.

- **prevalence** The proportion of subjects with a particular disease or condition at a point in time (best estimate of the probability of disease before performing the test or intervention).

- **prevalent** This term implies a characteristic which is widespread.

- **prospective study** Data are collected before and/or after interventions, measurements or events by using previously defined protocols.

- **protocol deviation** Departure from the planned sequence of testing, interventions follow-up, or analysis during a study.

- **publication bias** Negative studies are unlikely to be published and are less likely than positive studies to be available for detailed literature reviews or meta-analyses. Studies which duplicate previous studies are also less likely to be published.

- **randomized (controlled) trial** A trial (human or non-human) that involves at least one experimental treatment group and one control group, concurrent enrollment, and follow-up of the test and control groups, and in which the assignment to experimental and control groups is by a randomization process. Neither the subjects nor the persons responsible for treatment can influence the assignments, and the assignments remain unknown to the subjects and staff until eligibility has been determined.

- **referral based** The subjects studied are accumulated through an intermediary (referred).

- relative frequency The average rate of occurrences of a particular event in a large number of repeated trials.

- **relative risk** The Relative Risk (RR) = $\frac{\text{risk of disease in treatment group}}{\text{risk of disease in control group}}$

- **retrieval bias** Retrieval bias may occur when data is not obtained from all relevant cases or studies.

- **retrospective study** Data collected and analyzed after all measurements, interventions, or events have taken place.

- **review** A manuscript which summarizes the scientific history and current understanding of a topic, procedure, or disease.

- **risk** The risk in a defined population and time equals:

$$\frac{\text{\# patients fulfilling endpoint criterion}}{\text{total \# patients}}$$

- **sham procedure** A deliberately ineffective intervention.

- **single masked study** The subjects or the evaluators, but not both, know which intervention is applied.

- **study size**: (for *Ophthalmology* Data base Coding)
- (Total number of study subjects)

  small series = $n \leq 10$
  medium series = $10 > n \leq 30$
  large series = $n > 31$

- **systematic review** A detailed review and analysis of previously published literature.

- **triple masked study** All participants are masked to the intervention. None of the investigators, the subjects, the data and safety monitoring committee, nor the biostatisticians know which intervention or analysis is applied.

4. Grammar/Language Guide

Good writing supports and augments good research. Clear, concise language is highly desirable in scientific communications and consistent with good scholarship. Sentence structure should be grammatically correct and language use should incorporate a reasonable breadth of vocabulary. Obfuscation, circuitous verbiage, and poor logic devalue the communication and only increase the risk of confusing the reader. Redundancy of text or duplication of text points in tables wastes precious space and unnecessarily complicate a manuscript. Authors should plan to do several revisions before submission to shorten and to focus an article. Clear writing itself greatly enhances the impact of research findings. If the following does not answer your basic issues, you may wish to submit your paper to an English Editor.

Examples of specific flaws in language use to avoid include:

a. Passive Voice

Active voice is much preferred to passive voice, which should be used sparingly. Passive voice tends to "depersonalize" the subject and remove the author(s) from active responsibility (or bias?) for his/her work. Active voice is generally more concise than passive voice and saves space and time. Passive voice may force the reader to stop and think about whom is doing the action. It does not relieve the author of direct responsibility for observations, opinions, or conclusions (e.g., "The problem of blood flow was investigated..." vs. "We investigated the problem of blood flow..."; "A slow gradual subsidence of the swelling and normalization of visual acuity was

found." vs. "The swelling subsided gradually and visual acuity returned to normal.")

b. Impersonal Passive

Many authors "cheat" the passive voice with weak sentence openers that are literally active but functionally passive. Avoid phrases such as: "It is...", "There is...", "It is important to note that...", "It is essential that...". Removing such phrases permits more succinct and clear thought. (e.g., "Although there is evidence suggesting involvement of genetic factors, the exact role of such factors and mode of inheritance remain to be elucidated fully." The same point is stated more clearly as: "The role of genetic factors is unknown.")

c. Subject/Verb Separation

Remember that a reader can hold the subject of a sentence in his consciousness only so long. Sentences in which the subject sits many words away from its verb may force the reader to reread the entire paragraph to understand the thought. For example: "The smallest of the URFs (URFA6L), a 207-nucleotide (nt) reading frame overlapping out of phase the NH2-terminal portion of the adenosinetriphosphatase (ATPase) subunit 6 gene, has been identified as the animal equivalent of the recently discovered yeast H+ - ATPase subunit 8 gene."
In this 41-word sentence, 23 words separate the subject "smallest" from its verb "has been identified." A possible revision would appear: "The smallest of the URFs (URFA6L) has been identified as the animal equivalent of..."

Keep subjects and verbs reasonably close together.

d. Abstruse, Obtuse, Arcane, or Numerous Abbreviations/Acronyms

A reasonable balance must exist between the introduction of an unconventional abbreviation and the use of the full term. Many authors tend to use abbreviations/acronyms for any phrase that has two or three words in it, in titles, captions, and text. When these abbreviations/acronyms are multiple and repetitive, reading becomes analysis of shorthand. In general, minimize use of abbreviations. Tables and figures need to make sense on their own so readers should not need to click back to the main text and search out definitions of abbreviations/acronyms. Abbreviations/acronyms need to be defined parenthetically in each figure and in a legend for each table. Similarly, they need to be defined in the précis and abstract since there things also need to make sense on a "stand alone" basis. Abbreviations should defined again at first use in the main text. There is a brief list of abbreviations/acronyms that have become "accepted" overtime and these are the only ones that do not need defining and the only ones that can be used in titles.

e. Improper Subject-Verb Agreement

Rules of prescriptive grammar require the agreement of subject(s) and verb(s) in person and number and the agreement of pronouns and antecedents in number, person, and gender. Subjects and verbs must agree. "Data" is always plural.

- "My own experience and that of my colleagues argue that..."
- "This datum from this study suggests that 1000 cGy of ext ernal beam photon therapy is not beneficial in treating CNV."

- "The linkage data and haplotype data are presented."
- "The majority of cases is considered to be multifactorial in origin."

f. Avoid split infinitives

"My mother told me to never split an infinitive." should be "My mother told me never to split an infinitive."

g. Non-Agreement of Verb Tenses

The use of both past (or imperfect) and present tenses in the same sentence or paragraph can be awkward. (e.g., "On last examination, her visual acuity is 20/40 and further surgery was refused.")

Harmonize tenses in a paragraph or presentation.

h. Redundancies

Repetition weakens a thought or presentation and sometimes can lead to amusing results

- "[Glaucoma] is caused by alterations in the sieve-like trabecular meshwork."
- "The entire tumor was excised completely."
- "For more information, communicate with the Director by writing him at..."
- "An area encompassing a 2 disc diameter radius centered on the foveal center was graded for each eye."
- "We examined a large number of patients after a fairly long, and standardized, follow-up period."
- "The family studied has twice previously been reported in the literature."

i. Human Characteristics Attributed to Disease Processes

Insensitivity and jargon often cause us to attribute human senses to a disease (e.g., "We have no explanation for the tumor's predilection for younger females.".)

j. Circumlocution and Compression (too many words vs too few)

Sometimes, in an attempt to be brief, a compressed thought will yield a bizarre statement.

- "Sudden death from heart block may require early cardiac pacing."
- "Blood shortages in Houston hit dangerously low levels."
- "The eye with the more severe pathology was used in patients with bilateral clinically significant macular edema."

k. Misplaced Modifiers

When an adjective or adverb directly precedes or follows the word that it modifies, the connection cannot be mistaken. But a modifier in an unusual position may fall into the wrong company and f orm an unsuitable attachm ent. The m omentary m isreading distracts from the substance of wha t you are saying. (e.g., "Forty-five patients were entered into the linkage analysis twenty-four of whom were affected.")

Read each sentence and thought carefully and place the modifiers precisely.

l. Hyperbole of Emphasis

An author can make a point with a powerful word alone. Adding an emphatic modifier, an intensive adverb (e.g., very, really, truly, actually, etc.), attenuates the phrase and defeats the purpose. It reduces the adjective to conversational pablum, depriving it of force. The repeated superlative or modified adjective indicates extreme positions (e.g., "absolutely no justification", "much more frequently").

m. Hyperbole of Thought

Don't use big words! Keep it simple versus

> "When promulgating your esoteric cogitative or articulating your superficial sentimentalities and amicable philosophical and psychological observations, beware of platitudinous ponderosity. Let your verbal evaporations have lucidity, intelligibility, and veracious vivacity without rodomontade or thespian bombast. Sedulously avoid all polysyllabic profundity, pompous propensity, and sophomore vacuity."

n**.** The Dangling Participle

Participles, verb forms functioning as adjectives, may detach themselves from the formal subject that they should qualify. In other words, they dangle. (e.g., "Having expressed a direct interest in our institution, we have enclosed the materials that you requested with an application form.")

The most common and misused dangling participle in medical and scientific literature is "using." Inexplicably, reviewers and editors have tolerated the admission of the dangling participle "using" in text and title. In these examples, who or what is "using"?

- "Genotyping was performed using a semi-automated fluorescence scanning system."
- "Linkage analysis was performed using both genetic model-dependent and model-independent methods."
- "The present study measured vision using the ETDRS protocol with standardized refraction."
- "Patients with useful vision in the fellow eye were treated using a lateral field, entering at a 45-degree angle, using a 45-degree couch rotation to achieve this."

Substitute a preposition as appropriate, or rewrite the phrase.

o. Stating the Obvious

"The development of this tumor probably precedes its clinical appearance." Do we really need to be so informed?

p. Slang, Jargon, and Colloquialism

"This gene probably plays some role in "run-of-the-mill" glaucoma..."

Avoid wordy and colloquial expressions such as:

- a majority of (= most)
- at the present time (= now)
- due to the fact that (= because)
- in the event that (=If)
- it is clear that (= clearly)
- it is suggested that (= I think)
- prior to (= before)
- take into consideration (= consider)
- with respect to (= about)

q. Run-on Sentences

Sentences should be reasonable in length and convey one primary thought or relationship. Not presenting several thoughts or relationships in one sentence often is confusing and create questionably inter-related concepts. While brief is better, avoid one sentence paragraphs except in rare circumstances. Usually, the thought can be appended to the preceding or following paragraph.

r. Spelling Errors

In the modern era of electronic spell checkers, typographical and spelling errors should be less frequent. Remember that spell checkers and grammar checkers have their limits and nothing replaces a good, careful final read of the manuscript. Read the manuscript (again!). Private editing is a good investment. Even ask a colleague or spouse to read the manuscript before it is submitted to the Journal.

s. Its, It's, and Its'

Its conveys possession. *It's* is a contraction of it is. *Its'* is not in use.